Occupational Disease Exposures:

Australian workers tell their own story!

Occupational Health Symposium

Massey University

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Australian Government
Department of Education, Employment and Workplace Relations
Office of the Australian Safety and Compensation Council

Occupational diseases in Australia have an enormous human & economic impact

Modelling a small **selection** of the priority diseases:

- 880,000 Australians already ill from past exposures
- Direct health costs for these exceed $1bn annually
- If controls are ineffective potentially millions of Australians are at risk of becoming ill

Existing workers' compensation & other health data sources

do not provide an accurate picture of **current exposures**

especially for diseases

with long latencies

Occupational diseases are often not recognized due to long gap between the exposure & disease development

Asbestos exposure in aircraft manufactures

Often not claimed or successfully compensated due to difficulties separating work & non-work attributions

Was the skin cancer in this arc welder caused by the UV generated by the welder or by sun exposure?

Often not claimed due to concerns about job security, legal costs or employees too ill to claim

GPs & workers often prefer to stay outside the ‘system’

Why do we need a dataset on occupational hazard exposures?

Waiting to ‘count health effects’ of exposure to workplace hazards is an ineffective & unethical strategy

Photo source: www.whitefinger.co.uk/

Better hazard exposure data will tell us where our prevention efforts are needed NOW


Better exposure data will inform development of national OHS regulations & interventions


Better exposure data will help us measure our prevention success or failure

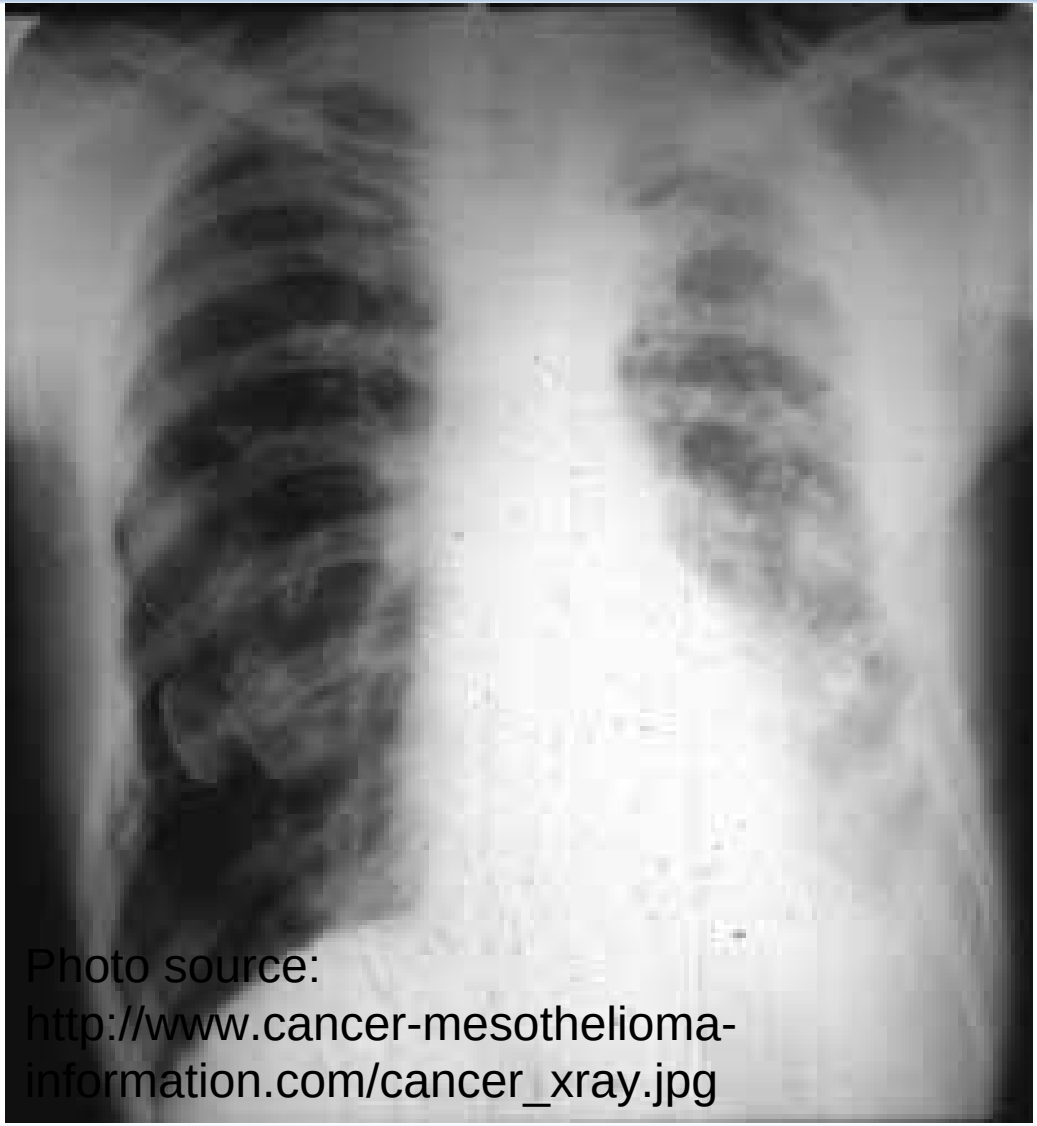


Photo source:
http://www.cancer-mesothelioma-information.com/cancer_xray.jpg

Better exposure data will help us estimate the future economic & health burden of disease if exposure controls are not successful

Why ask the *workers* about their exposures to workplace hazards?

Why ask the workers?

