What are the main occupational respiratory disease problems today?

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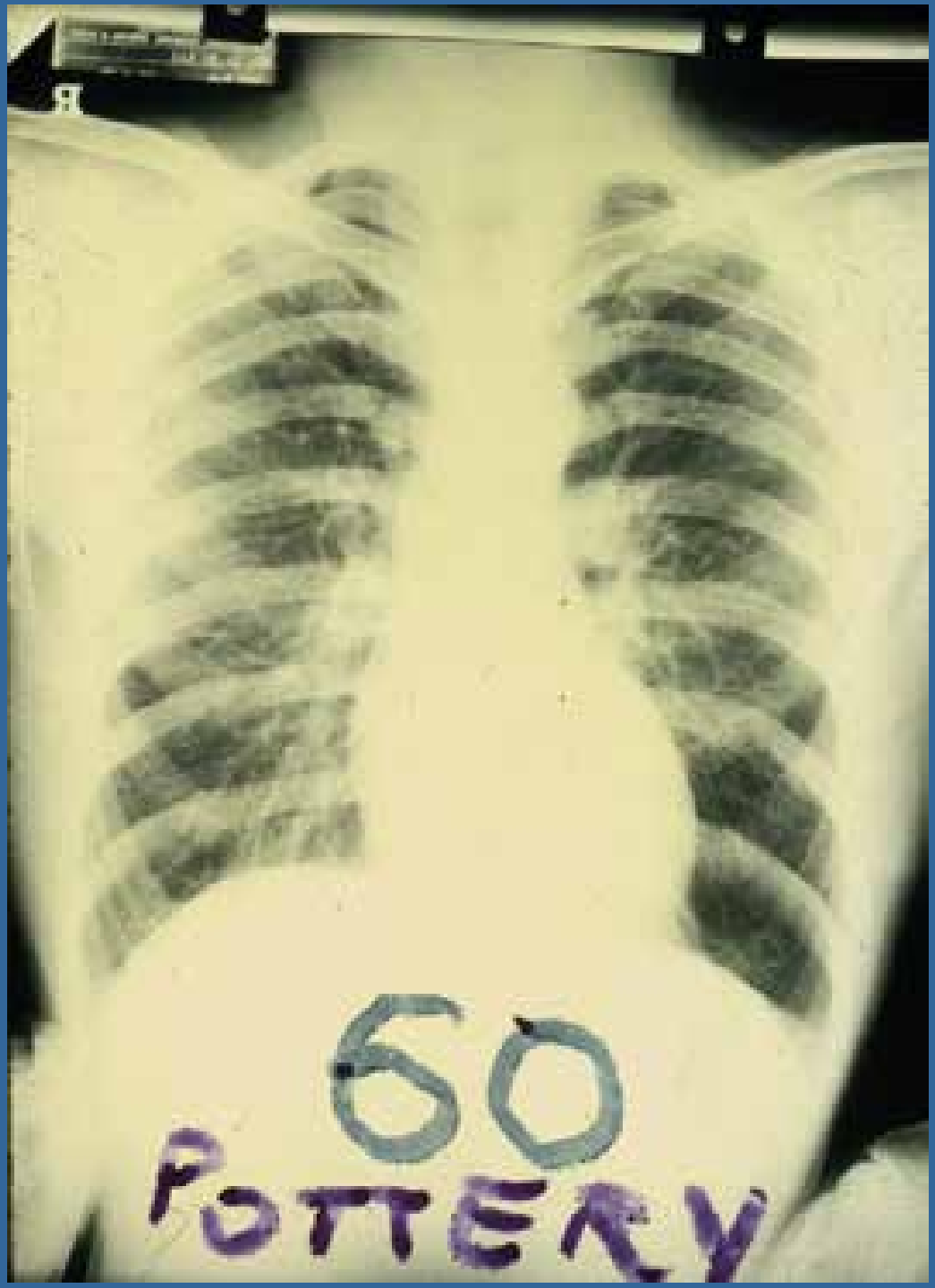
What are Occupational Lung Diseases?

