Decision-Making and Emergency Responses

Objectives

- Understand the decision-making process
- Apply a model for decision-making to emergency responses
- Describe the impact of an emergency environment on decision-making
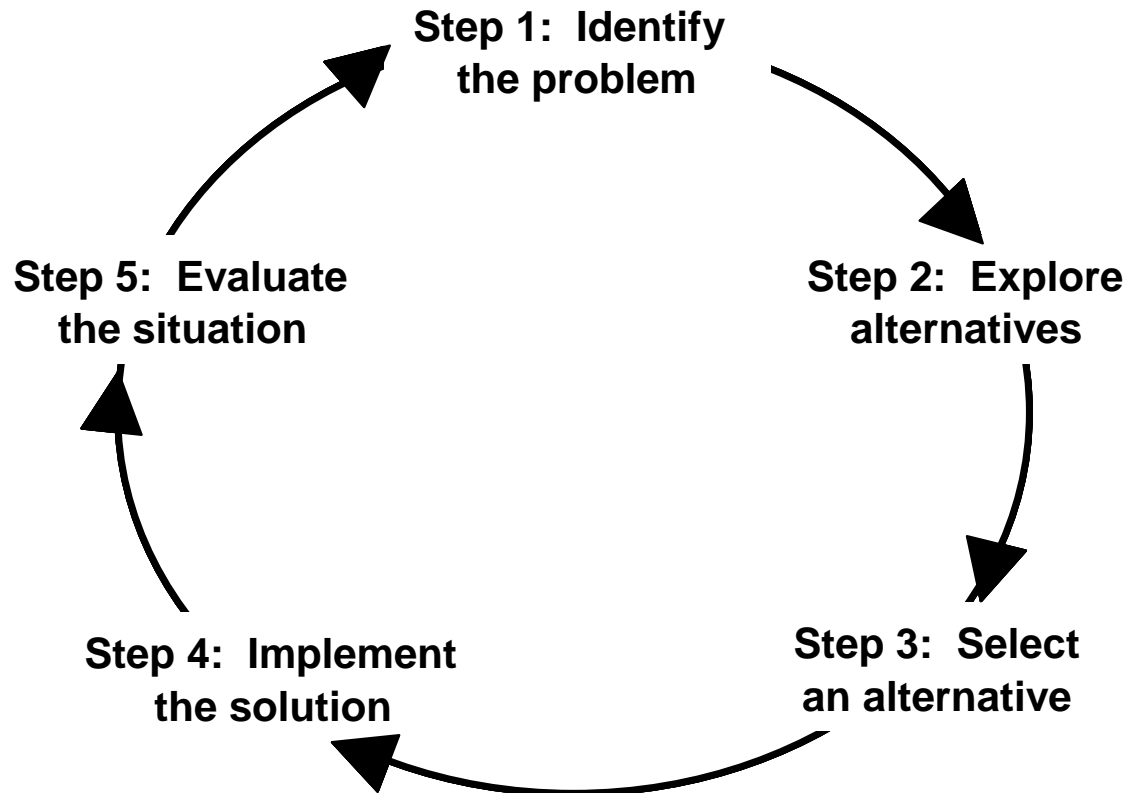
Basics of Decision-Making

Definitions

- Problem-solving
  - Set of activities designed to analyze a situation systematically and generate, implement, and evaluate solutions

- Decision-making
  - A mechanism for making choices at each step of the problem-solving process

Decision-making is part of problem-solving and occurs at every step of the problem-solving process.

Problem-Solving Model

Step 1: Identify the problem

Step 2: Explore alternatives

Step 3: Select an alternative

Step 4: Implement the solution

Step 5: Evaluate the situation

Step 1: Identify the Problem

- Problem: A situation or condition that is considered undesirable that will exist in the future

- Problem vs Solution
  - Not having a mine rescue team vs not having an effective emergency response process

- Assess the problem
  - What is happening or not happening?
  - Who is involved?
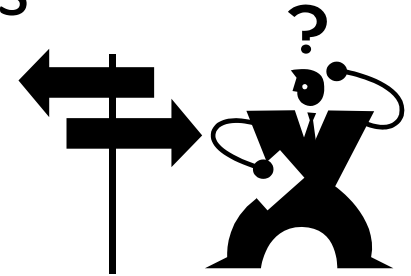 - What are the potential consequences?

Step 2: Explore Alternatives

- Involves two tasks:
  - Develop alternatives
  - Evaluate alternatives

Developing & Evaluating Alternatives

- Processes to develop alternatives
  - Brainstorming
  - Surveys
  - Discussion groups
- Evaluate alternatives
- Identify contingencies – what could go wrong with each alternative

Case Study 1 – Develop alternatives

Step 3: Select Alternative

- Alternative selected should have the most advantages and the fewest disadvantages

- Consider how to implement alternative – do a "reality check"

- Outside factors that need to be considered when selecting alternative
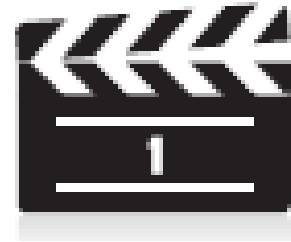 - Political, safety, financial, environmental, ethical

Case Study 1 – Select alternative

Step 4: Implement the Solution

- Develop an action plan

- Determine objectives

- Identify needed resources

- Build a plan

- Implement the plan

Case Study 1 - Implementing plan

Step 5: Evaluate the Solution

- Monitoring progress...
  - Has the situation changed?
  - Are more resources required?
  - Is a different alternative solution required?

