

Safety and Ergonomics for Hotel Housekeeping



Room Attendants

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My research took me too many websites where I found research data and best practices information. I sincerely thank all the researchers; their information provides support for the document as well as justifying safety and ergonomics improvements.

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Preface

Working closely with housekeeping and the janitorial staff helps me understand their jobs, improve their safety awareness, and help provide a safe place to work. Recently, while monitoring several housekeepers, I realized there is a need to evaluate tasks for health, safety, and ergonomic concerns.

Housekeepers typically clean 14-15 guest rooms and they are on their feet most of the day. When not on a break, the staff is standing, walking, squeezing, gripping, bending, lifting, pulling, and pushing. They work hard for which they leave tired, but they still have things to do at home.

As a Regional Safety Champion for Flik Hospitality, I stress the importance of safe work practices and creating a healthy and happy work environment. My goal is to help housekeeper's understand working safely and the proper use of personal protection equipment, ergonomic tools and techniques to improve their life after work.

Housekeepers typically receive basic training before they start work. There should be an environment where associates receive training and mentoring in the performance of their job. Developing training guidelines will support the overall safety program and ensure everyone receives the same training. Providing pictograms and handouts will give the associate take home documents.

Hotel housekeepers have high injury rates as compared to other service workers. Identifying the risks is necessary before determining how best to mitigate them. The end result will be an improvement in the health and efficiency and reduced medical costs. The intent of this document is to provide information about the risks, working conditions, and possible solutions that may be implemented.

Introduction

Housekeeping is a physically demanding job. Housekeepers clean and sanitize spaces for our comfort and convenience. There are risks associated with hotel housekeeping that typically go unnoticed.

Nearly 452,620 people work in the hotel cleaning industry.¹ 2,865 injuries were reported during 55,327 worker-years of observation. The overall injury rate was 5.2 injuries per 100 worker-years. The rate was highest for housekeepers (7.9), Hispanic housekeepers (10.6), and about double in three companies versus two others. Acute trauma rates were highest in kitchen workers (4.0/100) and housekeepers (3.9/100). Age, being female or Hispanic, job title, and company were all independently associated with injury risk². The cleaning staff performs tasks that can include dusting, vacuuming, pulling bed linens, making beds, cleaning bathrooms, cleaning mirrors, squeezing spray bottles, and disposing of trash. Housekeepers can work in unhealthy and unsanitary conditions. When a housekeeper enters a guest room or bathroom they can expect to find anything, including blood left on towels and wash cloths, uncapped syringes, bodily fluids on sheets and pillow cases, etc. Bloodborne Pathogens have not been discussed in this paper however it has to be part of the overall safety program.

Occupational Safety and Health for Hotel Housekeepers³

- In particular, the study found that employees studied suffered the highest rate of musculoskeletal disorders among all job titles studied, and ranked first (along with cooks and kitchen workers) for the highest rates of injury due to acute trauma*
- Moreover, the study found that the rate of injury varied between hotel companies, which implies that the dangers faced by employees may be mitigated by an individual corporation's practices*
- Another study of over 900 employees pointed to a significant factor contributing to workers' experience of pain: work intensity. For instance, workers who made more than 18 beds per day reported a 44% increase in lower back pain*

In the course of cleaning a guest room the housekeepers must:

- Handle a variety of chemicals and cleaning products
- Wear gloves for prolonged periods of time
- Use gripping force to remove bed linens, pick up terry, and grasp cleaning towels
- Bend to clean tubs, toilets and pick up dirty linen
- Kneel to wipe the tubs, floors and inspect under furniture
- Bend and lift mattresses to make up beds. This often requires twisting of the body, which can predispose housekeepers to back injuries.
- Squeeze spray atomizers to dispense the chemicals they use
- Push heavy carts and vacuums
- Lift and carry linens and terry

¹ According to 2016 study by Business and Labor Statistics

² American Journal for Industrial Medicine 53:116-125 (2010)

³ Prepared by the Labor Law Clinic at Cornell Law School

Health Considerations:

- Reactions or allergies to chemicals and cleaning products.
- Skin reactions and dermatitis
- Potential for musculoskeletal disorders
- Back strains from improper lifting and twisting while lifting
- Repetitive motion injuries
- Traumatic injuries from slips, trips and falls
- Respiratory illness from cleaning products and contact substances such as irritants aerosols and bleaching agents.
- Infectious diseases from agents such as biological waste (e.g. feces and vomit), bloodborne pathogens, and uncapped needles
- *Hotel employees have higher rates of occupational injury and sustain more severe injuries than most other service workers⁴*