- ✓ They experience the effects of the hazards
- ✓ For some hazards it is their perception which is important
- ✓ Even where they might rate exposures differently to supervisors/OHS professionals these can reflect awareness of workplace hazards & controls
- ✓ Self-report is cost effective & largely reliable
- ✓ Validation projects are underway to weight self report data

Australian workers told us in the ‘last week’:

which hazards they were exposed to,
for how long &
what controls were provided

their age, gender, education,
income, industry they worked in, size of employer, job title & main work activities

their body part discomfort, & overall fatigue & stress levels

National Hazard Exposure Worker Surveillance survey (NHEWSs)

- First Australian nationally representative exposure survey
- Developed & funded by the Cwlth, NSW, Vic, SA, Qld, WA & NT
- Wave one (n=1900)
  - Manufacturing
  - Transport & Storage
  - Health & Community Care Services
  - Construction
  - Agriculture, Forestry & Fishing
- Wave two mix priority & non Priority industries (n=2600)
- Used CATI

NHEWS Survey items derived from

- European Working Conditions Survey
- NOES Survey (NIOSH, USA)
- Danish Work Environment Cohort Study
- Swedish Workplace & Environment Survey
- Job Content Questionnaire
- Nordic Skin Questionnaire
- Victorian WorkCover Authority Worker Surveys &
- Working Life in New Zealand Study

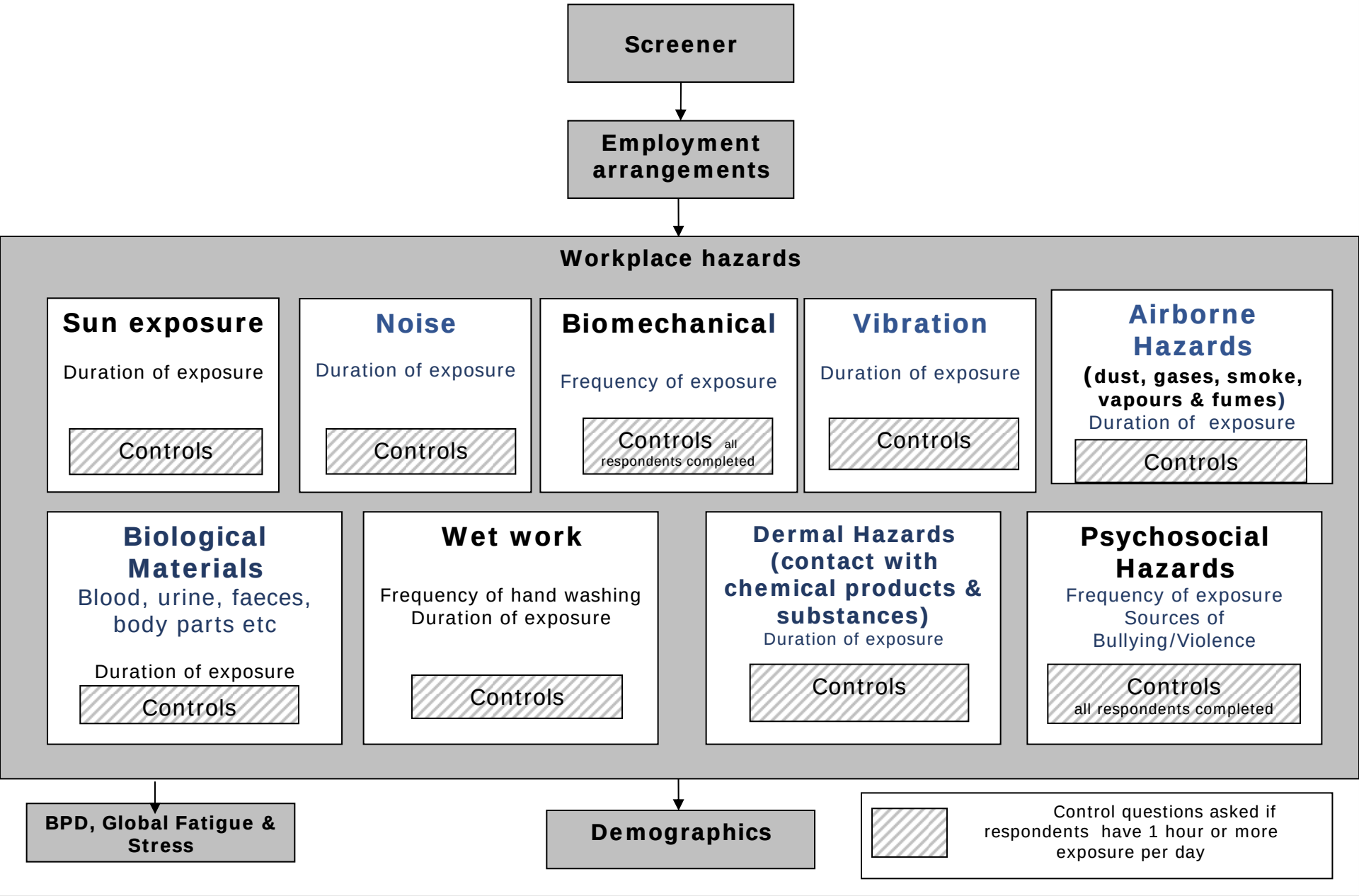
Potential survey bias & limitations

- Workers interested in OHS
- Paid workers who are over 18 with a landline
- Data from ‘last week’ and only relates to main job
- Workers may recall or report exposures differently to OHS professionals –validation required
- Control responses do not necessarily reflect that controls are effective
- Exposure dose can’t be calculated (no information on intensity of exposures)
- Limited symptom questions
- No health outcome data
- Limited hazards only those relating to a priority disease

Bias controlled by

- ✓ Cognitive testing of items
- ✓ Items designed with face validity
- ✓ Limiting duration of survey < 20 mins
- ✓ Anonymous surveying by independent researcher (no reason to over or understate exposures)
- ✓ Randomly sampling of households
- ✓ Use of the next ‘birthday rule’
- ✓ Up to 10 calls to access respondent
- ✓ Limiting responses to last week
- ✓ Quota controls: gender, industry & state
- ✓ Large sample size (n=4500) results are statistically significant

