TRAINING IN THE ILO CLASSIFICATION OF RADIOGRAPHS FOR THE PNEUMOCONIOSIS IN BRAZIL

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Attualità in tema di Pneumoconiosi, Siena
24/09/2010
Background

- Brazilian labour legislation (December 1994) demands that:
  
  ✓ **Workers exposed to fibrogenic dusts** should have an admissional, demissional and yearly chest X-ray
  
  ✓ **Workers exposed to non-fibrogenic dusts** should have an admissional, demissional and every 3 years until 15 years of tenure and every 2 years afterwards
  
  ✓ **Periodic chest X-rays should be interpreted according to the ILO Classification**
<table>
<thead>
<tr>
<th>Economic Branch</th>
<th>1985</th>
<th>%</th>
<th>2007</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>125.66</td>
<td>62,45</td>
<td>125.103</td>
<td>52,28</td>
</tr>
<tr>
<td>Non-metallic minerals *¹</td>
<td>238.844</td>
<td>57,07</td>
<td>272.083</td>
<td>55,6</td>
</tr>
<tr>
<td>Construction</td>
<td>981.402</td>
<td>52,86</td>
<td>2.076.047</td>
<td>65,05</td>
</tr>
<tr>
<td>Metallurgy</td>
<td>219.552</td>
<td>28,64</td>
<td>270.847</td>
<td>27,37</td>
</tr>
<tr>
<td>Rubber, tabac and leather *²</td>
<td>20.862</td>
<td>4,26</td>
<td>9.733</td>
<td>2,09</td>
</tr>
<tr>
<td>Agriculture</td>
<td>21.194</td>
<td>3,49</td>
<td>131.967</td>
<td>4,65</td>
</tr>
<tr>
<td>Services *³</td>
<td>36.009</td>
<td>1,45</td>
<td>308.036</td>
<td>4,67</td>
</tr>
<tr>
<td>Other</td>
<td>10.283</td>
<td>0,05</td>
<td>19.288</td>
<td>0,05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.653.806</strong></td>
<td><strong>6,28</strong></td>
<td><strong>3.200.108</strong></td>
<td><strong>5,92</strong></td>
</tr>
</tbody>
</table>

*¹ Ceramics and glass; *² Precious and Semi Precious stone works; *³ Maintenance

Background

- There are no directives as to the skills of readers
- FUNDACENTRO, alone or in collaboration with other institutions, is conducting ILO Radiological Classification training seminars since 1985
Background

• Because of the following reasons:
  ✓ Observing that some of the ILO training participants had limited experience in thoracic radiology
  ✓ The State of São Paulo public prosecutors asked the Ministry of Labour and Employment to define the profile of physicians able to interpret periodical chest X-rays
  ✓ The Regional Labour Ministry Office of the State of Minas Gerais started to demand that each periodical chest X-ray should be read by two qualified readers
  ✓ Unacceptable practices of X-Ray readings being detected

A questionnaire to training participants was sent in 2007 and a Working Group on the ILO Radiological Classification was constituted in 2008
Objectives

1. To report on the profile of physicians who attended training courses and to evaluate their opinions about the training and the routine application of the classification

2. To report the results of a Working Group on the ILO Radiological Classification of the Pneumoconiosis
Questionnaire

• ID information of all physicians who attended an ILO Radiological Classification between 1994 and 2007 was kept in an electronic databank
• Elaboration of a 4-block questionnaire asking for full identification, information on medical background, information on the training and use of the ILO classification and, opinions about the training seminars
• Questionnaires were sent by post and/or by e-mail to all physicians registered in the databank
Questionnaire results

• 20/356 (5.6%) of the registers did not contain contact data (address, phone number or e-mail)
• Only 112/336 (33.3%) questionnaires sent were completed and returned. 16/336 (4.8%) physicians were not found (returned address or e-mail)
• Brazilian states with larger number of trained physicians were: Minas Gerais, São Paulo, Paraná and Rio de Janeiro
Questionnaire results

• How often do they apply the classification?
✓ Minas Gerais has more trained physicians. They use the classification more often (61.3% use in a weekly basis). Additionally, there is a higher percentage of physicians classifying more than 600 radiographs per year (36.7%)
# Questionnaire results

<table>
<thead>
<tr>
<th>Seminar duration</th>
<th>Sufficient (%)</th>
<th>Insufficient (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiologists</td>
<td>78,8</td>
<td>11,2</td>
</tr>
<tr>
<td>Occup. Medicine</td>
<td>60,5</td>
<td>39,5</td>
</tr>
<tr>
<td>Pneumologists</td>
<td>59,3</td>
<td>40,7</td>
</tr>
<tr>
<td>Clínicians</td>
<td>54,5</td>
<td>45,5</td>
</tr>
</tbody>
</table>
Questionnaire results