- Traditionally main focus on chronic parenchymal diseases of long latency, pneumoconioses, eg Asbestosis, Silicosis - date back to 1700s
- Respiratory cancers became more prominent in the 1900s, eg Mesothelioma, Lung Cancer
- More recently of increasing interest are diseases of shorter latency and/or those affecting airways, eg Occupational Asthma, Inhalational Injury, Alveolitis, infections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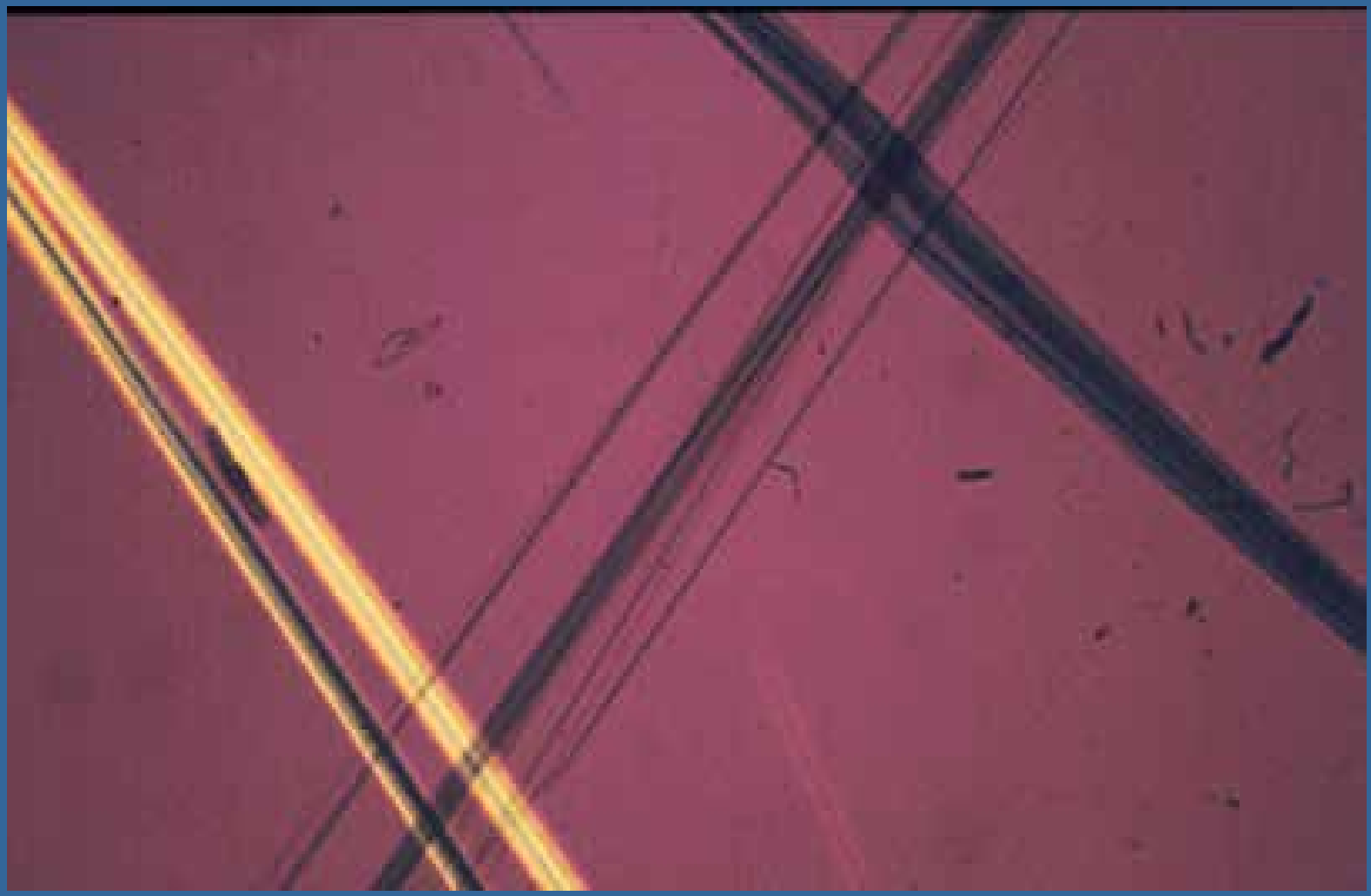
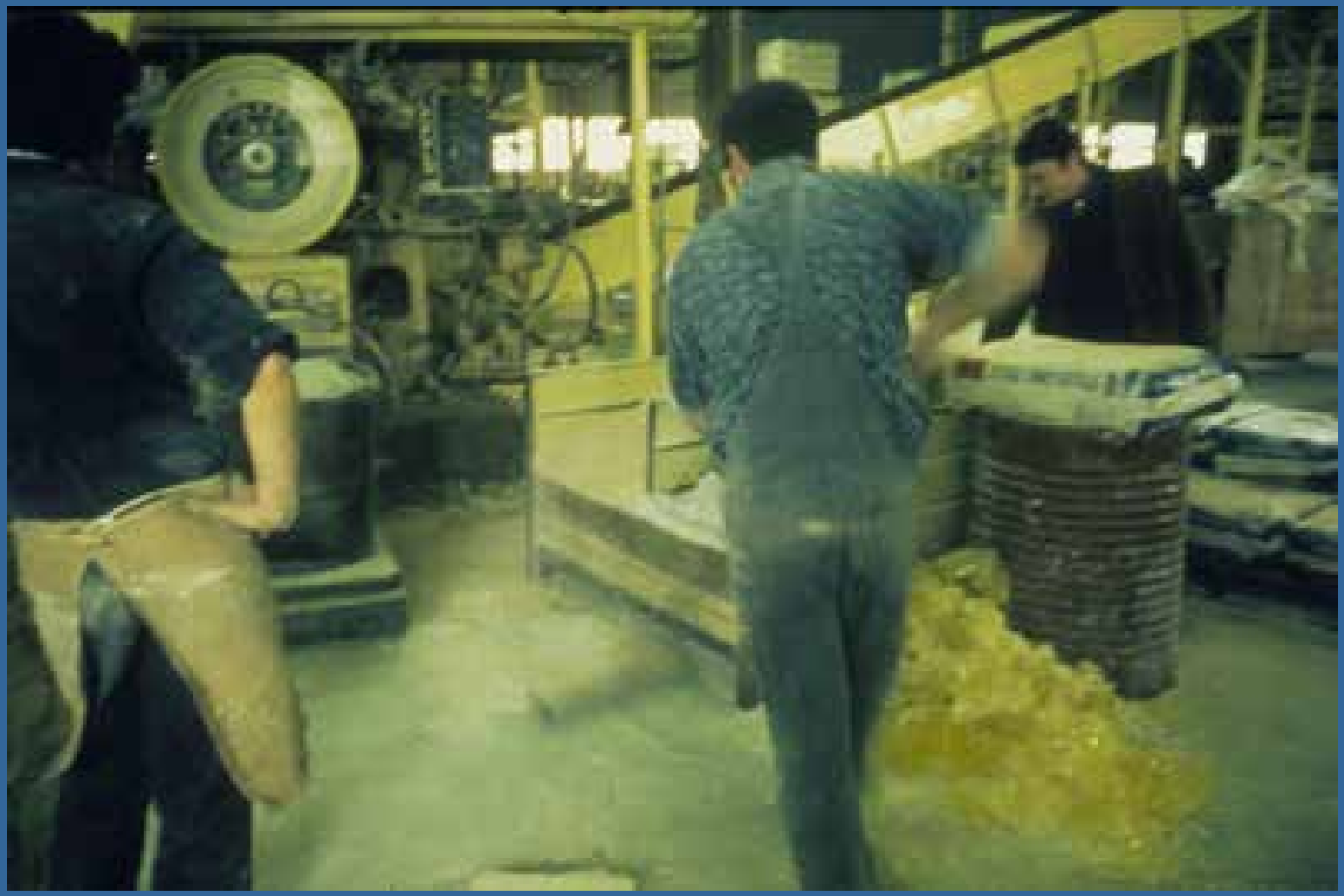
POTTERY