Additional Considerations⁵

- *Contributing Factors to higher claims*
 - *Reduced work hours or fear of layoff*
 - *Reduced management presence with budget cutbacks.*
 - *Focus on getting rooms cleaned.*
- *Bad hiring practices – hiring to fill a position even if not the right person.*
- *Employees put to work before safety training*
 - *Working safely with chemicals*
 - *Proper lifting techniques*
 - *Ergonomics for cleaning*
 - *Gloves and safety glasses or goggles*
- *Wearing the wrong shoes - make employee buy non-slip shoes*
 - *Provide an incentive each year.*
- *Standing on tub edges while cleaning*
- *Overloaded laundry carts – keep load small so they can be moved easily.*
- *Use qualified trainers to provide the safety training*
- *Costliest Injuries*
 - *Cumulative and repetitive motion injuries*
- *Petra Risk conducted an extensive study and found 15 to be the magic number*
 - *15 or less rooms per day – a major reduction of reported injuries*
 - *16 or more rooms per day – significant increase in Housekeeping injuries*
- *Housekeeping Cart Safety Checklist*
 - *Are the wheels too small?*
 - *What materials are the wheels made of?*
 - *Does the housekeeper struggle to push it?*
 - *Is staff using bungie cords to secure items on carts?*
 - *Are they pulling carts from room to room?*

⁴ American Journal for Industrial Medicine 53:116-125 (2010)

⁵ From Petra Risk Solutions Article – Best Housekeeping Practices

Housekeeping – Case Study

This is a hotel with 177 rooms, 5 stories, conference rooms, and several offices. There is a staff of 13 housekeepers and no housemen. There is a laundry facility on the property with laundry workers who distribute clean linens and pick up soiled linens 2-3 times per day. The housekeepers use 3 different carts that travel with them through the halls:

- 1) Housekeeping cart for the spray bottles, tools, equipment, some clean linens, and trash.
- 2) Clean linen cart for additional clean linens, they try to carry all linens needed at one time.
- 3) Soiled linen cart consisting of 2 hampers for linens and terry. The housekeepers have to maneuver these carts through doors, in and out of elevators, and around sharp corners.

Housekeepers use atomizer sprayers to dispense their cleaning chemicals. They fill the bottles at a chemical premix station. The premix stations are in five locations. When using cleaners the housekeepers spray the cleaner onto a cloth instead of spraying directly onto surfaces, exceptions include the bathroom cleaner and air freshener. Bathroom cleaner is sprayed directly onto the shower walls and the air freshener is sprayed into the air.

Housekeepers have a choice of latex or vinyl gloves, which, they wear at all times, while cleaning a room. To prevent cross contamination, housekeepers change gloves when they move from working with soiled linens/terry and trash to clean linens/terry. They also change gloves when they change cleaning products. Laundry workers also wear protective gloves when handling dirty linens.

Ergonomic cleaning aids are available to reduce bending and awkward bending positions associated with cleaning bathrooms and showers. These aids have an extension handle with changeable heads for different cleaning needs. Some housekeepers do not utilize the aids, instead they chose to contort themselves in order to clean the toilet, bathtub, and shower. Smaller housekeepers stand on the edge of the tub to reach the shower walls. They also kneel to clean the bathroom floor. Aids for making beds are currently not available. Housekeeping does provide fitted sheets, which reduces the number of times they lift a mattress.

At the beginning of his or her shift, each housekeeper prepares by:

- Stocking Carts
 - Housekeeping Cart
 - Terry
 - Bed linens
 - Trash bags
 - Dusting cloths
 - Mop
 - Broom
 - Pens
 - Note paper
 - Bathroom amenities
 - Filling spray bottles
 - Clean Linen Cart
 - Stocked with supplies that will not fit on the housekeeping carts so they can complete all the assigned rooms
 - This cart gets very heavy when they have 15 rooms

- Dirty Linen Hampers
 - These carts prevent linens from laying on the hall floor.
 - At the end of the shift, they are folded and stored. Each morning the hampers are unpacked.
- Chemical premix stations are in specific closets and each housekeeper has to walk to a closet for refills. A pump station can be 100+ feet from where the housekeeper is working. Housekeepers use elevators instead of stairs.

