



Level 2

Occupational Health Committee Training

WorkSafe[™]

SASKATCHEWAN

Work to live.



Day 2

Incident investigations



Work to live.

Administration

- Emergency exits
- Washrooms
- No smoking policy
- Cell phones
- Breaks



Course materials

- Name card
- Workbook
 - Self check
 - Evaluation
- Reference publications
 - Inspections: A Guide for Committees and Representatives
 - Investigations: A Guide for Committees and Representatives
- Legislation



Introductions

- Instructor
- Introduce yourselves
 - Name
 - Employer
 - Industry
 - How long have you been part of the OHC?
 - Have you been involved in a workplace investigation?



Learning objectives

1. Learn regulatory requirements for investigating workplace incidents and dangerous occurrences
2. How to collect evidence for an investigation
3. How to analyze evidence for an investigation
4. How to develop a workplace investigation report
5. How to take action following a workplace investigation



About this course

- Conducting investigations is an important function of occupational health committees (OHCs) and worker health and safety representatives
- This course will help you:
 - Understand responsibilities
 - Investigate effectively



About this course

Two parts to course:

- Part I: Regulatory requirements
- Part II: CART (investigation techniques)
 - Collect evidence
 - Analyze evidence
 - Report (reporting to OHC and writing report)
 - Take action (employer)



Icebreaker project

- From your personal experiences with investigations, discuss what went well and what didn't go well
 - Did the investigation team create a report?
 - Who did the report go to?
 - What actions were taken, if any, to correct the situation?
- If your group does not have investigation experience, discuss what would be important in conducting an investigation
- What do you want to learn today?



Definitions

Incident

- Not defined in legislation
- Any unplanned, unwanted event that causes injury or illness

Dangerous occurrence

- Regulation 9
- Essentially an incident that could have hurt someone but it did not



Investigations

- Effective investigations must be part of an employer's health and safety system
- Lack of incident investigation process can result in poorly organized and misunderstood investigations
- It's important to understand the benefits of a properly organized investigation



Benefits of investigations

- To understand what happened and why (i.e., causes)
- To identify corrective actions that will prevent a re-occurrence
- To determine trends and turn a reactive situation into a proactive opportunity
- To make the workplace healthier and safer



Benefits of worker involvement

- More effective investigations
- Improved credibility
- Improved acceptance of recommendations
- The purpose of OHC investigations is prevention



Role of the OHC

- OHC and representative investigators are expected to:
 - Help find root causes and recommend corrective action
 - Check the employer's health and safety system
 - Not assess blame
- Taking corrective action is the employer's responsibility



Employer's role

Employer responsibilities:

- Effectiveness of investigations
- Correct any problems
- Integrate investigations into health and safety system
- Provide investigation teams with appropriate time, training and resources



Part I

Regulatory requirements



Objective 1

**Regulatory requirements for
investigating incidents and
dangerous occurrences**



Reportable incidents

- OHS regulations require the employer or contractor to report incidents causing serious bodily injury
- OHS regulations require employer, contractor or owner to report any dangerous occurrences

Incident

Incidents causing serious bodily injury

Dangerous occurrences

Requirement

Regulation 8

Regulation 9



Regulation 8, Incidents causing serious bodily injury

The employer or contractor must report every incident as soon as possible to OHS Division that:

- Causes or may cause death
- Requires the worker to be hospitalized for 72 hours or more
 - If unsure about length of hospitalization, inform OHS Division and an officer will discuss final reporting procedures



Regulation 8, Incidents causing serious bodily injury

What to report to OHS Division?

- Name of each injured or deceased worker
- Name of employer or contractor involved
- Date, time and location
- Circumstances
- Apparent injuries
- Contact information of employer or contractor



Regulation 9, Dangerous occurrences

- An employer, contractor or owner must report every dangerous occurrence as soon as possible to OHS Division
- Dangerous occurrences could have hurt someone if conditions or circumstances had been slightly different.
 - The factors (e.g., forces, chemicals, biohazards, etc.) involved in an incident were powerful enough to cause serious harm but no one was injured or became ill



Regulation 9, Dangerous occurrences

What to report to OHS Division?