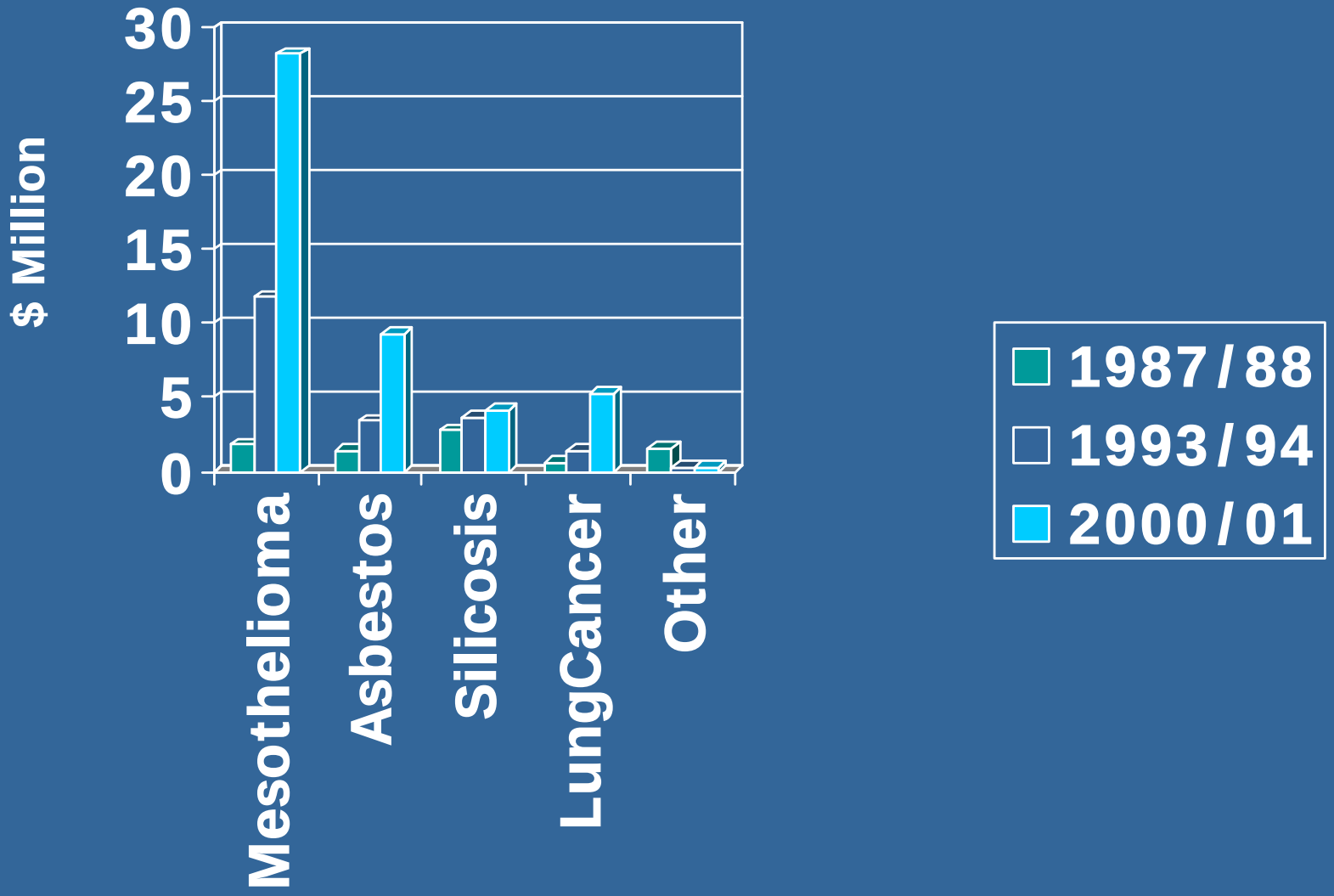


What are the main occupational respiratory disease problems today?

It depends upon how you define ‘problem’!

If it is based on how much we are paying out…

Payouts Dust Diseases Board NSW



If ‘problem’ is measured in terms of what we are researching……

