Part G Step 4 - *What fixes the hazards?*

G.1 What's this part all about?

The committee has gone through three steps to identify symptoms and hazards and learned new ways to see them. The next step is to recommend changes to prevent or reduce the hazards.

The best prevention is getting rid of hazards. This kind of solution, remedy or "fix" is often a long-term goal with several stops along the way. Sometimes the hazard can't be removed entirely, but the committee/rep can go a long way when making recommendations about how to reduce the hazard and better protect workers' safety and health.

The *Prevention triangle* (SH.13) summarizes the principles of prevention and the different types of changes that are possible. It is consistent with the goals of the health and safety law and its requirements about how hazards should be fixed [e.g. section 6.1(1) of the *Workplace Safety and Health Regulation*].

Level 1 solutions are best because they remove the hazard. Solutions relying on Level 3 prevention often require a fair bit of effort and resources to implement and maintain, but are more likely to give inconsistent protection.

<u>Level 1 prevention</u>

- get rid of/eliminate hazards
- may involve new equipment, tools or setups but also can be done by engineering
- find alternatives using the substitution and the precautionary principles
- often take more time and effort but may cost less in the long run

The Prevention triangle

Did you know?

Examples of Level 1 prevention ("Remove the hazard")

- set noise limits on orders for new equipment and tools
- develop and use a "green" purchasing policy
- set guidelines for ergonomic tools, equipment, work stations, etc.; ensure purchasing "rules" include them

Level 2 prevention

- limit the hazard's spread at the source
- also known as engineering controls or controls at the source
- usually are medium or short-term solutions because of the time and effort involved

Level 3 prevention

- limit or reduce hazard by putting something between the worker and the hazard
- often the least effective solutions
- includes "controls along the path" - between the hazard and workers - and "controls at the worker" - requires the worker to do and/or wear something
- other uses of Level 3 prevention:
  - for emergencies
  - exposure is very limited/rare
  - while waiting for Level 1 or 2 solutions, or to back them up
  - when nothing else is possible
- may seem to be less expensive and take less time and effort but often are not really

Here's an example of how the *Prevention triangle* works.

You have a noise problem. It could be a hospital kitchen dishwasher, an office printer or a factory machine.

A Level 1 solution is to replace the piece of equipment with one that is much quieter. The purchase requisition could state noise levels must be less than a certain level (go for at least 65 dBA, or less). This may not be done today or tomorrow, but can be made a priority in the capital budget.

The goal is to get rid of hazardous noise levels. Noise does more than cause deafness. At much lower levels, it also interferes with your ability to hear conversations and affects the cardiovascular - heart and blood vessels - system. So if these are the issues, you'll need equipment that is pretty quiet.

While you're waiting for the quieter piece of equipment, a Level 2 solution would enclose the dishwasher, printer or machine so that little noise gets out. This prevents exposure to the hazard at the source. It does not get rid of the hazard.

Did you know?

Examples of Level 2 prevention ("Controls at the source")

- ventilation systems that enclose the hazard and remove all airborne hazards from the work environment
- enclosures to reduce noise levels
- isolate the hazard or the workers exposed to it
- wet cutting to reduce dust

Did you know?

Examples of Level 3 prevention ("Controls along the path")

- local ventilation that does not enclose the hazard
- general ventilation
- mechanical guards/devices
- some administrative controls (e.g. work breaks)

Did you know?

Examples of Level 3 prevention ("Controls at the worker")

- personal protective equipment
- administrative activities - e.g. rotating workers
- work procedures
- training
- supervision
- emergency plans
- housekeeping
- repair and maintenance programs
- hygiene practices/facilities - e.g. eye wash stations, wash- up areas

To protect those who use the equipment, you'll need other solutions too. Level 3 solutions come in two forms. Prevention or controls along the path would involve having baffles and other sound-absorbing materials in appropriate spots. This would decrease the amount of noise that people hear, unless they are standing directly beside the piece of equipment or noise source.

Prevention or controls at the worker include proper, fitted ear plugs (muffs if the noise frequency is quite low), spending as little time as possible right at the machine and good maintenance schedules.

G.2 Why is this step important?

Eliminating hazards and reducing exposure to them is a key part of our goals for a healthy and safe workplace. Committee members and worker reps need to keep these goals in mind as they do their work. It's particularly important when it comes time to make recommendations for changes in the workplace.

This doesn't mean that you'll always recommend Level 1 prevention solutions - at least right away. What's important is to know the principles. Use them to get as close as possible to the source of the hazard for the short- and long-term.

It's also important to remember the difference between a solution and how you get it - the strategy.

G.3 What tools can we use to learn more about prevention in our workplace?

- ✓ Prevention triangle (SH. 13)
- ✓ Root cause analysis and the 5 whys (CP. 16)
- ✓ Six Thinking Hats (CP. 17)
- ✓ Experience elsewhere - check the *Resource Guide* and Part C of this manual

COMMITTEE ACTIVITY

Levels of prevention

1. Choose a priority hazard from your workplace. Decide in what hazard category it fits. Brainstorm possible changes for each level of the prevention triangle. [Use the *Six Thinking Hats* tool (CP.18) for brainstorming.]

2. Then choose one hazard from each other category. For each one, brainstorm possible changes for each level of the prevention triangle. Keep track of your answers.