Problem-Solving is <u>not</u> complete unless the solution is evaluated and results are fed back into the process
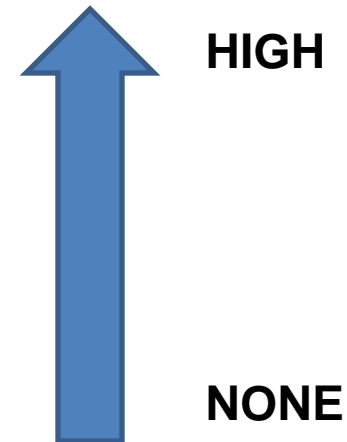
Approaches to Decision-Making

Approaches to Decision-Making

- Individual

- Individual with consultation

- Group

- Delegation

HIGH

NONE

Leader retains ultimate responsibility for decision.

Selecting Decision-Making Approach

- Amount of time
- Expertise of decision-maker / group
- Is the decision complex with many solutions
- Does the group share organizational goals
- Is commitment to the decision by others critical to success of the decision
- Will decision impact a few or many other groups/organizations

Activity – Selecting Approach

Successful Group Decision-Making

- Avoid "Groupthink"
  - Occurs when members of group let their need to agree with other members interfere with their ability to think critically about the decision
- Conditions leading to groupthink:
  - Overestimation of the group's ability & power
  - A "we" vs "they" attitude
  - Pressure for conformity

Groupthink and Emergencies

- Groupthink more likely to occur during emergencies
  - Time pressure forces quick decisions
  - Emergency response personnel have a high degree of cohesion.

- To prevent Groupthink
  - Encourage dissenting opinions
  - Discuss the need to remain open to other alternatives
  - Evaluate decision-making patterns for previous emergencies and take corrective actions

Consensus

- Group members actively support the decision of the group, even though it might not be their personal choice

- Consensus is not 100% agreement

- Tips for achieving consensus
  - Avoid win-lose techniques
  - Look for alternatives that are second best
  - Do not encourage harmony as an objective

Effective Decision-Maker

Definition

- Makes decisions with competence and confidence
- Most decisions are correct

Attributes

- Knowledge
- Initiative
- Advice-seeking
- Comprehensiveness
- Currency
- Flexibility
- Good judgment
- Calculated risk-taking
- Self-knowledge

Decision-Making and Emergencies

Main Factors Affecting Decision-Making during Emergencies

- Stress

- Time pressures

- Consequences of wrong decision – life or death

- Sleep deprivation and fatigue

Other Factors Affecting Decision-Making During Emergencies

- Possible political pressures
- High or low blood sugar levels as a result of erratic eating patterns
- Caffeine

Decision-Makers Under Stress

- Experience conflict with other key players

- Perceive selectively because of sensory overload (miss important information)

- Experience perception distortion and poor judgment

- Be less tolerant of ambiguity (make premature decisions)

- Experience decreased ability to handle difficult tasks and work productively

- Experience greater tendency toward aggression and escape behaviors.