Respiratory disease papers in *Occupational & Environmental Medicine* 1981, 1991 & 2001

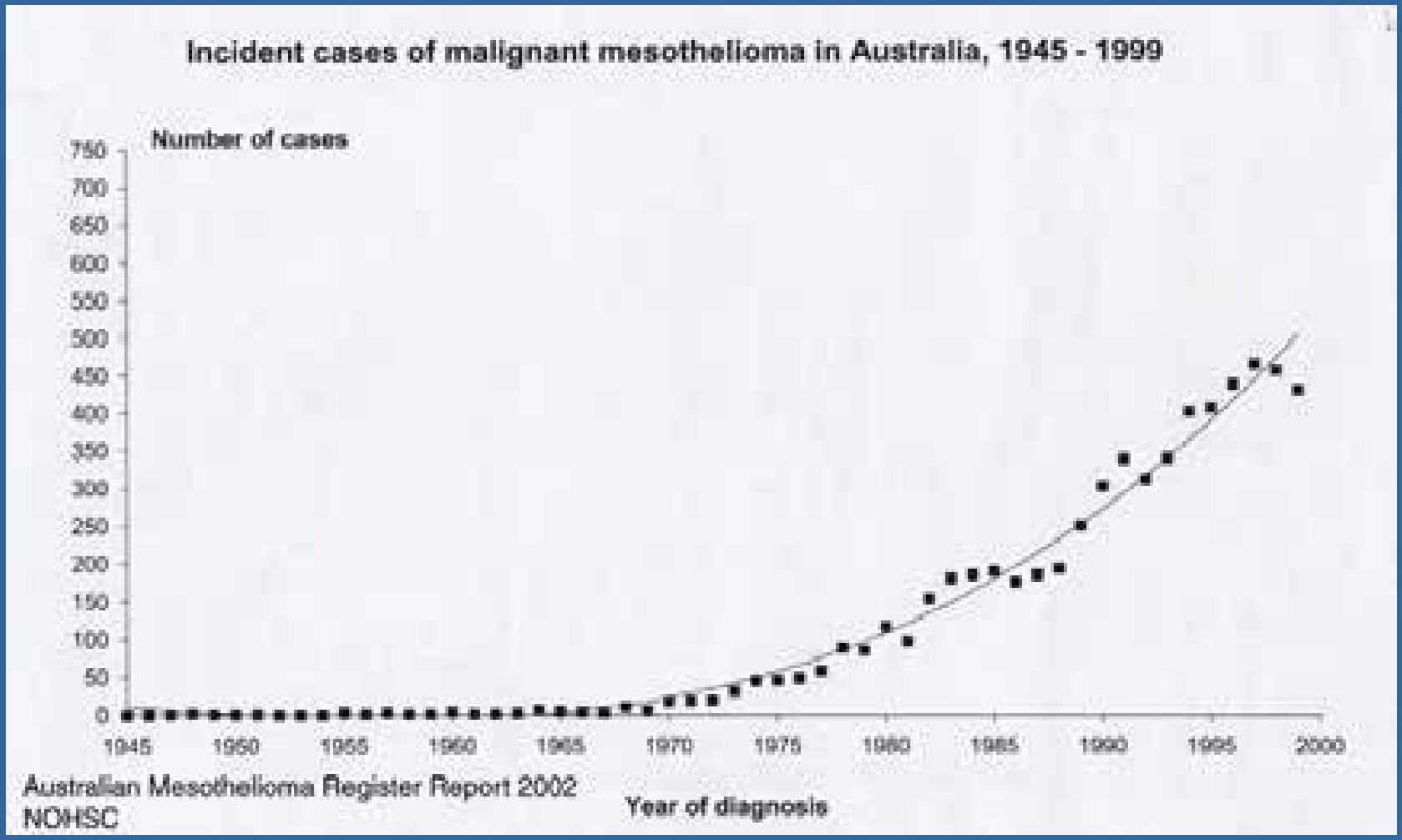
Year	Total Papers Each Year	Respiratory Disease Papers Each Year	Respiratory Papers Each Year (% of annual total)
1981	61	15	25%
1991	70	51	73%
2001	123	25	20%