Vacuuming requires both pushing and pulling motions. Daily vacuuming responsibilities include assigned rooms and corridors. There are two different vacuums available to staff. The Insight has more options but also weighs more and requires more force to lift and push.

- Oreck Model: CH50100 – being phased out
- Insight 100 Model: CH0100

Housekeepers usually cannot clean rooms in order as they must accommodate guest schedules requiring carts to be pushed or pulled additional distances. If a housekeeper has 15 rooms to clean, a cart could be moved 18-20 times.

During the cleaning process, housekeepers have a variety of products to use. Including the following spray bottles with an atomizing pump sprayer:

- Window cleaner
- Multi surface cleaner
- Bathroom Cleaner
- Mold/Mildew Spray
- Deodorizer

There are 2 separate procedures for cleaning guest rooms: Vacant Rooms and Occupied Rooms (stay overs). Vacant rooms require more work because everything must be cleaned. Occupied rooms requires the housekeeper work around the guests' belongings.

- Common Tasks:
 - Don gloves and change when appropriate
 - Pick up and dispose of trash
 - Dry shower curtain
 - Clean sink, shower, tub, and toilet
 - Open blinds and curtains
 - Fold and store iron and ironing board
 - Remove soiled linens and terry
 - Remake beds
 - Hang fresh bath towels, hand towels and wash cloths
 - Place a new bath mat on the tub
 - Replenish amenities
 - Vacuum room and hall
 - Clean bathroom floor
 - Clean mirrors
 - Inspect room
 - Cut off lights

- Occupied Rooms:
 - Fold and stack guests' clothing
 - Organize guest shoes in closet or under luggage rack
 - Organize guests toiletries on a hand towel
 - Dust around guests' belongings.
- Vacant Rooms:
 - Wipe down headboard
 - Remove blanket and bedspread with soiled linens, as needed
 - Scrub shower walls
 - Clean counter top, soap dish, and amenity tray.
 - Clean coffee maker and decanter

Housekeeping – Case Study Details

Rooms per day

- 14-15 (when short staffed this can be 15-20)

Gripping

- Removing bedspread and blanket
- Pulling bed linens
- Picking up towels
- Cleaning towels
- Trash cans & trash bags
- Dusting wands
- Vacuums
- Mops/brushes

Squeezing

- Wet rags to wring out water
- Spray bottles (*Figure 1*)
 - Housekeepers pump each spray bottle 6-8 times for each product except the bathroom cleaner which requires 14-18 pumps
 - There are 5 different products which are used in each room
 - 6-8 pumps x 4 products (avg.) x 15 rooms = 360 to 480 pumps
 - An additional 14-18 pumps x 15 rooms = 210-270 pumps for bathroom cleaners.



Figure 1 - Typical Atomizer Sprayer

Bending

- Making beds (can include twisting)
- Wiping out refrigerator
- Picking up towels
- Picking up trash
- Loading and unloading housekeeping and clean linen carts
- Cleaning bathroom
- Cleaning toilet
- Picking up guests' clothing
- Organizing guests' shoes

Pushing-Pulling

- Housekeeping carts (150-200 lbs. estimated) (*Figure 2*)
 - This often requires moving the carts multiple times because they are not able to clean rooms in order.



Figure 2- Housekeeping Cart

- Vacuums
 - Oreck Model: CH50100 – being phased out (*Figure 3*)
 - 9 pounds new and empty
 - Insight 100 Model: CH0100 (*Figure 4*)
 - 23 pounds new and empty
 - The suction strength increases the difficulty to push and pull the vacuum. As the vacuum beater brush wears down the vacuums require more force to push and less force to pull.



Figure 3 – Oreck Vacuum



Figure 4 - Insight Vacuum

- Soiled Linen Hampers (30.6 – 51 lbs. est. plus 8.8 lbs. for each blanket/spread) (*Figure 5*) – They can have 3-5 rooms of soiled linens and terry. Also one blanket and spread.
- Clean Linen Carts (197 lbs. est.) (*Figure 6*) - bed linens, terry, bedspreads and blankets.



Figure 5 – Soiled Linen Hamper



Figure 6 – Clean Linen Cart with bundled linens.