- Name of employer, contractor or owner involved
- Date, time and location
- Circumstances
- Contact information of employer, contractor or owner



Regulation 9, Dangerous occurrences

- Dangerous occurrences are incidents that generally do not result in serious bodily injury
- Examples listed in regulation 9(1)(a-h)
 - List is not all inclusive – only provides examples
- OHS Division encourages employers to report any incident that causes, or could have caused, serious injury



Examples of dangerous occurrences

- A worker using an inadequately maintained atmosphere-supplying respirator nearly is overcome by poisonous gas
- An overloaded crane becomes a dangerous occurrence if it overturns or fails
- A partially cut tree in a logging area is left standing but falls while the workers are out of the area (may have been struck had they been working there)



Required investigations

- OHS regulations require the employer to investigate certain incidents
- OHS regulations require employer, contractor or owner to investigate dangerous occurrences

Incident

Investigation of certain incidents

Investigation of dangerous occurrences

Requirement

Regulation 29

Regulation 31



Regulation 29, Investigation of certain incidents

An employer shall ensure that every incident that causes or may cause death or will require a worker to be hospitalized for 24 hours or more is investigate as soon as possible by:

- Co-chairs or designates
- Representative and employer
- If there is no OHC or representative, then by employer



Regulation 29, Investigation of certain incidents

To complete investigation, employer, in consultation with OHC or representative, prepares written report that includes:

- Description of incident
- Graphics, photos or other evidence to help determine cause or causes
- Explanation of cause or causes
- Immediate (short-term) corrective action
- Long-term action to prevent a re-occurrence or the reasons for not taking action



Regulation 30, If the incident involves a fatality

- Fatality site must not be disturbed, except to relieve suffering, until an OHO has investigated
- Where an OHO cannot investigate but gives permission, the site may be cleared once:
 - Graphics, photos and evidence showing details is gathered
 - Co-chairs or representative investigated and agree that site may be cleared
- When a site has been disturbed before an investigation completed, it becomes difficult to find out cause or causes and to prevent a re-occurrence



Regulation 31, Investigation of dangerous occurrences

Employer, contractor or owner shall ensure every dangerous occurrence is investigated as soon as reasonable possible by:

- Co-chairs or designates
- OHS representative and employer
- If there is no OHC or representative, then by employer



Regulation 31, Investigation of dangerous occurrences

To complete investigation, employer, contractor or owner, in consultation with OHC or rep, prepares written report that includes:

- Description of dangerous occurrence
- Graphics, photos or other evidence to help determine cause or causes
- Explanation of cause or causes
- Immediate (short-term) corrective action
- Long-term action to prevent a re-occurrence or the reasons for not taking action



Project: Dribbles Plastics



Project: Dribbles Plastics

- Herbert, a young worker with about six weeks experience, has just crushed his left hand in a powerful packaging machine called a dribbler
- You are the OHC and must investigate and prepare report for employer



Incident scenario

What happened

Dribbles Plastics manufactures a variety of plastic products. Herbert, a young worker with about six weeks of experience, has just crushed his left hand in a powerful packaging machine called a dribbler. As the OHC, you must investigate and prepare a report for the employer.

Dribbles are one of the firm's most popular products. Each dribble is wrapped in a dribbler immediately before shipping. During the wrapping process, each dribble enters the machine on a conveyor belt. It is then placed in a plastic package. Two powerful hot steel rollers at the mouth of the machine encase and seal each package in shipping plastic as it exits through the front of the machine. Once they exit the machine, packaged dribbles are put in containers and shipped.

Sometimes dribbles in the dribbler twist and jam the conveyor belts before reaching the packaging rollers. This stalls the machine and production comes to a halt.