NHEWS Questionnaire Structure



Summary Results

Hazard	% Exposed	Daily Exposure	Weekly Exposure	Top 3 Control Measures (% used - of those exposed)	Industries Where Hazards Commonly Exist
Direct Sunlight	34%	4.37 hours (mean) 4 hours (median)	12.17 hours (mean) 6 hours (median)	1. Sunscreen – 65% 2. Hats – 63% 3. Protective clothing – 59% Nothing – 17%	• Agriculture, Forestry & Fishing • Construction
Loud Noise	32%	4.67 hours (mean) 4 hours (median)	13.18 hours (mean) 5 hours (median)	1. Ear plugs – 63% 2. Ear muffs – 60% 3. Training – 41% Nothing – 17%	• Mining • Manufacturing • Construction
Vibrating Tools, Equipment or Vehicles	30%	4.62 hours (mean) 4 hours (median)	15.25 hours (mean) 8 hours (median)	1. Gloves – 65% 2. Products with less vibration – 31% 3. Vibration absorbing seats – 30% Nothing – 22%	• Mining • Agriculture, Forestry & Fishing • Construction
Dust	34%	4.66 hours (mean) 4 hours (median)	15.52 hours (mean) 8 hours (median)	1. Masks – 61% 2. Reduce time spent in dusty environment – 41% 3. Ventilation – 40% Nothing – 25%	• Mining • Construction
Gases, Vapours, Smoke or Fumes	22%	4.52 hours (mean) 3 hours (median)	13.81 hours (mean) 5 hours (median)	1. Ventilation systems – 59% 2. Masks – 49% 3. Reduce time spent in environment where there are gases, vapours-41% Nothing – 22%	• Mining • Manufacturing • Transport & Storage

