

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

RESPIRATORY HEALTH EFFECTS OF OCCUPATIONAL EXPOSURE TO BUSHFIRE SMOKE

- Emergency Services Research Group, UWA
 - Annemarie De Vos
 - Brian Devine
 - Prof. Phil Weinstein
 - Dr. Angus Cook
- Asthma and Allergy Research Institute, UWA
 - Prof. Phil Thompson
- Fire & Emergency Services Authority of Western Australia (FESA)
 - Murray Horbury
 - Dave Wright

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Presentation Outline

- Background
- Aims
- Design and methods
- State of the play
- Outlook
- Questions

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry


Background

- Fire fighters in Western Australia are increasingly concerned about the health effects of bushfire smoke exposure
- Limited data available about the respiratory health effects of occupational exposure to bushfire smoke
- Insufficient information available about the efficacy of the commonly provided protective filters

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Aims




- To determine whether wearing protective filters affects the acute respiratory health of Western Australian bush fire fighters under controlled conditions (Phase 1)
- To validate findings with respect to use of protective filters in the field (Phase 2)

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Study Design



- Randomised controlled trial
- Random allocation to one of three types of study filters:
 - Mask 1 (sham filter with no actual filtering capacity)
 - Mask 2 (Particulate filter)
 - Mask 3 (Particulate + Organic Vapour filter)
- Participants will be blinded with respect to the type of filter

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Methodology

- 15 minute controlled exposure to bushfire smoke from representative native WA vegetation




bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Methodology (cont'd)



bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Methodology (cont'd)

- Before (baseline) and after exposure measurements of respiratory health effects:
 - Respiratory symptom questionnaire
 - Spirometry measurement (FEV1)
 - Pulse Oximetry
- Monitoring
 - Air sampling inside the masks

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

State of the Play


- Study protocol and questionnaire completed and reviewed
- Ethics approval has been obtained
- Information sessions have been given
- Smoke chamber and incinerator construction completed and pre-tested

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Outlook

- Pilot Study planned for mid October 2004
- Controlled exposure trials planned for November 2004 (Phase 1)
- Preliminary results expected beginning 2005
- Field validation planned for September-December 2005 (Phase 2)



bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Acknowledgements

- Fire & Emergency Services Authority of Western Australia
 - Dave Wright
 - Kevin Foreman
- CSIRO Melbourne
 - Steve Brown
- Chemistry Centre of Western Australia
 - Steve Wilkinson
 - Dave Fleming
 - John Genovese

bushfire CRC

THE UNIVERSITY OF WESTERN AUSTRALIA FACULTY OF Medicine and Dentistry

Thank You



bushfire CRC