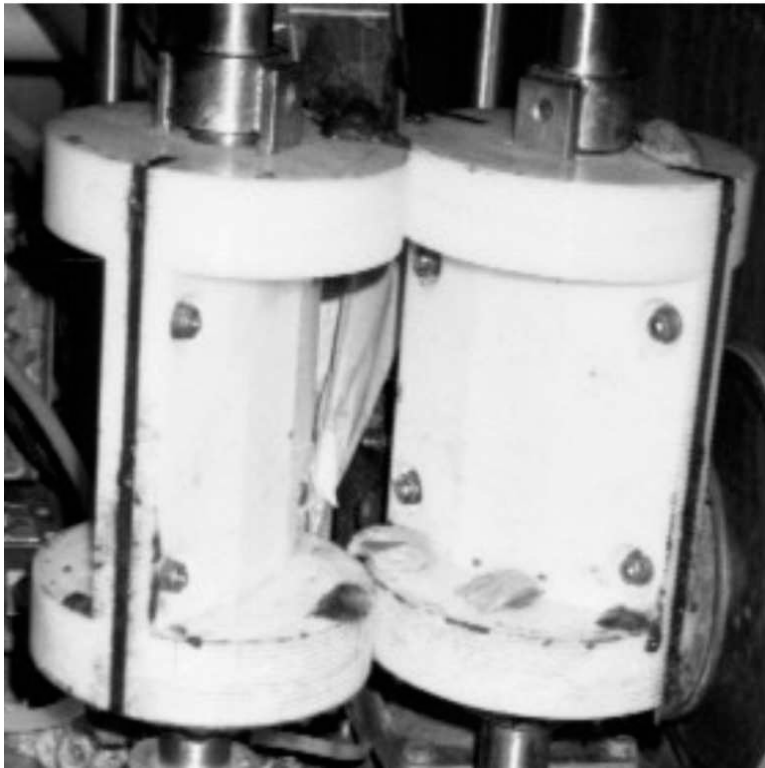
The incident happened during one of these stoppages. Herbert opened the front cover of the dribbler and was trying to free the jam by jogging the machine. Jogging requires Herbert to turn the start/stop switch on and off quickly to move the mechanism enough to free the jam. While jogging the machine with his right hand, Herbert reached between the rollers with his left to straighten the packages as the jogging freed them from the conveyor mechanism. Unfortunately, the dribbler started and the rollers closed on Herbert's hand before the machine could be stopped. A manual mechanism-opening wheel on the machine was used to free Herbert's hand.

Herbert was admitted to hospital and is waiting for reconstructive surgery on his hand.

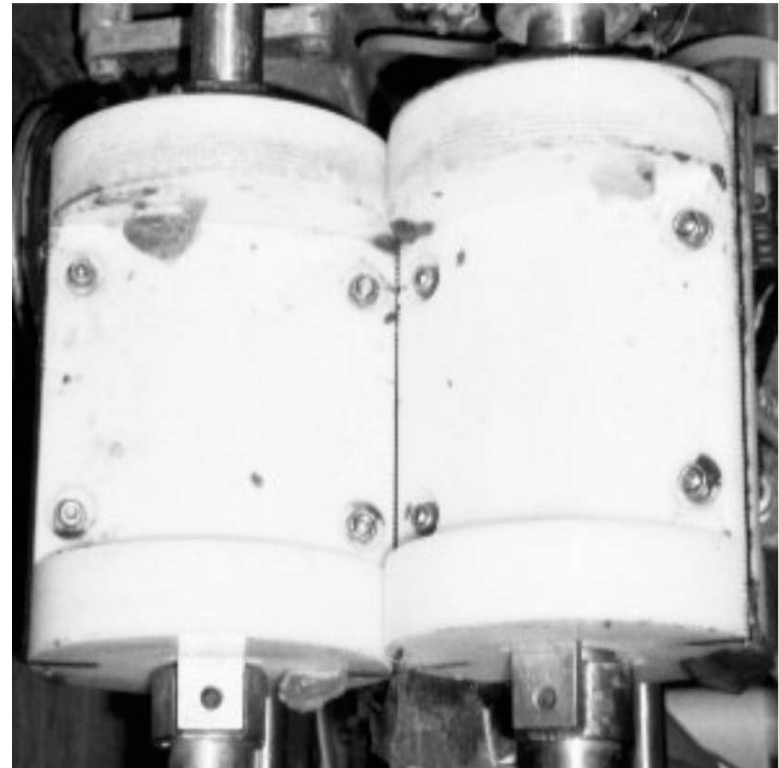


Dribbler mechanism

Dribbler open



Dribbler closed



Project: Dribbles Plastics

Your OHC visits incident site and learns the following:

- The dribbler is very old. It was moved from previous plant and installed by the maintenance and sanitation engineer who saw incident.
- A yellowing, dusty policy hangs on a nearby wall. It states that troubles with the dribbler are to be reported to maintenance. Maintenance is to lockout the dribbler (i.e., cut all power sources and release any remaining energy in the machine) before working on it. Workers state that the policy has not been enforced for some time. The power breaker box is far away from the dribbler. It has no lock on it.
- The front cover is off the dribbler. Warning information on the caution plate is worn off. A worker informs you that a spring-loaded power cut-off switch on the chassis is supposed to pop and kill power to the dribbler if the front cover is raised. The worker states that this button has not worked for some time. She did not report it because “...no one is going to believe me or do anything about it anyway.”