Note: Psychosocial and Biomechanical hazards are not included in this summary as they did not have a daily/weekly exposure question.

Summary Results

Hazard	% Exposed	Daily Exposure	Weekly Exposure	Top 3 Control Measures (% used - of those exposed)	Industries Where Hazards Commonly Exist
Biological Materials	20%	4.59 hours (mean) 4 hours (median)	13.56 hours (mean) 6 hours (median)	1. Gloves – 89% 2. Training – 71% 3. Labelling & Warning signs – 68% Nothing – 7%	• Health & Community Services • Agriculture, Forestry & Fishing
Wet Work	25%	2.01 hours (mean) 1 hour (median)	4.69 hours (mean) 1 hours (median)	1. Gloves – 76% 2. Labelling & Warning signs – 54% 3. Barrier creams – 45% Nothing – 13%	• Accommodation, Cafés Restaurants, • Health & Community Services • Agriculture, Forestry & Fishing
Chemical Substances on skin	36%	2.55 hours (mean) 1 hour (median)	5.83 hours (mean) 2 hours (median)	1. Washing Facilities – 84% 2. Gloves – 83% 3. Labelling & Warning signs – 69% Nothing – 6%	• Accommodation, Cafés and Restaurant • Cultural & Recreational / Personal & Other Services • Agriculture, Forestry & Fishing

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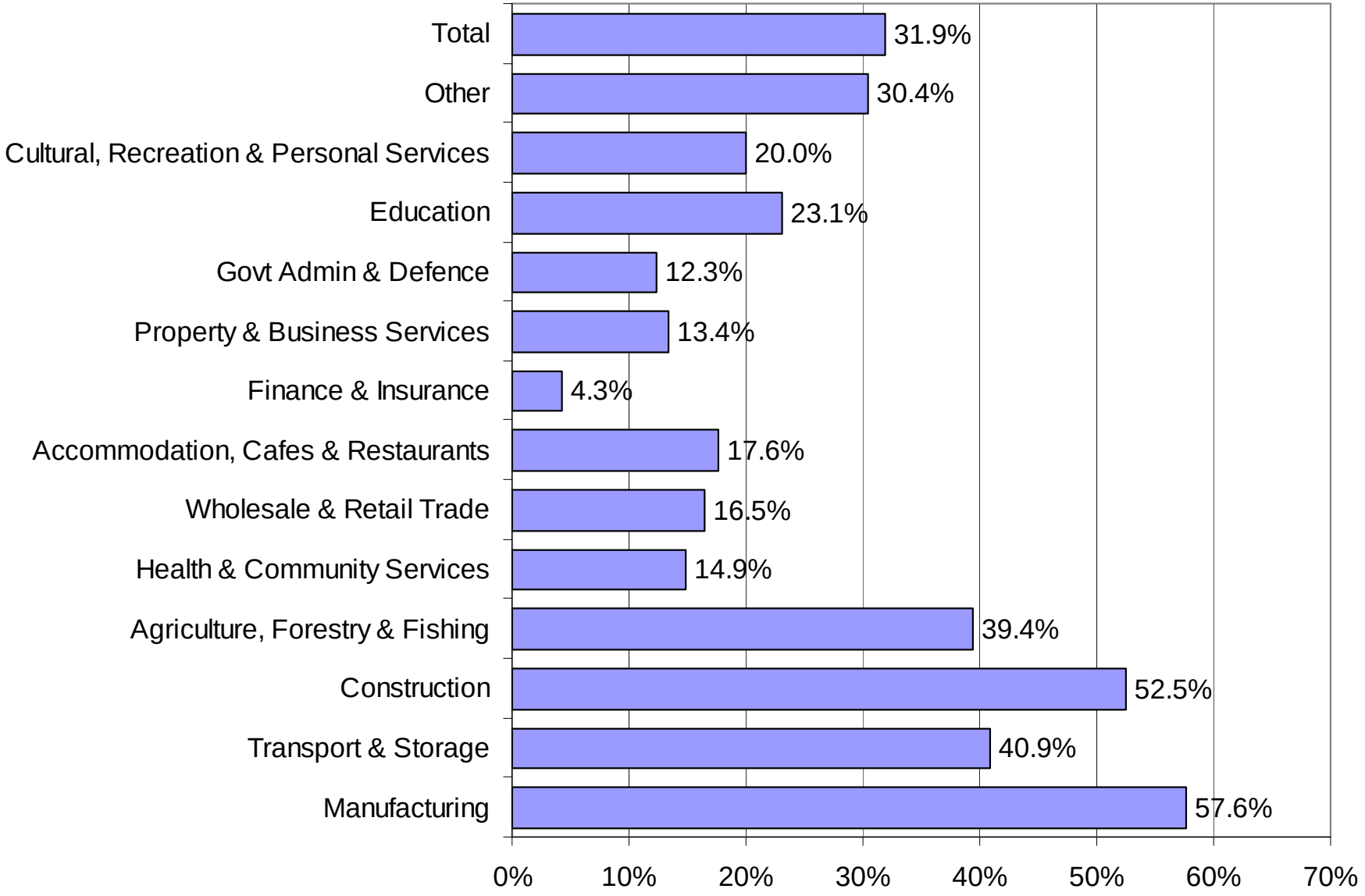
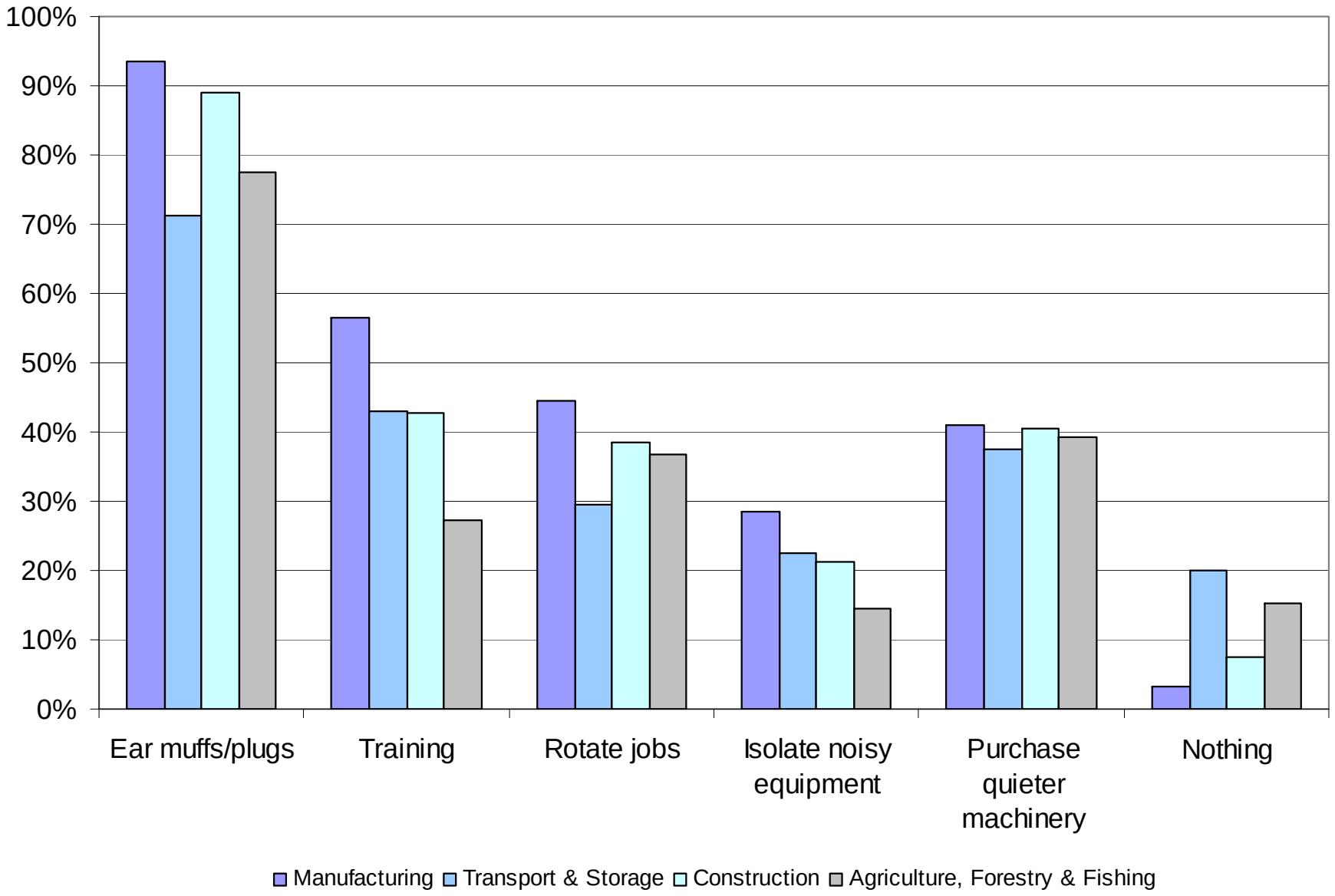
Loud Noise Exposure*