Respiratory disease papers, by disease category in *Occupational & Environmental Medicine*

(percentage of respiratory papers that year)

Year	Fibrosis	Cancer	Obstructive Diseases	Other Respiratory Diseases
1981	47%	6%	33%	13%
1991	24%	27%	41%	8%
2001	32%	12%	48%	8%

If ‘problem’ is measured in terms of what we are measuring……


Incident cases of malignant mesothelioma in Australia, 1945 - 1999
Number of cases
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
Year of diagnosis
Australian Mesothelioma Register Report 2002
NOHSC

Surveillance Schemes

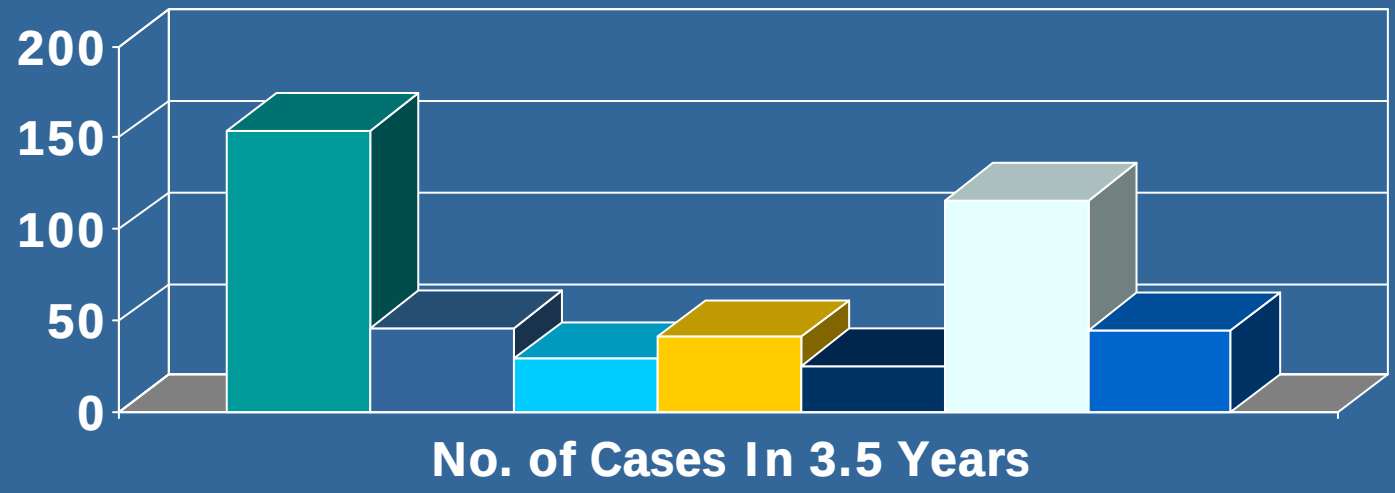
- Workers comp data underestimate incidence
- Surveillance schemes rely on doctor notifications
- SWORD in the UK – 12 years of data
- Finnish & USA schemes
- PROPULSE in Quebec, Canada
- SORDSA in South Africa
- SABRE in Australia – established 3 years ago
- Acknowledged limitations in such schemes