Project: Dribbles Plastics

Observations (continued):

- Workers say that the start/stop switch sometimes won't turn the machine off immediately.
- The cover over the electrical components of the dribbler is missing. The wiring has been “creatively improved” to allow jogging and defeat the emergency stop system's safety switches.
- Workers say that the dribbler malfunctions frequently and that Herbert and other workers were “trying to repair it in a rough, macho fashion” a few days ago.
- The supervisor has extra paperwork to do and is often in his office at the back of the plant when the dribbler is used. The supervisor was in his office doing paperwork at the time of the incident. It took sometime for the supervisor to be notified of the incident and reach the floor.
- No one knew what to do to help Herbert. None of the workers present had a valid first-aid certificate and the first-aid box was empty. No one knew what ambulance service to phone. In the end, the ambulance service contacted was the one that was the farthest away from the factory. This delayed Herbert's transport to hospital. Due to complications resulting from the incident, he was hospitalized for four days.



Project: Instructions

- Use the Dribbles Plastics incident scenario to answer questions regarding legislation requirements
- Answer the questions in your workbook
- Select a spokesperson to present answers to the class



Project: Questions

1. Is this a reportable incident or dangerous occurrence?



Project: Questions

2. If this incident must be reported, what must you send to OHS Division?



Project: Questions

3. Must this incident be investigated? If so, who must investigate?



Project: Questions

4. What must you include in an investigation report requested by an OHO?



What other types of incidents must you investigate?

Regulation 85:

- Exposure to infectious organisms

(1)(d) “infection material or organism” means an infectious material or organism that has been identified in an approved manner as an infectious disease hazard that poses a significantly increased exposure risk to a worker or self-employed person

- Employer investigates and may involve OHC in a manner that respects the confidentiality of exposed person



What other types of incidents must you investigate?

Regulation 311:

- Exposure to substances listed in Table 19 or 20
- Employer investigates in consultation with OHC



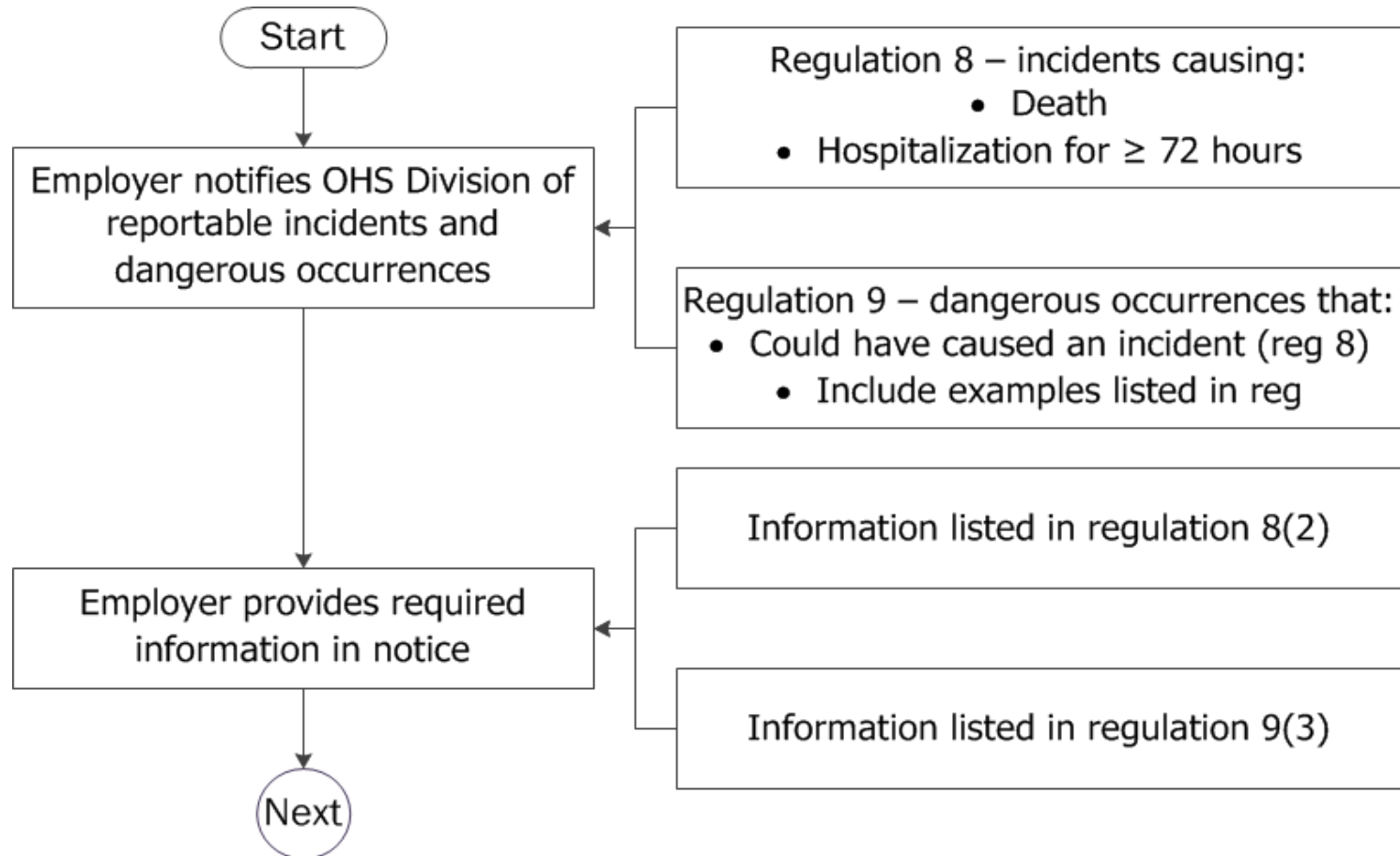
What other types of incidents must you investigate?