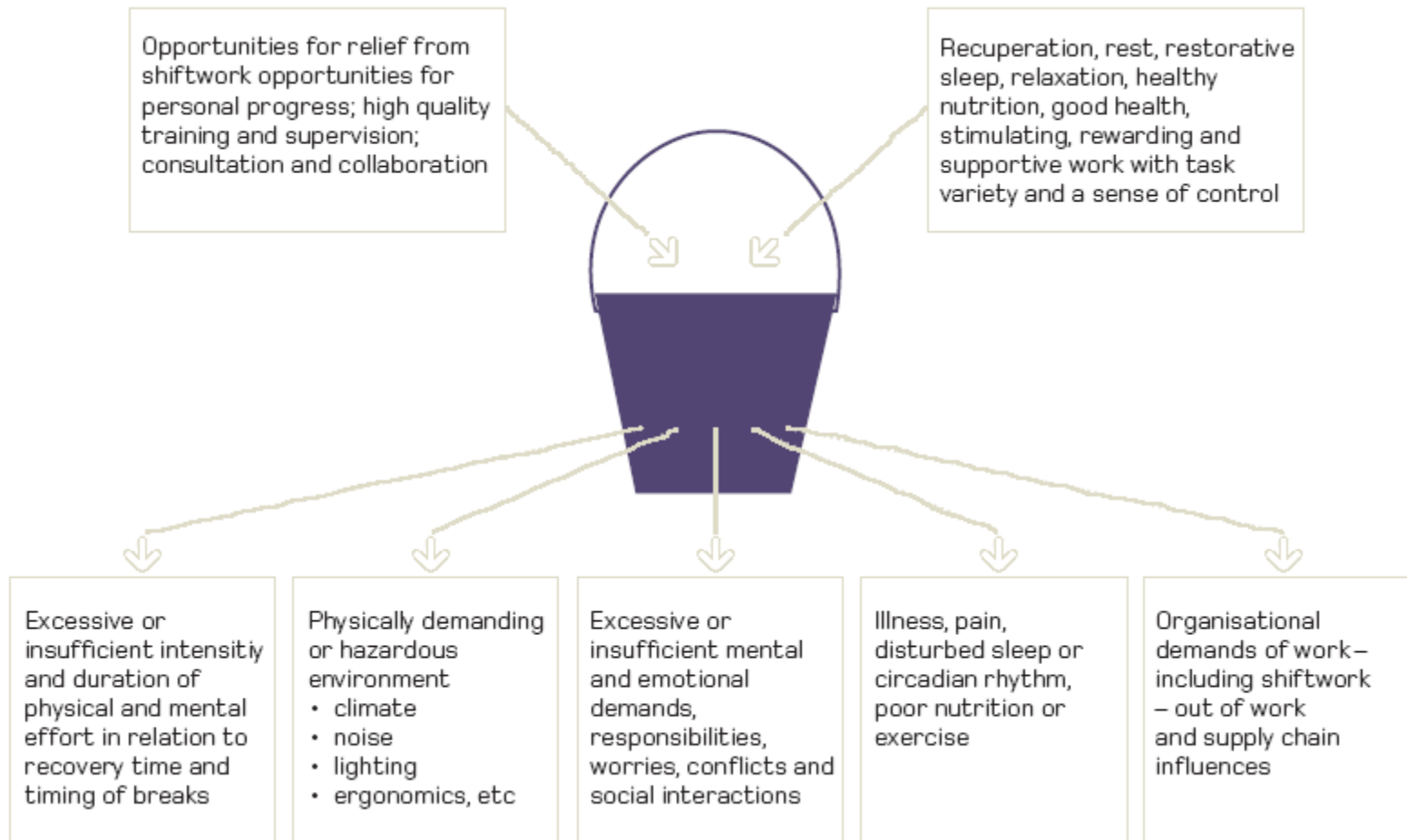# Decision-Makers Under Stress May:

- Consider only immediate survival goals, sacrificing long-range considerations

- Choose a risky alternative

- Get tunnel vision

- Succumb to "groupthink"

How to Reduce Stress

- Be Systematic - follow problem-solving model

- Delegate some tasks – rely on experts

- Attend training
  - Stressors are no longer stressful

- Take breaks / sleep / eat nutritious foods

Bucket Model of Fatigue

Opportunities for relief from shiftwork opportunities for personal progress; high quality training and supervision; consultation and collaboration

Recuperation, rest, restorative sleep, relaxation, healthy nutrition, good health, stimulating, rewarding and supportive work with task variety and a sense of control

Excessive or insufficient intensitiy and duration of physical and mental effort in relation to recovery time and timing of breaks

Physically demanding or hazardous environment
- climate
- noise
- lighting
- ergonomics, etc

Excessive or insufficient mental and emotional demands, responsibilities, worries, conflicts and social interactions

Illness, pain, disturbed sleep or circadian rhythm, poor nutrition or exercise

Organisational demands of work – including shiftwork – out of work and supply chain influences

Source: New Zealand Dept. of Labour

Fatigue and Performance

- 24 hours of sustained wakefulness, performance decreased to a level equivalent to a blood-alcohol level of .10 percent
  - Details are missed
  - Accuracy is impaired
  - Performance is slowed

Decision Environments

Ideal Environment

- All possible information is known
- All information is accurate

Emergency Environment

- Lack of information
- Conflicting information
- Information may not be accurate
- Uncertainty

Hindsight is <u>better</u> than Foresight in making decisions!

Delaying Decisions

Benefits

- Decision environment will be larger – have more information

- New alternatives may be identified

- Preferences may change

Risks

- Decision maker may become overwhelmed

- Some alternatives may no longer be available

- Conditions may change

Is Too Much Information Problematic?

- More time is needed to process additional information

- Information overload may occur (may forget pertinent information)

- Select only information that supports a preconceived solution

- Mental fatigue may occur

- Decision fatigue may occur

Case Study 2

Discussion

References

1. Edmund, Norman. *Decision Making: A guide to Creative Decision Making and Critical Thinking. (http://www.decisionmaking.org/decisionmakingbooklet.pdf)*

2. FEMA. *Decision Making and Problem Solving*. IS 241, 2002. (http://training.fema.gov/EMIWeb/IS/is241.asp)

3. Harris, Robert. *Introduction to Decision Making, 2008.* (http://www.virtualsalt.com/crebook5.htm

4. New Zealand Department of Labour. *Managing shift work to minimise workplace fatigue - A guide for employers*, November 2007. (http://www.osh.dol.govt.nz/publications/booklets/shiftwork-fatigue2007/page1.shtml)

5. Williamson, AM and Feyer, AM. Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication. Occup Environ Med 57:649-655, 2000.