Improvement In Queensland Outdoor Workers Sun Protective Practices and UV exposures

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Overview

- Health effects of UVR
- Queensland’s UVR Levels
- Outdoor Worker UVR Protection
- Occupational Exposures to Solar UVR
- Studies of UVR exposures in Queensland
- What has changed?
Health Effects of UVR

• In Australia in 2010 there were 12,500 melanomas (37 per 100,000)*
• Mortality ~ 1450 deaths in 2010*
• Incidence ~1M treatments (NMSC) and cost ~ $700M 2015#
• In 2004 there were 403,900 cataracts in people over 55, with 6100 resulting in blindness
• 462,200 Cataract operations in 2004,
• demand increased 7.3% since 1993^
Health Effects of UVR (continued)

Queensland

– highest rate of skin cancer in the world
– incidence rate double other Australian states

Occupational exposures to ultraviolet radiation

– 200 melanomas*
– 34,000 NMSC*
– Solar worker compensation claims doubled from 2009-2012 (average >$50,000) #

#Queensland Parliament Report No. 28 May 2013 At 4.6.2 Solar Claims page 91
Personal UV Protection measures

• seek shade - minimise time in the sun between 10.00 am and 3.00 pm
• slip on clothing
• slop on minimum SPF 30+ sunscreen
• slap on a hat
• slide on sunglasses.
Outdoor Worker UVR Protection

- Provide shade or ensure shade is available
- Reorganise work schedules
  - outdoor tasks are done before 10.00 am and after 3.00 pm
- Rotating tasks that involve direct sun exposure
- Provide training and education on sun hazards and protection – sun protection policy
- Provide and ensure workers
  - use the appropriate personal protective equipment (PPE)
Occupational Situation prior to 2002

• QLD Sunshine Coast (26ºS) in 1992#
  – PE Teachers
  – Ground staff
  – Lifeguards

• In 2001, 107 construction sites throughout Qld

# Gies et al 1995
## Occupational Exposures to Solar UVR

<table>
<thead>
<tr>
<th>Number</th>
<th>UV Exposure in SEDs</th>
<th>Fraction of Ambient (%)</th>
<th>Ambient UVR (SEDs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
<td></td>
</tr>
<tr>
<td><strong>1995 study 8hr day</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifesavers</td>
<td>7</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>PE Teachers</td>
<td>16</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Grounds Staff</td>
<td>12</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td><strong>2001 study (approx. half an 8 hour day)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic Controllers</td>
<td>4</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Roofers</td>
<td>32</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Labourers</td>
<td>83</td>
<td>0.5</td>
<td>26</td>
</tr>
<tr>
<td>Carpenters</td>
<td>29</td>
<td>0.5</td>
<td>17</td>
</tr>
<tr>
<td>Bricklayers</td>
<td>21</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

Note - 2 SEDS sufficient to cause sunburn in a fair skinned person.
2001 Study Results

• Key observations:
  – 49 of 493 workers received less than the Exposure Limit of RHS12
  – Almost half of the workers > 4 times the Exposure Limit
  – 75% were skin types 1, 2 or 3
  – PPE was ad hoc with no planned approach to controlling risk
  – Even when a control was available it was not always used
Study Conclusions

• UVR exposures would have been higher - Summer
• The results suggest that solar UVR exposures
  – not taken seriously as a hazard in workplaces
• That there is a significant risk to the health of outdoor workers in QLD from occupational UVR exposure
What Has Changed?

- *Code of Practice* on Protection of Workers from *UVR* in Sunlight 2004 (deleted in 2012)
- Strong campaigning by Cancer Councils
- ARPANSA RPS12 (2006)
- Qld Health promotes Sun Safe Queensland Workplaces 2006, and republished a sun safety bulletin in 2010
What Has Changed? (continued)

- Harmonised Work Health and Safety Laws
  - onus on Employers to protect all workers from hazards, including the sun

- Guide to Outdoor exposure to Solar Ultraviolet Radiation (2013)

- WorkSafe Qld Sun Safety Audits

- Sun protective PPE
  - tax deductible

Credit: Queensland Health 2010
Follow Up Study (continued)

• 3 organisations:
  – Qld Government (QTMR)
    • Qld Transport and Main Roads
    • 10-12 workers each at 4 sites (road projects)
  – Medium Size Company (Company B)
    • Promotes children’s physical activities and sports (child care centres, public parks)
    • 20-30 outdoor workers, unsupervised
  – Small Size Company (Company C)
    • 3-4 construction workers
Follow-up Study

- ~ 50 outdoor workers

- Due to loss of dosimeters/non-wearing
  - 40 subjects

- 1 to 3 weeks of data from many of the subjects
  - 321 days measurable UV exposures
  - 18 and 21 days for 2 subjects
# Summary of Potential UVR Exposures

<table>
<thead>
<tr>
<th>Measured Total UVR Exposures (SEDs)</th>
<th>&lt;2</th>
<th>2-10</th>
<th>10-30</th>
<th>&gt; 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTMR</td>
<td>13</td>
<td>7</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Company B*</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Company C</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

* QLD Winter
## Sun Protection Provided vs Used

<table>
<thead>
<tr>
<th></th>
<th>QTMR</th>
<th>Company B</th>
<th>Company C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunscreen</td>
<td>35/27</td>
<td>0/5</td>
<td>0/0</td>
</tr>
<tr>
<td>Hats</td>
<td>35/35</td>
<td>16/13</td>
<td>0/0</td>
</tr>
<tr>
<td>Sun protective Clothing</td>
<td>35/35</td>
<td>16/10</td>
<td>0/0</td>
</tr>
<tr>
<td>Sunglasses</td>
<td>35/35</td>
<td>0/3</td>
<td>0/0</td>
</tr>
<tr>
<td>Shade</td>
<td>35/21</td>
<td>0*/3</td>
<td>0/0</td>
</tr>
<tr>
<td>Reorganise work</td>
<td>8 / 7</td>
<td>0#/3</td>
<td>0/0</td>
</tr>
<tr>
<td>Sun Protection Policy Seen</td>
<td>35</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Reported Sunburns/total</td>
<td>0/36</td>
<td>0/16</td>
<td>3/4</td>
</tr>
</tbody>
</table>

*Parks with natural shade used  #Many sessions after 4pm
Observations

• Qld Government
  – sun protective policies
  – provide PPE and shade (enforced)

• Company B
  – sun protection policy
  – some PPE but not all
  – did not ensure workers use them

• Company C
  – do not have policies in place
  – did not provide PPE
Summary

• The smaller the organisation
  – less resources tasked for sun-protection
• Visible PPE
  – easier to enforce than sunscreen
• Multiple agencies are working on sun protection education:
  – Commonwealth, State and Cancer Councils
• State and Federal Governments
  – provide incentives for sun-protection i.e. tax deductible PPE
  – Support and funding for education and research
• Legislation
  – requires workers be protected from hazards includes solar UVR
Conclusions

• The tools for reducing skin cancers in outdoor workers are available
  – protective clothing and equipment prevents sunburns
  – Education and tax deductions

• Multi-Agency approach is working
  – Departments of Health (Qld, Commonwealth)
  – Cancer Councils (Australia, SunSmart, QLD)
  – WorkSafe Queensland

• Support for small to medium companies
  – implement and enforce sun protection practices
  – education

Image courtesy of Queensland Health 2010
THANK YOU

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