Potentially harmful injuries, illnesses and conditions that do not require hospitalization

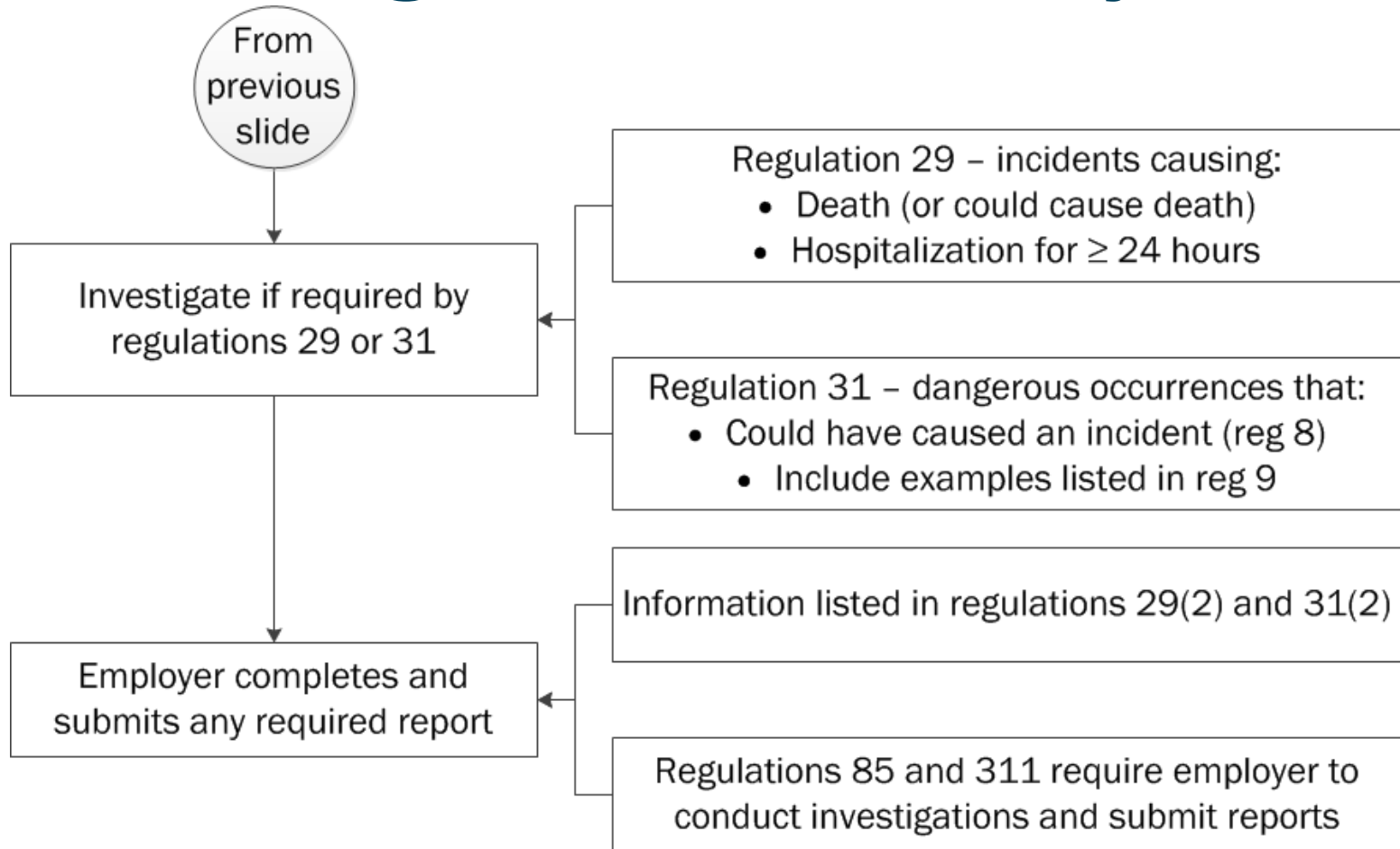
- Employer reports any lost-time injuries to co-chairs or representative