3. Decide what follow-up and recommendations you need to do.

G. 4 What is the next step?

- Use the triangle
  - as a reminder of the principles of prevention
  - to figure out how close recommended changes are to the source of the problem or hazard (with root cause analysis in Part F)
  - in training
  - during discussions about specific situations
- start making lists about short- and long-term solutions for different kinds of hazards
- set priorities about which kinds of hazards you want to deal with first [see *Criteria for decision-making* (CP.6) in the Committee Process Toolbox]
- do some research to find out about best practices and innovative solutions for specific hazards by:
  - talking to people within your workplace - the workers and supervisors in the area affected, maintenance workers, engineers, health and safety staff
  - checking with local industry associations to which the employer belongs
  - if you're in a union, asking your union staff person or unions representing workers in similar workplaces
  - finding local sources of information through your networks and the *Resource Guide*
  - looking for other sources of information (start with the *Resource Guide*)
  - look for "green" solutions whenever possible (see the *Resource Guide* for places to start)
  - make lists about the solutions that are in place and use the lists to evaluate the effectiveness of different "fixes"

COMMITTEE ACTIVITY

Take the list of hazards found during inspections or from your maps. For each one, review Using the Law Toolbox in this manual to make a list of "the rules" in the law about fixing hazards in general and your list in particular.

Examples:

- If you have lighting or noise problems, look at Part 12 and section 14.4 of the *Workplace Safety and Health Regulation*, as well as the general duties in the *Act*.
- If musculoskeletal injuries or ergonomic hazards are present, how can you use Part 8 of the *Workplace Safety and Health Regulation?*
- For work organization hazards (stressors), how can you use the definition of "health" to deal with those hazards?

G. 5 What is the law say about fixing hazards? Who has to do what?

Who?	What are they supposed to do?	WSH Act	WSH Regulation
Employer	fix/remedy hazards using principles of the prevention triangle		6.1
	include in their safety and health program:	7.4(5)	
	- a policy about protecting workers' safety & health	7.4(5)(a)	
	- procedures to protect health & safety when outside contractors/self-employed work on site	7.4(5)(g)	
	- how hazards will be fixed, & emergency procedures	7.4(5)(b)	
	- prevention measures for chemical & biological substances specifically	7.4(5)(f)	
	prevent or reduce exposure to specific hazards:		
	- ergonomic ones that may/ do cause musculoskeletal injuries		8.1(1)(b), 8.1(2) & 8.1(3)(b)
	- patient handling & using mechanical lifts		39.5 & 39.10
	- working alone/in isolation		9.2(2) & 9.3
	- harassment		10.2(1)
	- violence		11.1(4)
	- falling while getting onto a vehicle or load		14.17
	- confined spaces		15.3
	- chemical & biological substances with Threshold Limit Values (TLVs)		36.7
	- airborne chemical & biological substances without TLVs		36.5(1)(c)
	- infectious substances in health care facilities		39.3
	- needlestick injuries in health care facilities & use of "safety-engineered" needles	45.1(1)	39.8
	- controlling dust levels on construction sites		2.15

The authors' wording presented above does not replace the Province of Manitoba's legislated Act and Regulations. The official versions can be found on-line at http://www.gov.mb.ca/labour/safety/actregnew.html or by contacting the Manitoba Workplace Safety and Health Division office.

Who?	What are they supposed to do?	WSH Act	WSH Regulation
Employer	- exposure to noise levels above 85 dB(A) - robots - radiation levels - working in traffic - asbestos and preventing it getting in the air		Part 12 16.32 & 33 18.2 & 3 20.5 - 20.8 37.5 - 37.9
	maintain a safe and healthy workplace	4(2)(a)	
	inspect tools and equipment regularly		16.4(3)
	prepare "safe work procedures" for specific workplace hazards		2.1
	use lock-out and energy isolation procedures to de-energize machinery		16.14 - 16.18
	provide protective equipment & devices with training and instruction	4(2)(c)	
	provide information/training about safety & health hazards	4(2)(b)	
	have WHMIS program - MSDSs, labels & training for "controlled products"		Part 35
	training before starting job or new task or different location	4(4)	
	provide competent supervisors who are familiar with health & safety issues and the law	4(2)(h)	
Worker	report hazards and do other things to take care of their own health & safety & that of others	5(a)	
	wear and use tools & protective equipment they are given	5(b)	
	may refuse to do tasks they think are dangerous to themselves or others	43(1)	

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Who?	What are they supposed to do?	WSH Act	WSH Regulation
Supervisor	protect the safety & health of those they supervise	4.1(a)(i)	
	ensure workers work according to the law	4.1(a)(ii)	
	ensure workers use all protective devices/equipment	4.1(a)(iii)	
	tell workers about all hazards in the work area	4.1(b)	
Workplace safety & health committee/ Representative	deal with safety & health concerns/complaints	40(10)(a)	
	participate in identifying hazards	40(10)(b)	
	develop & evaluate measures to protect safety, health & welfare	40(10)(c)	
	co-operate with workplace occupational health service	40(10)(d)	
	develop/promote education & information programs	40(10)(f)	
	make recommendations to employer about health & safety	40(10)(g)	
	inspect the workplace regularly	40(10)(h)	
	investigate workplace injuries & dangerous occurrences	40(10)(i)	
	keep records about concerns/ complaints & other matters	40(10)(j)	
	be part of developing "safe work procedures"		2.2

There are other players in the picture too. See the next page.

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Other "players"

Owners must keep land or buildings in a condition so as not to create safety and health hazards there [*Act*, section 7.2(a)].

Suppliers must provide tools, equipment, machines, devices or chemical or biological substances that are "safe" when used according to instructions provided [*Act*, section 7.3].

Self-employed people must do their work so that they don't expose themselves or anyone else to hazards from or related to the job, as far as reasonably practicable [*Act*, section 6].