Lifting & Carrying

- Dirty bed linens (5.4 lbs.) – Carry 10-15 feet
 - 1 – fitted sheet
 - 1 – flat sheet
 - 4 – pillow cases
 - Add 8.8 lbs. for bedspread and blanket
- Dirty terry (4.8 lbs.) – Carry 8-10 feet
 - 2 bath towels
 - 2 wash cloths
 - 2 hand towels
 - 1 bath mat
- Load and unload vacuum from HK Cart
- Lift clean linens from the cart (requires pulling and lifting)
- Lift clean terry from the cart (requires pulling and lifting)
- Lift mattress while making bed (may include lifting and twisting)

Observations

Housekeepers work hard and take pride in their accomplishments but they are prone to injury due to the nature of their tasks. There is an increased risk for injury due to overloaded carts, standing on tub edges, pumping atomizer spray bottles, and using manual cleaning methods. Slip and fall injuries are among the most common and expensive seen in the workplace. The work, combined with working conditions, increases both the potential for injury as well as the risk of liability. Evaluating tasks and observing staff work habits will help identify safety concerns. Task modification and hazard elimination is crucial in developing a safety program that will prevent accidents and minimize liability.

This can be accomplished through observation of staff during working hours. People work in unsafe conditions on a daily basis and eventually adapt to the unsafe conditions and general conversations may not reveal what those responsible for the workplace safety need to know. Monitoring daily routines may be uncomfortable since shadowing someone has the potential to create an environment in which the observed chooses to alter his or her behaviors. Most people do not handle criticism well, nor do they want to be held out as an example for their peers. This is why building a foundation of trust and confidence with employees is imperative if a healthy workplace environment is desired.

Body Mechanics

Considering ergonomics for each task not only reduces overall costs, it improves efficiency, minimizes repetitive motion injuries, and improves employee morale. The following sections will provide specifics on the tasks and best practices.

Ergonomics (from the Greek word ergon meaning work, and nomoi meaning natural laws), is the science of refining the design of products to optimize them for human use. Human characteristics, such as height, weight, and proportions are considered, as well as information about human hearing, sight, temperature preferences, and so on. Ergonomics is sometimes known as human factors engineering.⁶

Proper lifting techniques are essential for injury prevention. Proper storage greatly reduces the need to bend and lift heavy items. Shelf storage best practices include placing the heaviest materials (greater than 20 pounds) on the center shelves to reduce the bending and lifting required. Lighter materials (less than 20 pounds) are stored on the higher and lower shelves. These practices are beneficial for the housekeeping storage areas as well as the carts.

⁶ Definition from Techtargent.com

Tips from the University of Virginia ⁷

When you lift...

DO...

- *Plant your feet firmly - get a stable base.*
- *Bend at your knees - not your waist.*
- *Tighten your abdominal muscles to support your spine.*
- *Get a good grip - use both hands.*
- *Keep the load close to your body.*
- *Use your leg muscles as you lift.*
- *Keep your back upright, keep it in its natural posture.*
- *Lift steadily and smoothly without jerking.*
- *Breathe - If you must hold your breath to lift it, it is too heavy - **GET HELP.***

DO NOT...

- *Lift from the floor.*
- *Twist and lift.*
- *Lift with one hand (unbalanced)*
- *Lift loads across obstacles.*
- *Lift while reaching or stretching.*
- *Lift from an uncomfortable posture.*
- *Don't fight to recover a dropped object.*
- *Don't hold your breath while lifting.*

Pushing and pulling tasks are among the most common work activities and they are the cause of many injuries. The most common injuries are the result of overexertion and include back strains, arm/shoulder strain, etc. Fully stocked housekeeping carts are very heavy and their weight needs to be assessed so that their burden does not exceed an employee's capabilities. Factors affecting how much weight a person can push includes their body weight and strength, the posture used while moving the cart, and the distance and direction it needs to be moved (pushing loads around corners requires an unhealthy twisting motion). A cart maintenance program will serve to keep them properly functioning and help keep the wheels rolling freely. Reducing the weight of the carts should be a priority. As an example, the clean linen carts are stocked once with all needed linens and terry. Overall weight can be reduced if the cart is loaded twice daily, once at the beginning of the shift and a second time after lunch.