Legislation summary



Legislation summary



Part II

C.A.R.T. investigation techniques



C.A.R.T. steps

1. Collect evidence
2. Analyze evidence
3. Report
 - Write report
4. Take action
 - Employer takes action
 - OHC or representative follows up



Supervisor involvement

Supervisors have vested interest when incidents happen in their area

- They know their workers and what jobs they perform
- They know what questions to ask
- Often part of the first-response group at the scene
- Can benefit from the investigation



How supervisor can help

Right after an incident, the supervisor can:

- Secure scene, summon emergency crews, have injured transported to hospital, etc.
- Report to appropriate authorities (internal and external)
- Take notes and make sketches
- Identify witnesses
- Brief and support OHC investigation team



Objective 2

How to collect evidence for an investigation



Before you collect evidence

Get the big picture and ask questions:

- What was happening at the time of the incident?
- Who was involved and who may have seen what happened?
- What equipment, machinery, tools, chemicals, etc., were involved?
- Did something fail or break?
- Consider factors like training, maintenance, worker experience, etc.



Collecting evidence

Collect evidence from:

- Physical evidence (e.g., debris, parts, photos, etc.)
- Documents (e.g., records, SDSs, etc.)
- Witnesses (interviews)



Physical evidence

- Use physical evidence to gather information about what happened before, during and after the incident
- Use physical evidence to help develop questions for witness interviews



Examples of physical evidence

Evidence

Information it may provide

Objects

- Tools, equipment and materials (including damaged PPE)
 - Hardware, facilities and debris
 - Skid marks, patterns and other properties of items associated with the incident
- What went wrong and why
 - What happened before, during and after the incident

Chemicals

- Hydraulic fluids and liquids
 - Noxious gasses, smoke and fumes
 - Solids (e.g., pellets, dusts, powders, etc.)
 - Containers of chemical substances
- Hydraulic fluids and liquids can tell you about operability of machinery, mobile equipment and vehicles
 - Noxious gasses, smoke and fumes can tell you about hazards in the work area, work practices, adequacy of engineering controls, etc.