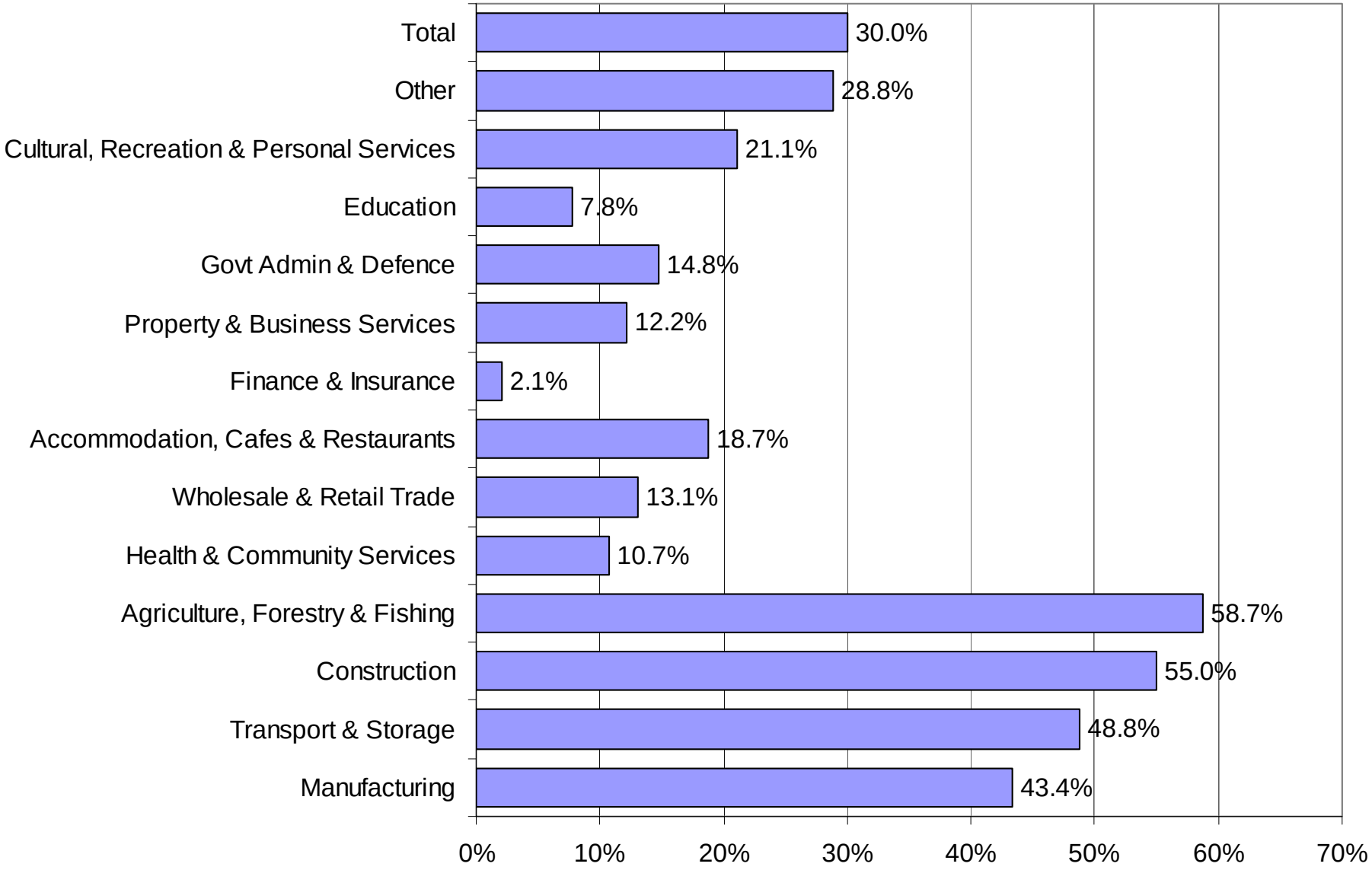


* Loud = Raise your voice to be heard when others at arms length

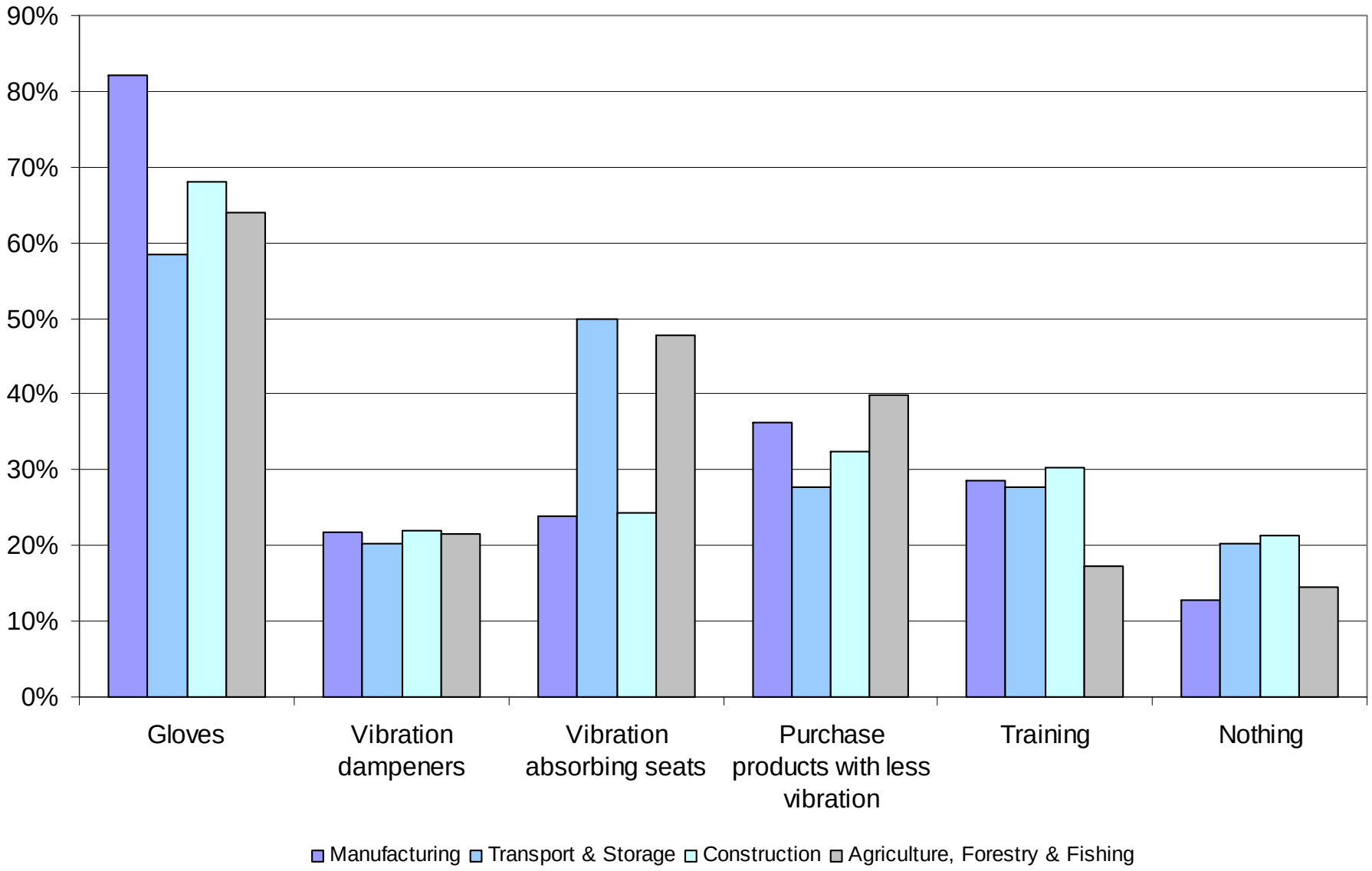