Tips from Allied Universal ⁸

Solutions for Pulling

- *Keep your feet hip-width apart.*
- *When bending forward to pull, drop your hips and bend your knees. Concentrate on keeping your core muscles tight to decrease pressure on your back.*
- *Always face the object you are pulling. Take small, backward steps once you start to move.*

⁷ University of Virginia Office of Environmental Health & Safety – Ergonomics – Back Injury Prevention

⁸ Allied Universal – Lifting, Pushing and Pulling Safety

Push Before Pulling

- *It is safer to push rather than pull.*
- *Keep your back straight and bend your knees.*
- *Do not twist at your hips to push, but rather keep your core tight and use your legs and body weight to move the object.*
- *Face the load squarely rather than at the top or bottom of the object.*

Cleaning products used in housekeeping are dispensed through an Ecolab premix station. These are typically mounted above mop sinks. The premix dispensing buttons are generally 5' 11" high and the fill tubes are 5' high, which is above the eye level for many housekeepers. Some of the shorter housekeepers stand on the edge of the mop sink to reach the premix station dispensing buttons, which increases their risk of slips and falls. Filling a bottle requires a person to hold it in one hand and press the dispensing button with the other. In many instances, the person must stand facing the premix station at a 30-45 degree angle, which requires twisting of the torso. Overfilling a bottle could spray chemical in the housekeeper's face. Chemical premix stations must be mounted so the housekeepers are able to approach a premix station squarely, minimizing the twisting motion and eliminating the need to balance on a ledge.

Repetitive motions can cause long-term pain and discomfort. Repetitive motions are those that require the same movement repeated for a prolonged period of time. These include activities such as vacuuming, sweeping, cleaning windows, squeezing, gripping, etc. These motions are present in both our work and home life. Housekeepers are prone to repetitive stress injuries from the continual work of changing sheets, washing bathroom floors, pumping atomizer spray bottles, and vacuuming. Tools and equipment are available to reduce the repetitive motions and reduce the possibility for repetitive motion or repetitive stress injuries.

- Mattress Lifters, to reduce lifting and twisting.
- Ergonomic cleaning tools to reduce reaching and bending.
- Atomizer bottles with longer pump handles to involve the whole hand.
- Pump up spray bottles so there is a single motion to spray product.
- Backpack vacuums for stair steps

*Tips for staying safe include:*⁹

- *When making beds, do not bend. Position yourself near the bed.*
- *When cleaning surfaces, switch off which arm you are using to allow the other arm to rest.*
- *When moving carts, keep the heaviest or commonly used items between your chest and hips – you have more strength in this part of the body.*
- *Wear comfortable shoes.*
- *Stretch your back, arms and shoulders.*
- *Report any pain.*
- *Share strategies used to make work easier.*
- *Eat healthy, exercise and sleep well.*

⁹ Focus on Ergonomics – Published in the Safety & Health Magazine - The Ohio State University and OSHA

Housekeepers will occasionally team up to help one another. This helps with developing a team and fostering the “let’s get it done” attitude. Other benefits from two people cleaning a room is reduce muscle fatigue, sharing tasks allowing a set of muscles to relax, and reducing the times a single person has to bend, grip, push/pull vacuums, etc. Also, one person can be thinking about something other than work but when working as a team there can be a common focus.

The Institute for Ergonomics¹⁰ issued a report and here are some excerpts:

- *Ergonomics*
 - *Benefits*
 - *Improves efficiency of housekeeping work*
 - *Increases work quality*
 - *Reduces discomfort or pain in housekeepers*
 - *Lowers housekeepers injury risk*
 - *Allows housekeepers to work more easily*
- *Injuries (without ergonomics)*
 - *Acute – occurs after a one time incident*
 - *Cumulative Trauma Injuries – Develop of a period of weeks, months, or years.*
 - *Pceer 100 employees, housekeepers have a higher Cumulative Trauma Injury rate than other workers.*
 - *Housekeepers 3.2*
 - *Dishwasher 2.0*
 - *Cook/Kitchen 1.7*
 - *Server 1.1*
 - *Cumulative Trauma Injuries develop in the back from*
 - *Lifting or pushing heavy objects*
 - *Twisting*
 - *Bending at the waist*
 - *Cumulative Trauma Injuries develop in the shoulder and neck from*
 - *Reaching*
 - *Working with the same arm, not allowing muscles to relax*
 - *Pushing heavy objects, like vacuums*
- *Ergonomic Products and Systems to Make Housekeeping Work Easier*
 - *Fitted sheets*
 - *Bed making assistive devices, reduces the need to raise mattress (figure 9)*
 - *Pushing supply carts – consider motorized carts*
 - *Purchase lightweight vacuums – less effort – less force needed*
 - *Alternative vacuum methods*
 - *Canister vacuum – easier to push/pull – flexible hose is easier to maneuver – retractable cord reduced cord handling*
 - *Backpack vacuum – Faster vacuuming time – only the wand needs to be moved. Note: also better for stairs*
 - *Toilet brushes with long handles*
 - *Use scrub brushes with long handles – showers and tubs (figure 8)*
 - *Spray bottles should have large handles to fit in the hand – textured surfaces resist slippage*
 - *Dusting – use microfiber products to replace mops and lambs wool*