SWORD Scheme

- 12 years of data
- 25,674 new cases - 25% asthma
- Gender and temp differences in asthma incidence:
  - Male 1989/91 = 22 Male 1995/97 = 44
  - Female 89/91 = 12 Female 95/97 = 24
- Incidence 2-3 times higher in midlands
- Despite better surveillance info, incidence rates have plateaued and not fallen

McDonald et al *Occup Environ Med* 2000; 57: 823-829

Male SABRE Notifications Victoria 1989-1991



Incidence Occ Asthma For Different Countries

Scheme	Rate/Million Workers/Year
SABRE	31
SWORD	37
SHIELD	43
PROPULSE	79 (males only)
FINLAND	153

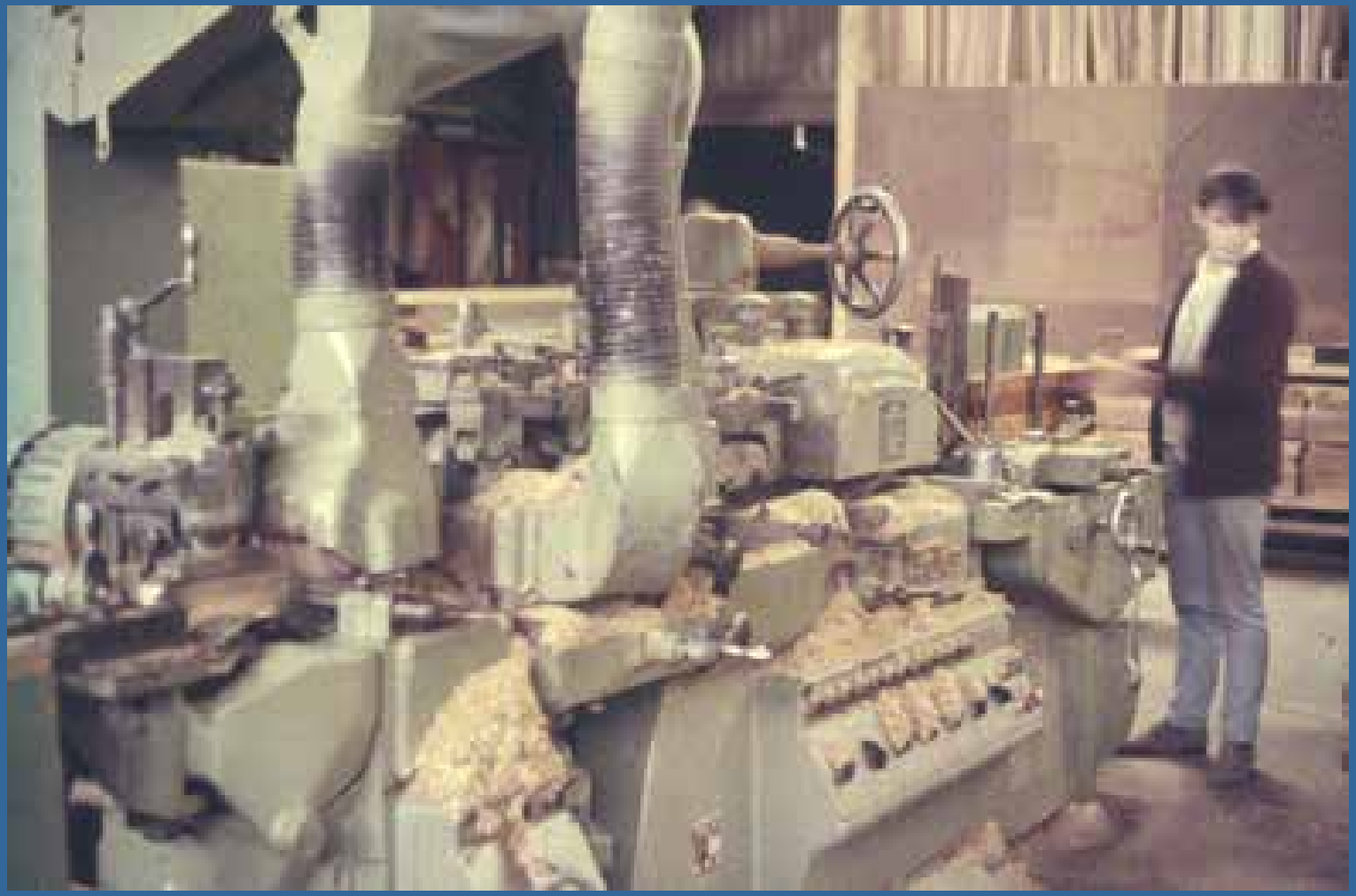
If ‘problem’ is measured in terms of what we can prevent……

What are the Population Attributable Risks?