• Referred problems
  ✓ The quality of the chest films to be analysed is poor
  ✓ There are few available experienced readers to discuss cases
  ✓ There is a poor comparability of the analysed chest films with the ILO Standard Set
  ✓ Feeling insecure in applying the classification
Results from a radiological survey of a sample of active ceramic workers from 7 industries, NPES-B, 2010

<table>
<thead>
<tr>
<th>Ceramic</th>
<th>No of workers</th>
<th>Sample</th>
<th>X-Rays analysed</th>
<th>Q 4 (%) EA</th>
<th>Q 4 (%) EC</th>
<th>1/0 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALMEIDA</td>
<td>195</td>
<td>46</td>
<td>12</td>
<td>03 (25)</td>
<td>03 (25)</td>
<td>-</td>
</tr>
<tr>
<td>BUSCHINELLI</td>
<td>234</td>
<td>36</td>
<td>30</td>
<td>06 (20,0)</td>
<td>06 (20,0)</td>
<td>1</td>
</tr>
<tr>
<td>CEDASA</td>
<td>548</td>
<td>113</td>
<td>113</td>
<td>21 (18,6)</td>
<td>28 (24,8)</td>
<td>1</td>
</tr>
<tr>
<td>INCOPISOS</td>
<td>308</td>
<td>61</td>
<td>61</td>
<td>15 (24,6)</td>
<td>11 (18,0)</td>
<td>1</td>
</tr>
<tr>
<td>FORMIGRES</td>
<td>458</td>
<td>159</td>
<td>40</td>
<td>16 (40)</td>
<td>21 (52,5)</td>
<td>1</td>
</tr>
<tr>
<td>VILLAGRES</td>
<td>287</td>
<td>65</td>
<td>55</td>
<td>09 (16,6)</td>
<td>14 (25,4)</td>
<td>3</td>
</tr>
<tr>
<td>MAJOPAR</td>
<td>418</td>
<td>158</td>
<td>158</td>
<td>82 (51,9)</td>
<td>77 (48,7)</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2030</td>
<td>638</td>
<td>469</td>
<td>152 (32,4)</td>
<td>160 (34,1)</td>
<td>7</td>
</tr>
</tbody>
</table>
Conclusions

• ILO training seminars are sought mainly by radiologists, occupational medicine physicians, pneumologists and clinicians

• Selection of participants for the training seminars should be improved

• Opinions regarding duration and sufficiency of the training seminars depend on the medical background of physicians
Conclusions

• There is an urgent need of improving chest X-ray quality in the periodical evaluation of workers exposed to mineral dusts

• There is a need of creating efficient and effective channels of communication for physicians interested in the ILO classification, as well as means of continued/refresh training in the subject
Working Group on the ILO Classification

- Representatives from:
  Ministry of Labour and Employment (1)
  Ministry of Health (1)
  Ministry of Welfare and Social Security (1)
  Brazilian Society of Pneumology and Tisiology (1)
  Brazilian College of Radiology (1)
  Brazilian Association of Occupational Health Physicians (1)
  Experts in the ILO Classification (NIOSH B Readers) (2)
  FUNDACENTRO (1)

- Secretary and coordination: FUNDACENTRO
Working Group on the ILO Classification

• Points to be addressed
  ✓ Equipments and radiologic technique
  ✓ Contents and agenda for training courses on the ILO Classification
  ✓ Establish minimum requirements for training participants
  ✓ Implementation of a proficiency examination for certification of readers
Working Group on the ILO Classification

• Published texts (printed and electronic versions):
  ✓ Minimum requirements for equipments and techniques for obtention of adequate chest X-rays for the use of the ILO Classification
  ✓ Radiological Interpretation of the Pneumoconiosis: Using the ILO Radiological Classification

Working Group on the ILO Classification

• Publishing of a list of physicians who participated in training courses from 1994 onwards (Total: 486 physicians from 21 States of the Federation)

Working Group on the ILO Classification

• Minimum requirements for training participants

Medical specialties:
   1. Radiology
   2. Pneumology
   3. Occupational Health
   4. Internal Medicine (or one of the internal medicine specialties)

• Board certified

• Occupational Health and Internal Medicine physicians (excluding pneumologists) should pass a previous test on thoracic radiology
Working Group on the ILO Classification

- Pilot proficiency examination (August 2009)
  ✓ An advanced training course followed by the AIR-Pneumo examination was attended by 22 experienced readers
  ✓ 20/22 had a passing grade
  ✓ A list of certified readers is available at:
Future Developments in Brazil

- Training courses jointly organized by the 3 medical societies
- Publishing of a Ministry of Labour norm addressing specifications for adequate radiology equipments and technique and chest X-ray reading procedures
- Definition of a proficiency examination
Contact:
eduardo@fundacentro.gov.br

Grazie, Thanks, Grato!!