Noise Exposure Controls



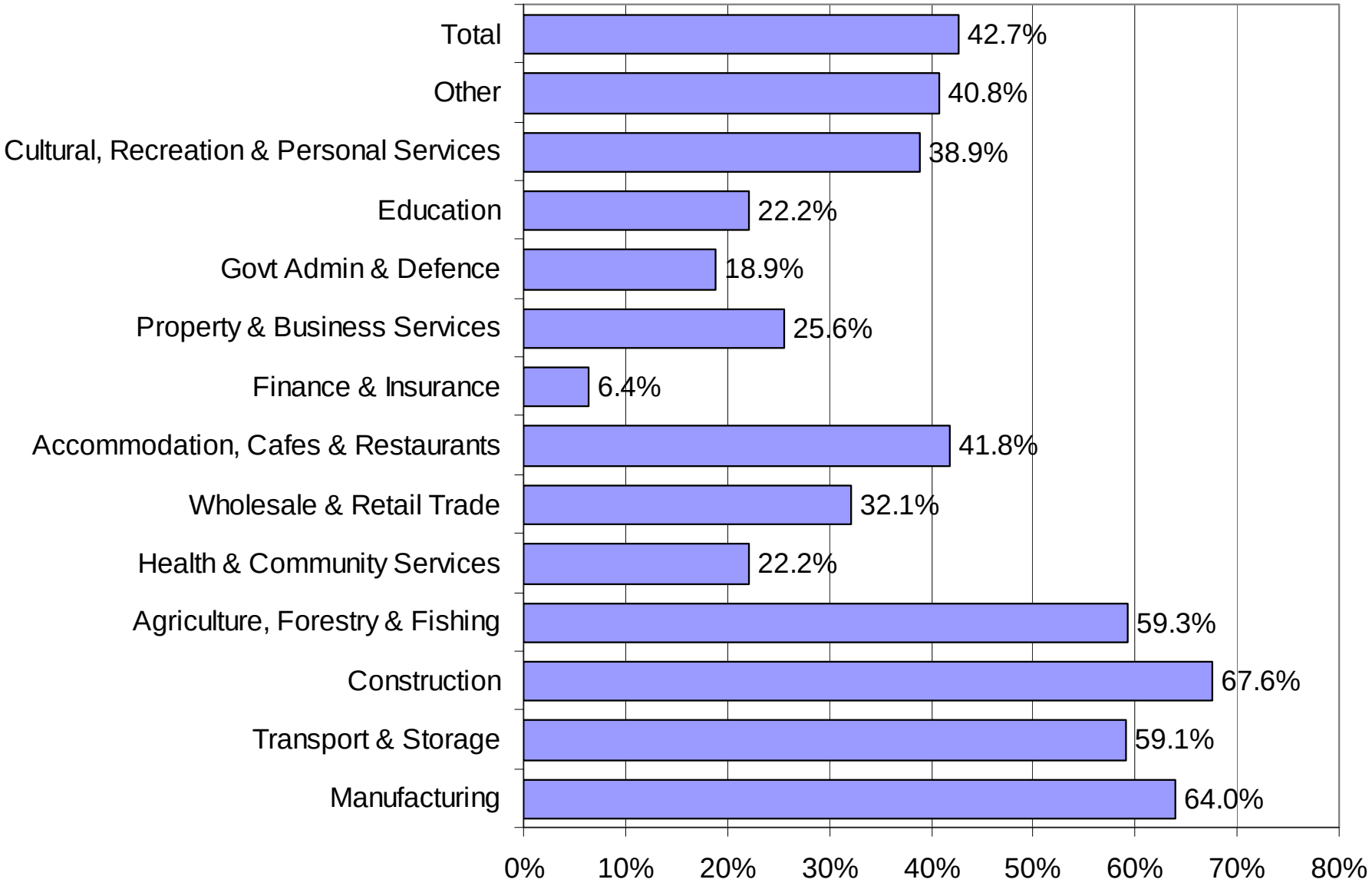
Exposure to Vibrating Tools, Equipment or Vehicles