¹⁰ Institute for Ergonomics, The Ohio State University, Columbus, Ohio

Personal Protective Equipment

Gloves

Different types of gloves are available for use, however housekeepers may be unfamiliar with the differences among them. For example, prolonged use of latex gloves can cause the wearer to develop an allergy. *A Mayo Clinic report concludes - connection between food allergy and latex allergy: Latex allergy also is related to certain foods, such as avocados, bananas, chestnuts, kiwis and passion fruits. These foods contain some of the same allergens found in latex. If you're allergic to latex, you have a greater chance of also being allergic to these foods.*¹¹

*What are latex allergy symptoms?*¹²

In most cases, latex allergy develops after many previous exposures to latex. Latex allergy symptoms may include hives, itching, stuffy or runny nose. It can cause asthma symptoms of wheezing, chest tightness and difficulty breathing. Symptoms begin within minutes after exposure to latex containing products. The most severe latex allergy can result in anaphylaxis, a serious allergic reaction involving severe breathing difficulty and/or fall in blood pressure (shock).

Allergic skin problems can occur following direct contact with allergic latex proteins in latex glove products. Symptoms may include immediate itching, redness and swelling of skin that touched the item containing latex. These and other latex allergic reactions are less common now. Many hospitals or doctors' offices have switched to non-latex gloves or low protein latex gloves.

A second type of skin allergy called "allergic contact dermatitis" may be caused by chemicals used to manufacture rubber gloves. This dermatitis is recognized by the eczema and blisters on the back of the hands. It resembles a poison ivy rash, and begins 1 to 3 days after wearing rubber gloves.

Direct physical contact with latex products is not needed to trigger an allergic reaction. Anaphylaxis and severe asthmatic reactions have been caused by inhaling latex proteins in the air resulting from the powder in the latex glove.

Safety Data Sheets identify the proper gloves to use. Avoid use of a glove that can cause the wearer to develop an allergy. Safety Data Sheets will also identify other types of personal protection equipment recommended. *Example: Daycon Stainless Steel Cleaner and Protector SDS Section 8 - Individual protection measures, such as personal protection equipment: Eye/face protection: Wear safety glasses with side shields (or goggles). Hand protection: Wear appropriate chemical resistant gloves. Skin Protection: Wear appropriate chemical resistant clothing.*¹³

All Safety Data Sheets provide general hygiene considerations e.g.: "All employees must wash after use and before eating, drinking, or smoking".

¹¹ Mayo Clinic Report Written by the Mayo Clinic Staff

¹² American College of Allergy, Asthma, & Immunology – Types of Allergies – Latex Allergy

¹³ 15 oz. Daycon Stainless Steel Cleaner and Protector Safety Data Sheet

Respiratory Protection

Respiratory safety is essential to any safety and health program. The best strategy is to avoid products and working conditions that require respiratory protection. A respiratory tract injury may cause long-term breathing problems, such as chronic obstructive pulmonary disease (COPD), emphysema, etc. Referencing the SDS for each product will identify PPE requirements, including respiratory protection. Failing to provide protection can cause years of suffering and cost the company thousands of dollars in medical fees and long-term care.

Respiratory Protection Programs are very complicated to develop and maintain. Respirators (two-strapped dust masks, half- and full-faced masks, etc.) cause stress to the respiratory and cardiovascular system. Prior to using a respirator, individuals must participate in a medical examination and fit testing. The OSHA Respiratory Protection Standard 1910.134 provides specifics for developing and maintaining the respiratory protection program.