Biological substances

- Blood, body fluids, etc.
 - Potentially contaminated food and drink
 - Plants, spores and pollens
 - Insects and other animals
- What caused harm
 - How injury occurred



Specific physical evidence

- Check equipment, tools and machinery for sign of breakage, poor maintenance, etc.
- Check operating controls and safety devices to see if they were working properly
- Check damage and wear patterns, skid marks, direction of debris, etc., for information on what happened during the incident



Physical evidence samples

Samples can indicate:

- How technical failures, malfunctions, etc., happened
- Pre-existing defects
- The presence of chemicals, biological substances, noise, etc.
- Exposure levels



Handling physical evidence

- Use safe procedures
- Identify, collect, label, package and store
- If applicable, do not remove evidence until examined by experts
- Mark locations of evidence you remove



Take photographs or video

- 35mm camera
- Video camera
- Digital camera
- Start with overall area picture, then narrow down to specific incident location
- Keep log of photos and locations
- For spills, skid marks, etc., use a reference (like a pen or ruler) when taking photos



Create sketches, scale drawings and maps

- Use to show scene immediately after incident
- Use to get a bird's-eye-view, locate debris position, etc.
- Make as soon as possible after incident
- Note locations, dimensions, directions, etc., of debris, equipment, etc.



Collect documentary evidence

- Standards and technical information
- Inspection and investigation reports
- Records (e.g., training, maintenance, repair logs, etc.)
- Research
- Employer's health and safety system



Documentary evidence

Use it to help:

- Determine worker training
- Understand job procedures and practices
- Identify witnesses and the questions to ask
- Check witness statements
- Monitor employer's health and safety system



Conduct research

Research is a tool to learn more about the physical and documentary evidence:

- Benchmarking
 - What are other organizations doing?
 - Have they had similar experiences?
 - Have they made changes to the way they do things?
- Technical research
 - Internet
 - Journals



Dribbles Plastics incident scenario: Collect evidence



Instructions

Use the Dribbles Plastics incident scenario and record the physical and documentary evidence

- Include information on what each piece of evidence may provide
- Record your answers in workbook



Questions and answers

Evidence

Information provided



Questions and answers

Evidence

Information provided



Collect evidence by interviewing witnesses

- Interview within first 24 hours, if possible
- Keep witnesses from talking with each other
- Have a plan and objectives for each interview



Plan the interview

- Identify who to interview and what information the interview may provide
- Use physical and documentary evidence to help prepare questions
- Interview in an appropriate location
- Minimize interruptions



Plan the interview

1. Interview those who were involved in the incident, saw it or were first on the scene
 2. Interview those who know what was happening before the incident
 3. Interview others like a trainer, technical experts, facility staff, etc.
- Conduct follow-up interviews as required



Conduct the interview

- Each interview should be private
- Treat everyone with respect
- Create an informal environment
- Reassure each witness (they might be nervous)
- Don't rush, but keep the interview on track



Conduct the interview

- Get their version
- Expect contradictions between witnesses
- Take notes and record critical information
- If you use written statements, review each person's transcript with them before they sign it



Questioning techniques

- Ask questions to gain knowledge and details
- Ask questions to clarify an observation from the scene
- Ask open questions (i.e., not yes/no answers)
- Ask clarifying questions (i.e., closed questions with a yes/no answer) to narrow down a detail
- Pause and give the person time to answer
 - Don't interrupt
- Only use drawings, photos or visits to the site to jog memory



Dribbles Plastics incident scenario: Interview witnesses



Instructions

Use the Dribbles Plastics incident scenario to conduct interviews

- Select worker and employer co-chairs to interview witnesses
- Others will be the injured worker, witnesses, supervisor and employer (each person/role will be provided instructions)
- When your group has completed the interviews, assess the information gathered



Instructions

Before interviews begin, develop questions to ask witnesses:

- Use question in workbook as starting point
- What information do you want to get from each witness?
- Use the physical and documentary evidence to create questions
- Create additional questions as you see necessary
- Deter who will take statements and notes



Interview witnesses

1. Interview Herbert
2. Interview maintenance and sanitation engineer
3. Interview supervisor
4. Interview Delbert



Interview results

What did you learn from Herbert?



Interview results

What was the maintenance and sanitation engineer's role?



Interview results

What was the supervisor's position?



Interview results

What is Delbert's OHS program like?