- NHANES III in the US (2002) found 36% of asthma is occupational in origin
- Review by Blanc and Toren (1999) found range of PARs for occ asthma between 2-33%, median of 9
- Assuming a PAR of 15% for each of occ asthma and COPD, estimated costs in USA are $1.6 billion US dollars for asthma and $5 billion for COPD

Occupational Asthma

- Defined as asthma appearing de novo in someone with no pre-existing asthma
- Over 450 known agents listed in Hendrick et al ‘Occupational disorders of the lung’ 2002
- Across a wide range of industries
- Rapidly expanding list
- High molecular weight agents - immunological basis
- Low molecular weight agents - mechanism less clear - immunol/irritancy
- Often missed diagnosis

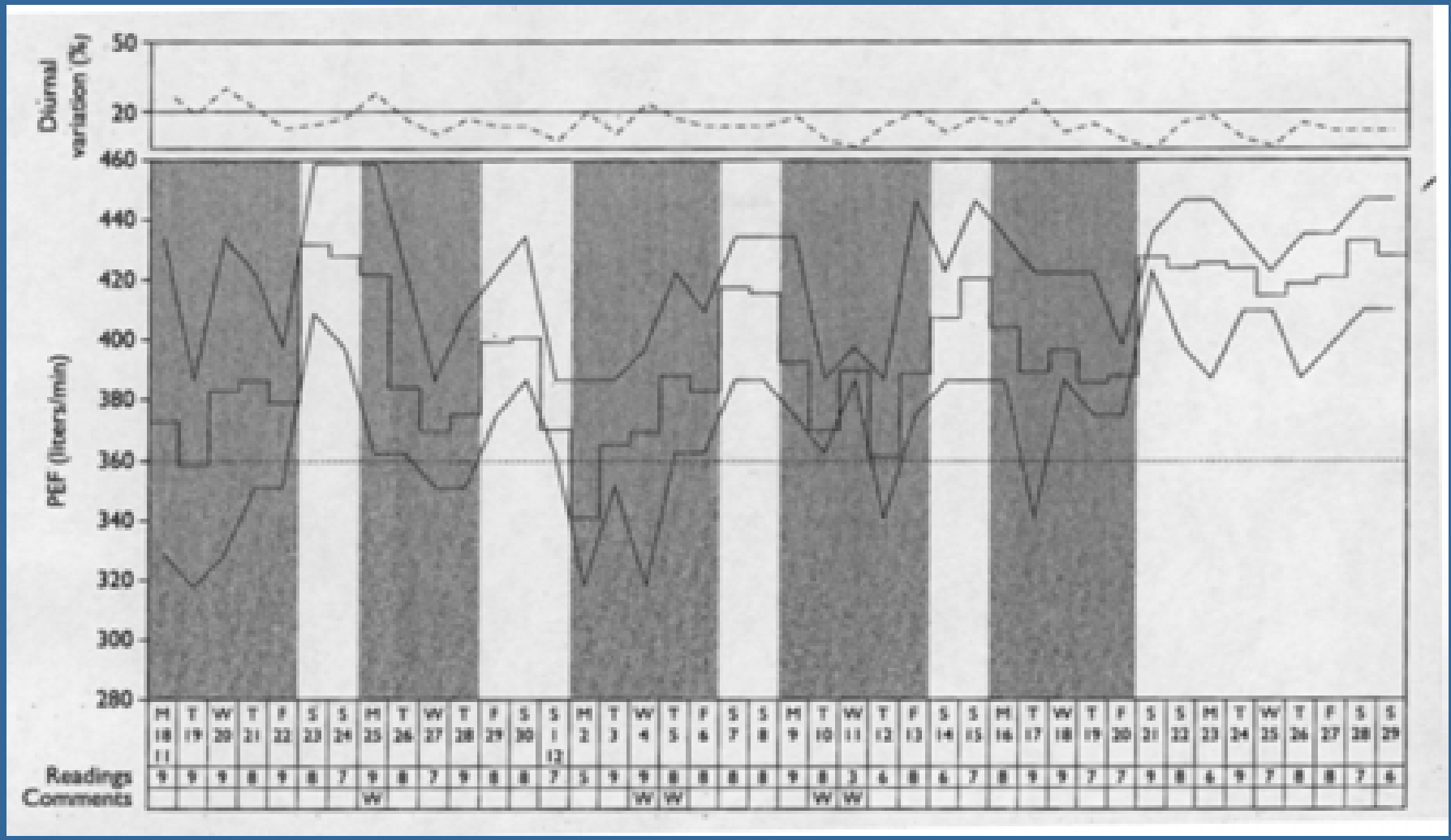



Deluxe
Autocolor
2K MS Hardener
Normal
Sulux
2K
Acrylic
Enamel

Major Asthmagenic Agents

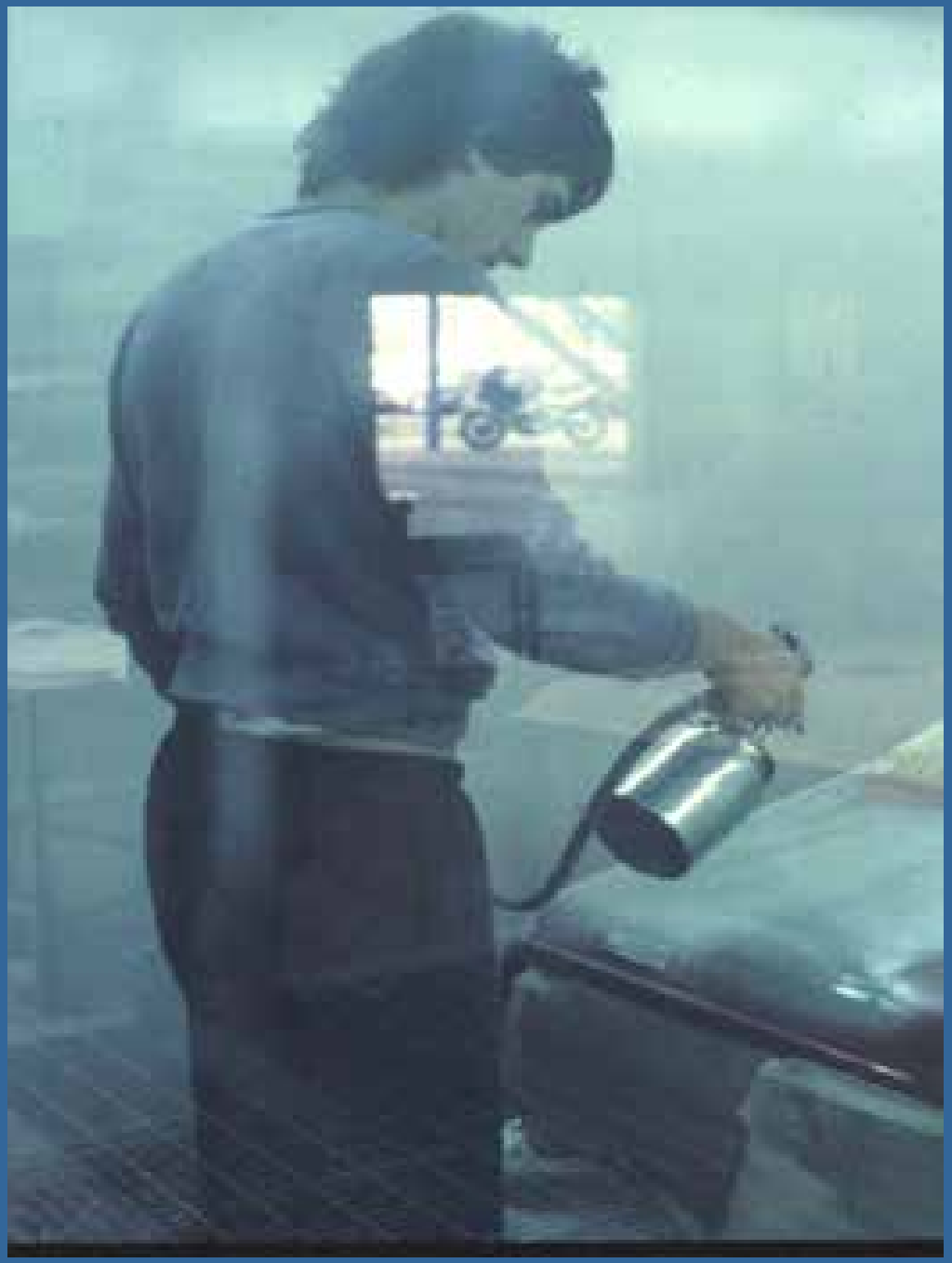
- Isocyanates - polyurethane foam, paints
- Pot room asthma - aluminium production
- Colophony resin - electronics industry
- Grain dust - farming
- Animal handlers - animal houses, farming
- Wood dusts - timber industry, construction
- Antibiotics and other drugs - pharmaceutical
- Enzymes - washing powder manufacture
- Glutaraldehyde - sterilising agent in hospitals
- etc……

Figure 1 Serial 2-hourly PEF measurements, waking to sleeping for 6 weeks in a laboratory technician



Key Points

- Occupational lung disease continues to be an important problem
- Spectrum of type of disease is changing; occ asthma becoming more common
- Have had success in controlling exposures which cause diseases of longer latency, but still seeing (and paying for) the legacy of the past
- Small workplaces a particular problem
- Surveillance schemes provide reasonable estimates, but need better coverage
- BUT, we need to use such data more effectively in prevention activities



That's my 15 minutes!

Thank You