Training Program for Prevention of Occupational Diseases and Incidents of Firefighters in Venezuela

GENERAL OBJECTIVE

To do a literature review to present a model of Safety Educational Program for Firefighters to avoid occupational diseases and incidents in this specific type of work, contributing to healthy development of this professional people in Venezuela.

SPECIFIC OBJECTIVES

To include:
- Documentation of Risk Prevention theoretic information, (with the OSH information in the first period of education)
- Practical sessions into the Education Program

To develop:
- A positive impact in life quality with extension for family and community.
- A contribution to integral education of Metropolitan Firefighters in Caracas, Venezuela.
- Decrease of incidents, morbidity and mortality of firefighters in Venezuela.

TRAINING SESSIONS IN OH&S

- Justification and Background
- Legal References to the program
- Occupational Risks for firefighters
- Type of lesions - Major injuries
- Prevention Measures
- Detailed Training Program

JUSTIFICATION AND BACKGROUND

- Extremely dangerous activity.
- Generating several lesions and diseases
- NFPA/NIOSH >> +10 years studying programs to avoid occupational exposure in this type of occupation.
- OII: 1.2 millions of deaths
- Venezuela, 2006: 20,843 incident reports.

- Firefighters lesions are generating chronic disability.
- Need to develop training programs to avoid/diminish occupational incidents and diseases.
- Decrease of costs associated to occupational incidents.
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JUSTIFICATION AND BACKGROUND

FIREFIGHTERS DEATHS BY ACTIVITY, ANNUAL % 2000 - 2010

<table>
<thead>
<tr>
<th>Type of duty</th>
<th>Nº of Deaths (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Operations</td>
<td>27</td>
</tr>
<tr>
<td>Responding / Returning</td>
<td>23</td>
</tr>
<tr>
<td>Others, on work time</td>
<td>24</td>
</tr>
<tr>
<td>Training</td>
<td>14</td>
</tr>
<tr>
<td>Emergencies without fire</td>
<td>6</td>
</tr>
<tr>
<td>After fire</td>
<td>21</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>145</strong></td>
</tr>
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</table>

JUSTIFICATION AND BACKGROUND

NATURE LESION / DEATH, ANNUAL % 2000 - 2010

<table>
<thead>
<tr>
<th>LESION NATURE</th>
<th>Nº of Deaths (n)</th>
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<tbody>
<tr>
<td>Heart attack</td>
<td>55</td>
</tr>
<tr>
<td>Internal Trauma</td>
<td>32</td>
</tr>
<tr>
<td>Asphyxiation</td>
<td>8</td>
</tr>
<tr>
<td>Stroke</td>
<td>6</td>
</tr>
<tr>
<td>Burns</td>
<td>3</td>
</tr>
<tr>
<td>Runover</td>
<td>2</td>
</tr>
<tr>
<td>Electrocution</td>
<td>2</td>
</tr>
<tr>
<td>Excessive heat</td>
<td>1</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>115</strong></td>
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</table>

LEGAL REFERENCES TO THE PROGRAM

LOPCYMAT
(ORGANIC LAW OF PREVENTION, WORK CONDITIONS Y ENVIRONMENT, Venezuela)
Articles No 53 and 56
Workers need to receive:
-Information about the risks previously to initiate the work, hazards and prevention measures to avoid them.
-Information about specific physical, chemical, biological, meteorological, psychosocial risks and ergonomics

OCCUPATIONAL RISKS FOR FIREFIGHTERS

- Combustion Products and Chemical Exposition
- Injuries and lesions
- Non ergonomic conditions and postures
- Biological Hazards
- Physical Hazards
- Reproductive Hazards
- Stress and Shift work

TYPE OF LESIONS - MAJOR INJURIES

- Internal and External
  - Short time effect
  - Long time effect

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PREVENTION MEASURES

Basic Preventive Measures:
- Safe Operation Procedures Training and Health & Safety information

PPE:
- Use and Maintenance Training
- Adjustment testing
- Posture hygiene with simulated interventions
- Tools adaptation and use

Unspecific risk factors knowledge:
- Stress and fatigue, uncertainty, event conditions
- Work process evaluations
- Diseases transmission prevention and protection (*Blood Pathogens*)

TRAINING PROGRAM

Essential Requirements:
- Management and Governmental Support
- Policy implementation and written work procedures
- Orientation about PPE correct use
- Continue feedback about the system

DETAILED TRAINING PROGRAM

1. Introduction – Basics
2. Justification (safety Officer)
3. Background and legislation
4. The man and work environment
5. Occupational incidents and diseases
6. Firefighters Risks
7. Absorption, Inhalation and Ingestion effects
8. Heat effects

DETAILED TRAINING PROGRAM

9. Infections / Diseases Transmission
10. Work Ergonomics and Lifting
11. Psychosocial effects of firefighting work
12. Special groups of duty
13. Exercise and nutrition: protection factors
14. Personal Protection Equipment
15. Occupational Medical Evaluation Program
16. Wellness and recreation program

Academic Curriculum

<table>
<thead>
<tr>
<th>Name at the Academic Curriculum</th>
<th>Trimester</th>
<th>Required</th>
<th>Theoretical Hours</th>
<th>Hours on Practice</th>
<th>Total of Hours</th>
<th>Academic Credits</th>
</tr>
</thead>
<tbody>
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<td>Occupational Health and Safety I</td>
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<td>NO</td>
<td>02</td>
<td>02</td>
<td>02</td>
<td>02</td>
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<tr>
<td>Occupational Health and Safety II</td>
<td>02</td>
<td>Yes, OH&amp;S</td>
<td>02/every two weeks</td>
<td>02</td>
<td>04</td>
<td>02</td>
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<tr>
<td>Occupational Health and Safety III</td>
<td>03</td>
<td>Yes, OH&amp;S</td>
<td>01/week</td>
<td>02</td>
<td>06</td>
<td>02</td>
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<tr>
<td>Occupational Health and Safety IV</td>
<td>04</td>
<td>Yes, OH&amp;S</td>
<td>01/week</td>
<td>02</td>
<td>06</td>
<td>02</td>
</tr>
</tbody>
</table>
METHODS

Learning process through:
- Theoretical Exposure with students participation
- Interaction mechanism to reinforce learning
- Students Presentation: Research about the theme
- Special Guests for specific themes
- Discussion Forum

Evaluation and follow up:
- Continue system (Theoretical and practical)
- Refresh in every module
- Feedback from students, every period