Safety Glasses or Safety goggles

Safety glasses and safety goggles have to be available to all employees exposed to an eye or face hazard such as flying objects, molten metal, chemicals, etc. Normal eyewear does not offer the same protection as safety glasses or safety goggles. Face shields offer additional protection and can be used in conjunction with safety glass or safety goggles.

Training must be provided to employees who are required to use eye and face protection. The training must be comprehensive, understandable, and recur annually, and more often if necessary.

This training should include at a minimum:

- *Why the eye and face protection is necessary and how improper fit, use, or maintenance can compromise its protective effect.*
- *Limitations and capabilities of the eye and face protection.*
- *Effective use in emergency situations.*
- *How to inspect, put on and remove.*
- *Maintenance and storage.*
- *Recognition of medical signs and symptoms that may limit or prevent effective use.*
- *General requirements of OSHA's eye and face protection standard. [[29 CFR 1910.133](#)]*¹⁴

Chemicals and Cleaning Products

Housekeeping uses Ecolab chemical premix stations (*figure 7*) for dispensing cleaning products. The lower section of the cabinets are often open, increasing the risk of chemical concentrate bags falling out. The cabinets should remain locked except when changing bags. A SDS Book with appropriate SDS documents along with an eyewash station must be close to each premix station. Initial and annual training is required for the use of the SDS Book, proper use of the premix station, safe handling procedures for chemicals, and labeling. Safety precautions and PPE should follow the manufactures guidelines.

Proper labeling is required for all products. It is imperative that each product is correctly placed in its correct bottle. This can be achieved by affixing the premix stations and spray bottles with matching labels. When changing the products used in a bottle, clean the bottle of all residue and replace the label. Never mix chemicals, even if a bottle contains only residue.

¹⁴ From OSHA's list of frequently asked questions.



Figure 7 - Ecolab Chemical Premix Station



Figure 8 - EcoLabs Ergonomic Bathroom Cleaning Tools



Figure 9 - Mattress Lifter

Equipment and Tools

Up-right vacuums are common in housekeeping. They are easy to store, fewer parts to break, and easier to maintain and less likely to break. There are, however, also risks associated with up-right vacuums. Risks can include the following: low center of gravity ensures an awkward push/pull maneuver, handles may not be ergonomically designed, wrapping up extension cords which must be wrapped and secured after each use, and having to lift the vacuum to clean steps. Best practices include reviewing your property and matching the vacuum to your needs. If your primary need is vacuuming carpets with occasional edging, a heavy vacuum with a number of accessories is probably not necessary, as a lightweight commercial vacuum could be utilized along with a broom to clean the edges. A backpack vacuum requires the user to rest the weight rests on their shoulders and hips. The user only has the wand and hose to manipulate.

Conclusion

The housekeeping industry has an important role in our safety and wellbeing. Hotel housekeepers are different from other types of housekeeping because they provide clean facilities for guests to rest and sleep. Without proper cleaning, sickness and disease would quickly spread among guests. Hotel housekeepers have one of the largest potentials for injuries as compared to other service jobs. Protecting the housekeepers from chemicals, cumulative trauma injuries, and other safety hazards should be a top priority for all supervisors, managers, directors, and stakeholders.

Ensuring a safe and ergonomically friendly workplace is equally as important as providing a clean facility to guests. Working safely will not only improve efficiency, it will improve morale and company loyalty. There are costs associated with ergonomics and safety, but these costs are often recovered as a result of a reduced injury rate and increased productivity. Some costs are not as simple to calculate because a change in one department may have a ripple effect through other departments.

The Institute for Ergonomics recommends fitted sheets because they require less bending, tucking, and lifting. However, fitted sheets have elastic bands that are damaged by high temperatures associated with washing and drying. The cost of replacing fitted sheets can be expensive, but the costs related to employee health can be magnitudes greater if the injuries are frequent and pronounced. Investing in additional ergonomic tools can be a satisfactory alternative with a longer life span. Other considerations must include additional labor, specialized cleaning products or procedures, and determining whether or not improving ergonomics in one department will create an ergonomic problem for another department.

Safety is greater than ergonomics. Safety also includes understanding body mechanics, proper lifting techniques, chemical safety, electrical safety, and accident prevention. Developing safety programs will benefit the current staff, future staff, and help build the company image in the community.

