Health risk Assessment

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What is a HRA

- Also known as HIRA (Hazard Identification and Risk Assessment)
- Systematic search for hazards
- Identification of health hazards
- Assessment of risk to human health
- Qualitative assessment
- Quantitative assessment
- Current or future health hazards
- Requires sound science as well as professional judgement
Why do we need HRA`s

- Human behaviour
- Identify hazards
- Legislation
Healthy safe work environment

- Constitution
  - Section 24
- OHS Act
  - Section 8(2)(d)

- Regulations for example:
  - Hazardous Biological Agents
  - Hazardous Chemical Substances
What is the foundation of compliance

- Identification of a potential problem
- Precautionary
- Foresee
- Action to prevent
- Action
Hazardous biological agents and HRA

- Definition of a biological agent
- Consultation with Health and Safety representative or committee
- Every 2 years
- Inform H&S representatives in writing
- Keep a record of the assessment
- Conducted on the basis of all available information
- Review the assessment
Risk assessment process (Guild et al. 2001)

Decide on objective
- Legal compliance
- Changes to process
- Changes to actions

Define process
- Baseline
- Issue based
- Continuous

Define scope
- Process based
- Hazard based
- Activity/occupation based
- Geographic/Area based
Risk assessment process (cont)

Identify hazards
- Chemical
- Physical
- Biological
- Ergonomic
- Psychological

Biological/Epidemiological verification

Assess exposure
Risk assessment process (cont)

Rate Risk

Decide on risk acceptability

Unacceptable

Implement corrective action

Acceptable

Monitor
## Categorisation of hazards (Guild et al. 2001)

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical</td>
<td>Chemicals that are toxic or irritating to the body</td>
<td>Toxic dusts, fumes, vapours, mists, poisons, asphyxiants, …</td>
</tr>
<tr>
<td>Physical (forms of energy)</td>
<td>Physical agents that can cause tissue trauma or other damage</td>
<td>Noise, ionising and non-ionising radiation, vibration, chafing, cutting, bruising…</td>
</tr>
<tr>
<td>Biological</td>
<td>Infectious biological agents such as bacteria, viruses, fungal infections &amp; parasites</td>
<td>TB, Cholera, Hepatitis A, B, C, D etc, fungal infections, Ebola…</td>
</tr>
<tr>
<td>Ergonomic</td>
<td>The interface between the human characteristics, behavioural &amp; biological and the working environment</td>
<td>Musculo skeletal stress, fatigue, tactile feedback, posture…</td>
</tr>
<tr>
<td>Psychological</td>
<td>Factors that create stress, emotional strain or interpersonal problems</td>
<td>Boredom, shift work, work pace, stressful environments eg trauma unit</td>
</tr>
</tbody>
</table>
### HRA Record

**Company:** IALCH  
**Department:** Paediatric ICU  
**Date:** 12/11/2015

**Occupational category:** Professional Nurse

<table>
<thead>
<tr>
<th>Nature of work, process and location</th>
<th>Health hazard, hazardous substance or agent and in what form.</th>
<th>Route of entry</th>
<th>Health effects</th>
<th>Existing control measures</th>
<th>C</th>
<th>F</th>
<th>P</th>
<th>RS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drawing blood</td>
<td>Needle stick injury Blood splash</td>
<td>Skin Eyes</td>
<td>HIV AIDS Hepatitis B ...</td>
<td>Training Universal precautions Vaccine...</td>
<td>25</td>
<td>6</td>
<td>3</td>
<td>450</td>
</tr>
</tbody>
</table>

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### Scoring the hazard exposure

**Table for variables C (consequence), F (frequency) and P (probability).**

<table>
<thead>
<tr>
<th>Consequences</th>
<th>Frequency</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating 50</td>
<td>Classification: Multiple fatalities</td>
<td>Rating 10 Classification: Hazard event occurs: Continuously (8 hours per day)</td>
</tr>
<tr>
<td>Rating 25</td>
<td>Classification: Fatality</td>
<td>Rating 6 Classification: Frequently (4 Hours per day)</td>
</tr>
<tr>
<td>Rating 15</td>
<td>Classification: Permanent disability, extremely serious injury</td>
<td>Rating 3 Classification: Occasionally (2 hours per day)</td>
</tr>
<tr>
<td>Rating 5</td>
<td>Classification: Reversible disability</td>
<td>Rating 2 Classification: Unusually (1 or 2 times a week)</td>
</tr>
<tr>
<td>Rating 1</td>
<td>Classification: Minor health effect or ailment</td>
<td>Rating 1 Classification: Rarely (1 or 2 times a month)</td>
</tr>
<tr>
<td>Rating 0.5</td>
<td>Classification: Very rarely (exposures less than once per month)</td>
<td>Rating 0.1 Classification:</td>
</tr>
</tbody>
</table>

**Risk Score = Consequence x Frequency x Probability**
Actions from the risk score may be read from the table below.

<table>
<thead>
<tr>
<th>RISK SCORE</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 to 5000 (High)</td>
<td>Immediate correction required. Environmental monitoring should be conducted.</td>
</tr>
<tr>
<td>200 to 499 (Medium)</td>
<td>Requires urgent attention as soon as possible. Environmental monitoring required.</td>
</tr>
<tr>
<td>0 to 199 (Low)</td>
<td>Hazard should be eliminated, but the situation is not an emergency. No monitoring required.</td>
</tr>
</tbody>
</table>
Monitoring

Why do we monitor?
- Compliance with legislation
- Assessment of potential health risk
- Evaluation of control measures and auditing their ongoing performance
- Collection of data for epidemiological purposes
- Resolution of complaints and industrial disputes

Workplace exposure monitoring (occupational hygienist)
- Personal monitoring
- Static monitoring

Biological monitoring


Thank you
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