Objective 3

How to analyze evidence for an investigation



Analyze evidence

- After interviews, examine each statement and what it reveals about incident
- Analyze physical and documentary evidence
 - Correlate with interviews
- Consider what substandard actions and/or conditions were factors



Analyze incident factors

1. Go through each event before, during and immediately after the incident
2. Ask why each happened
3. Evaluate role of every factor:
 - People (supervision, training and orientation)
 - Material (substances, tools, equipment, etc.)
 - Environment (workplace conditions)
 - Work process (workflow design)
 - System (policies, plans and procedures)



Analyze evidence

Link together the evidence and other factors to identify:

- Direct cause
- Indirect cause
- Root cause(s)
 - Often health and safety system management problems



Identify direct cause

- Direct cause usually happens immediately before incident
- Actions that describe a direct cause
 - Struck by
 - Fall to lower level
 - Caught in, on or between
 - Contact with, exposure to, etc.
- Often involves an unsafe act or substandard condition



Identify indirect causes

These substandard acts, procedures and conditions usually set the stage for the incident

- Lack of training
- Departures from safe work practices
- Not following information on SDSs
- Using inadequate or defective tools, equipment or materials
- Inadequate guards or barriers



Identify root cause(s)

- Root causes often explain why substandard acts and conditions exist
 - Lack of knowledge – no training program
 - Guards off machinery – there is no repair or maintenance program
 - Worker not following safe operating procedures – a lack of supervision is putting workers at risk
- Health and safety system management problems are often root causes



Dribbles Plastics incident scenario: Analyze evidence



Instructions

Use the physical and documentary evidence and the interview results to analyse the incident causes

- Answer the questions in the workbook
- Determine the direct, indirect and root causes for the Dribbles Plastics incident
- Discuss answers with class



Questions and answers

1. What was the direct cause?



Questions and answers

2. What were the indirect causes?



Questions and answers

3. What were the root causes?



Questions and answers

4. Could an effective OHC have improved workplace safety?



Objective 4

How to develop a workplace investigation report



What information is required in an investigation report?

- Regulations 8, 9, 29 and 31
- Required information:
 - Name of injured worker(s) and their injuries
 - Contact information
 - Description of incident
 - Graphics, photos and other evidence



What information is required in an investigation report?

- Explain what happened and why
- Recommend corrective action:

Direct cause: Ensuring all workplace hazards are identified

Indirect causes: Ensuring workers are trained in the safe operating procedures for their job

Root causes: Reviewing the employer's health and safety system to ensure programs are in place to identify hazards and that workers receive orientation and training before they perform their jobs



Investigation report

The investigation report must include:

- Short-term and long-term corrective action/solutions
- Who will do what by when
- Resources required
- Who will follow up



OHC investigation and final recommendations

- Identify what factors led to the incident
- Identify potential solutions to correct deficiencies
- Select practical choices
- Present recommendations to employer and discuss what actions to implement
- Follow up



Dribbles Plastics incident scenario: Develop investigation report



Instructions

Use the incident causes (direct, indirect and root)

- Answer the questions in the workbook
- Determine short-term and long-term recommendations
- Discuss answers with class



Questions and answers

1. What short-term recommendations will control the direct and indirect causes?



Questions and answers

2. What long-term recommendations must the employer take to prevent the occurrence of a similar incident?



Objective 5

**Take action: The employer's
responsibility**



Take action

It is the employer's duty to:

- Take immediate action to protect workers
- Take long-term actions to correct root causes
- Comply with regulations
- Provide OHC with written report



Take action

- Employer reviews investigation report
- Employer reviews OHC or representative recommendations
- Employer decides what action to take
- OHC or representative provides input and monitors effectiveness of employer's corrective action



Regulation 28(2)

On written notice by the committee or the representative of an unsafe condition or a contravention of the Act or any regulations made pursuant to the Act, the employer, contractor or owner shall:

- (a) take immediate steps to protect the health and safety of any worker who may be at risk until the unsafe condition is corrected or the contravention is remedied;
- (b) as soon as possible, take suitable actions to correct the unsafe condition or remedy the contravention; and
- (c) inform the committee or the representative in writing of:
 - (i) the actions that the employer, contractor or owner has taken or will take pursuant to clause (b); or
 - (ii) if the employer, contractor or owner has not taken any actions pursuant to clause (b), the employer's, contractor's or owner's reasons for not taking action.



Summary

- Regulatory requirements for investigating workplace incidents and dangerous occurrences
- Collect evidence for an investigation
- Analyze evidence for an investigation
- Develop a workplace investigation report
- Take action following a workplace investigation



Important websites

- saskatchewan.ca
- worksafesask.ca
- ccohs.ca
- Visit saskatchewan.ca and worksafe.ca for publication to help resolve issues



Questions?

- Complete evaluation
- Review Investigation Guide at meetings