Would you spend \$1 to save \$2 in the future? How would you feel about \$3 or \$4 or \$6 in future savings for every dollar you spend now? (Pictures 10 & 11)

The choice may seem like an easy one, but when that first dollar becomes millions of dollars, and the savings may not be seen until years later, spending money up front can become harder to justify. This is a situation in which many occupational safety and health professionals find themselves when trying to convince upper management that investing in training or equipment will lead to safer workplaces.

But experts say the savings exist, and – armed with the right figures on the costs of injuries – safety pros should be able to successfully argue that investments in safety will result in savings down the line.¹⁵

This information is intended to support the safety and health of the people working in the hotel housekeeping industry. Safety is a specialized profession and people outside the profession should seek out people who can help them. Taking classes, working with corporate safety committees, and utilizing outside resources will benefit your safety programs.

¹⁵ National Safety Council – The ROI of safety by Kyle W. Morrison

Cost of occupational injuries and deaths, 2012

Total cost to society:

\$198.2 billion

\$36.5 billion in administrative expenses

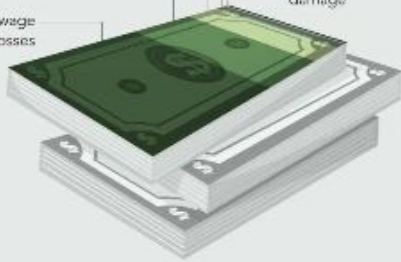
\$55.7 billion in medical costs

\$89.6 billion in wage and productivity losses

\$11.0 billion in employers' uninsured costs, which includes time to investigate injuries and write reports

\$3.2 billion for fire losses

\$2.2 billion for vehicle damage



\$1,400

= INJURY IMPACT
PER WORKER

This includes the goods or services each worker must produce to offset the cost of work injuries. It is not the average cost of a work-related injury.

\$39,000

Cost per medically consulted injury, including estimates of wage losses, medical expenses, administrative expenses and employer costs

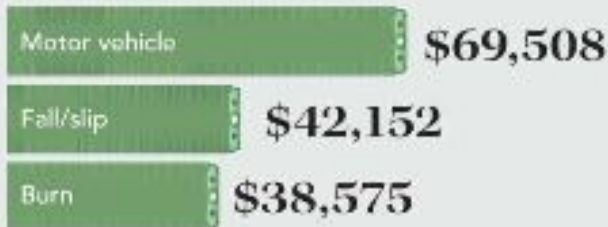


Figure 10 - National Safety Council - The ROI of Safety

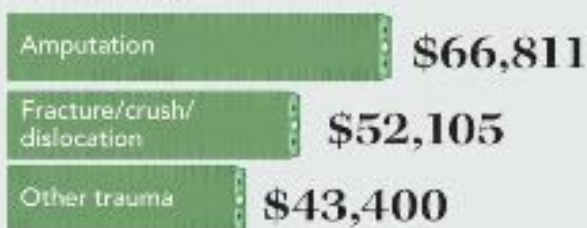
How much?

Injuries can be costly. Here is a quick rundown of some of the more expensive injury types by average cost per workers' compensation claim from 2010 to 2011.

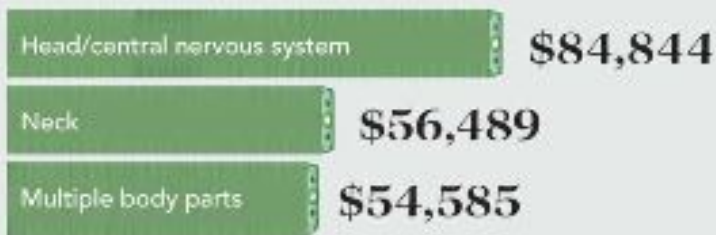
BY CAUSE OF INJURY:



BY NATURE OF INJURY:



BY PART OF BODY:



The average combined cost was **\$36,592** per claim.

Cost per death:

\$1.42
MILLION



Source: National Safety Council, "Injury Facts," 2014 edition

Figure 11 - National Safety Council - The ROI of Safety

Author Biography

Michael Walton is a professional facilities manager with more than 30 years of experience and in-depth training in facilities management, emergency management, and business continuity. Michael has been involved in the study of ergonomics for more than 15 years, with the goal of helping people work more comfortably. His work as an Emergency Medical Technician enhances his understanding of the human body and seeks to prevent injuries sustained from repetitive motion and strains.

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