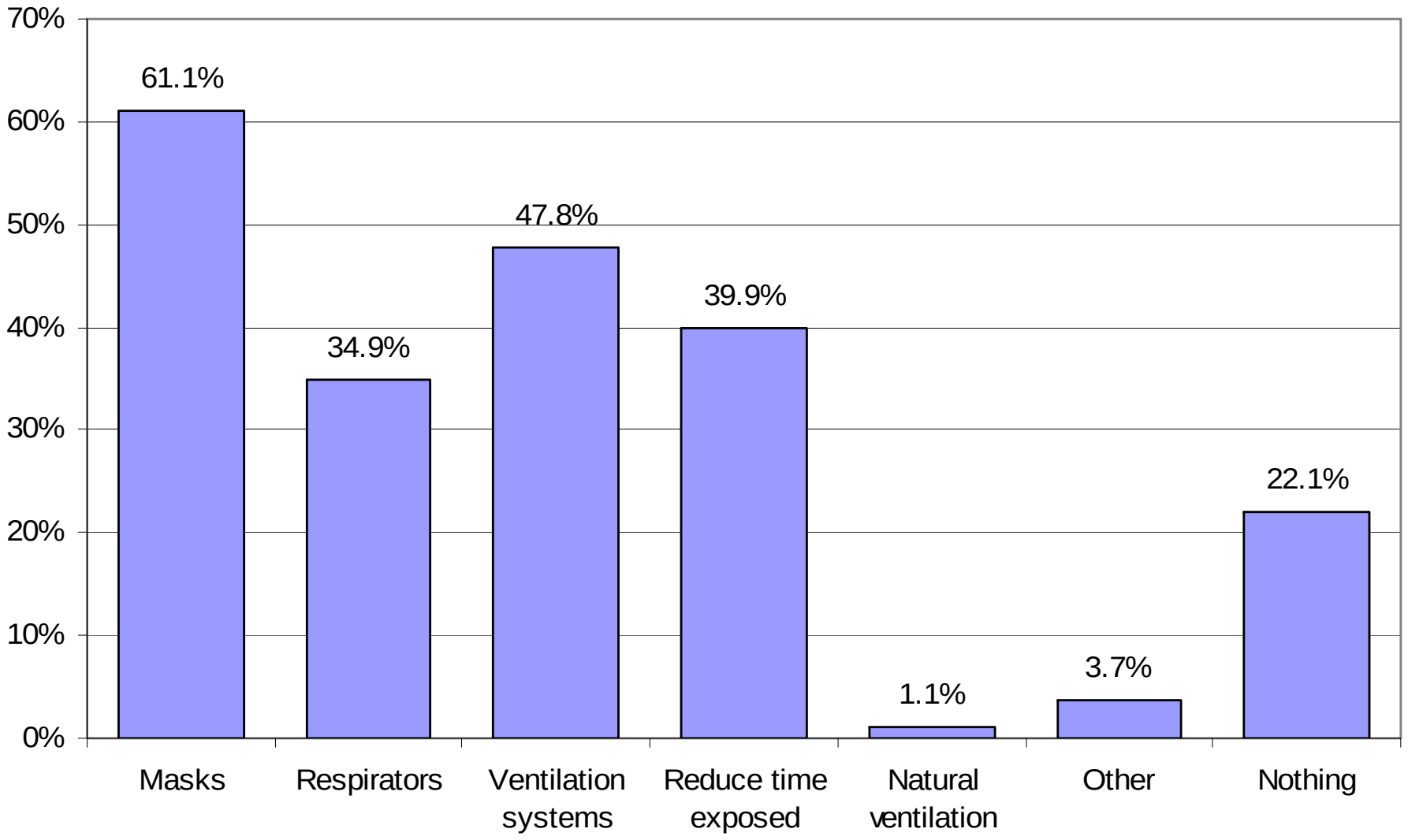
Vibration Exposure Controls



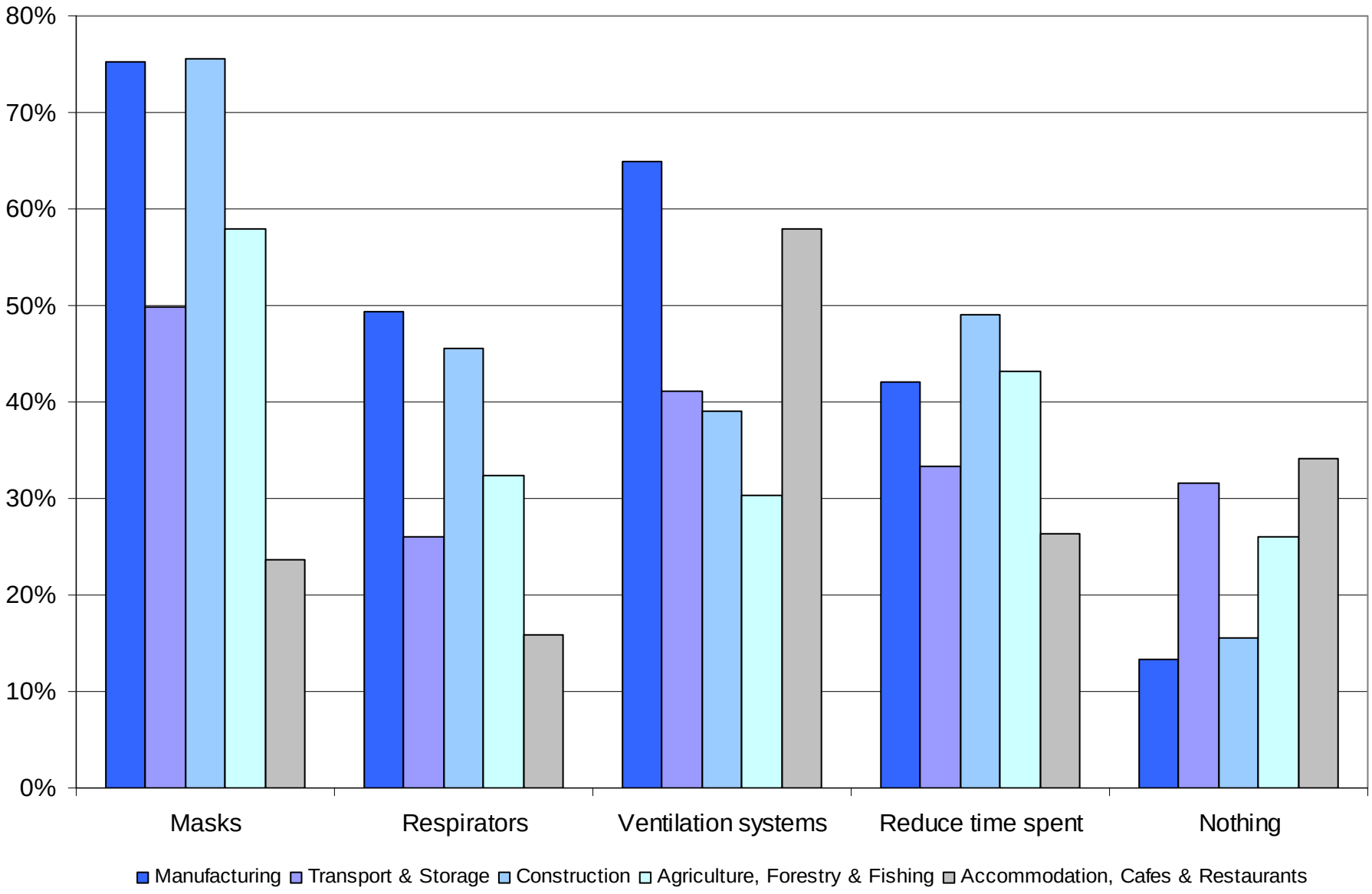
Exposure to Airborne Hazards



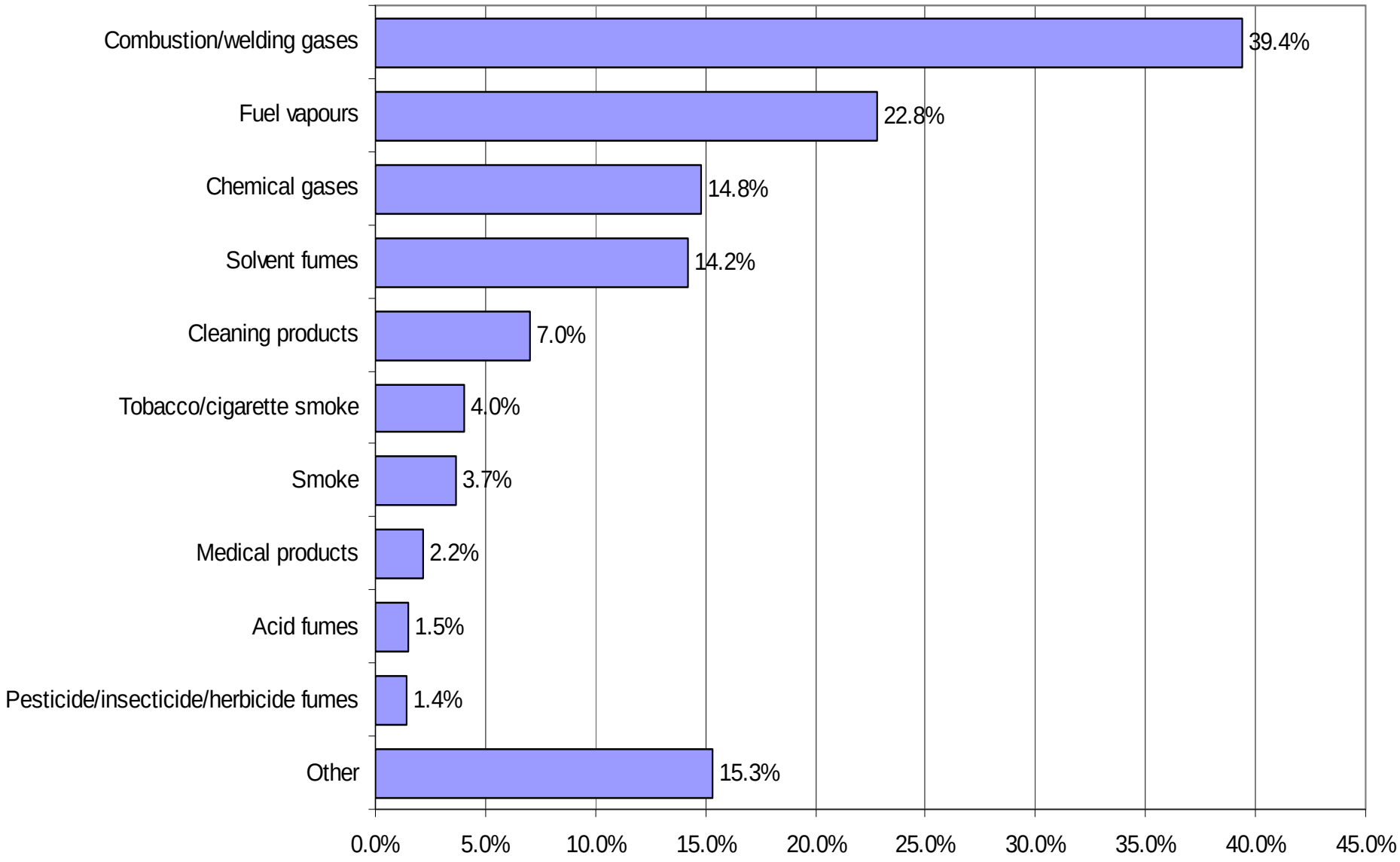
Airborne Hazard Exposure Controls



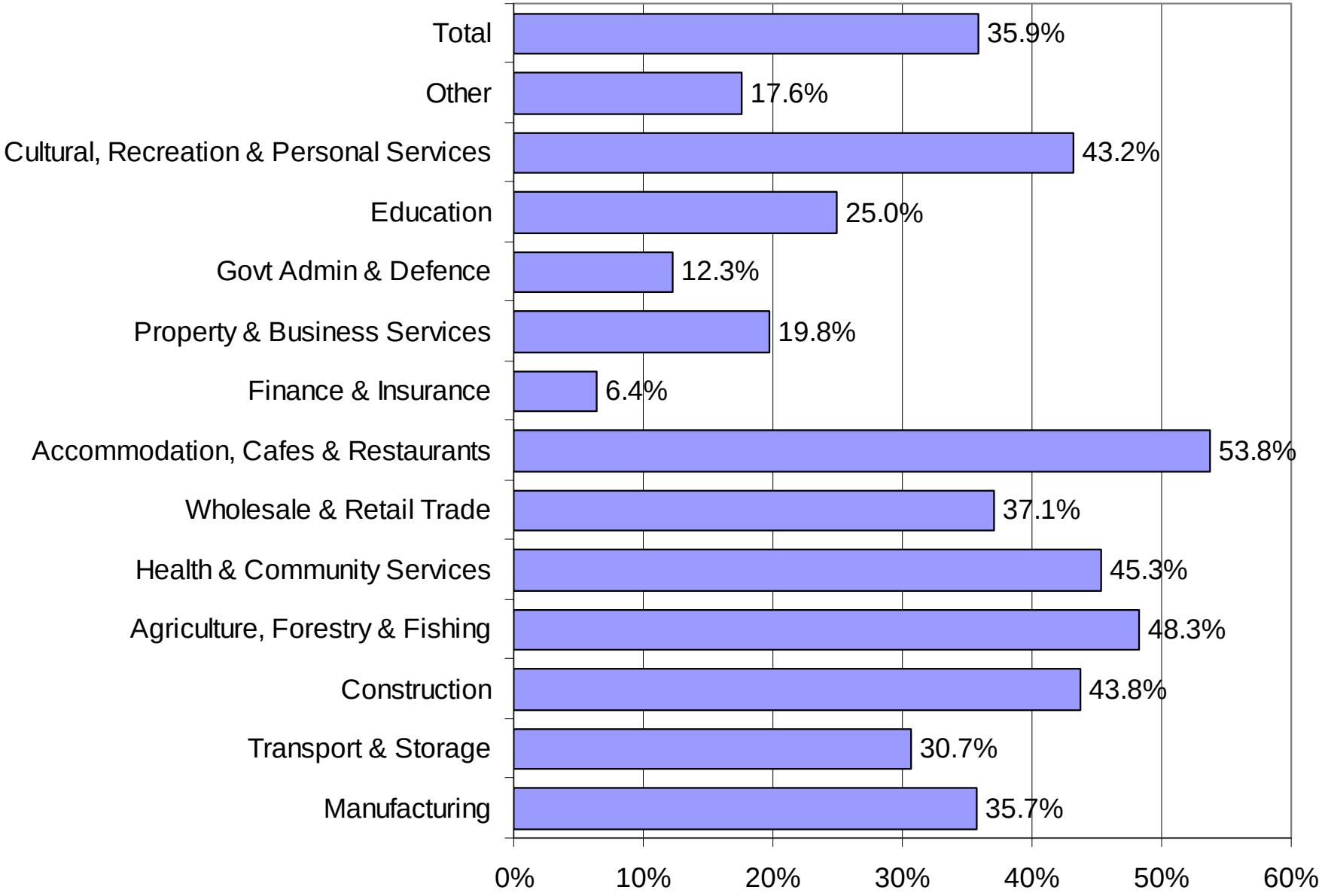
Airborne Hazard Exposure Controls



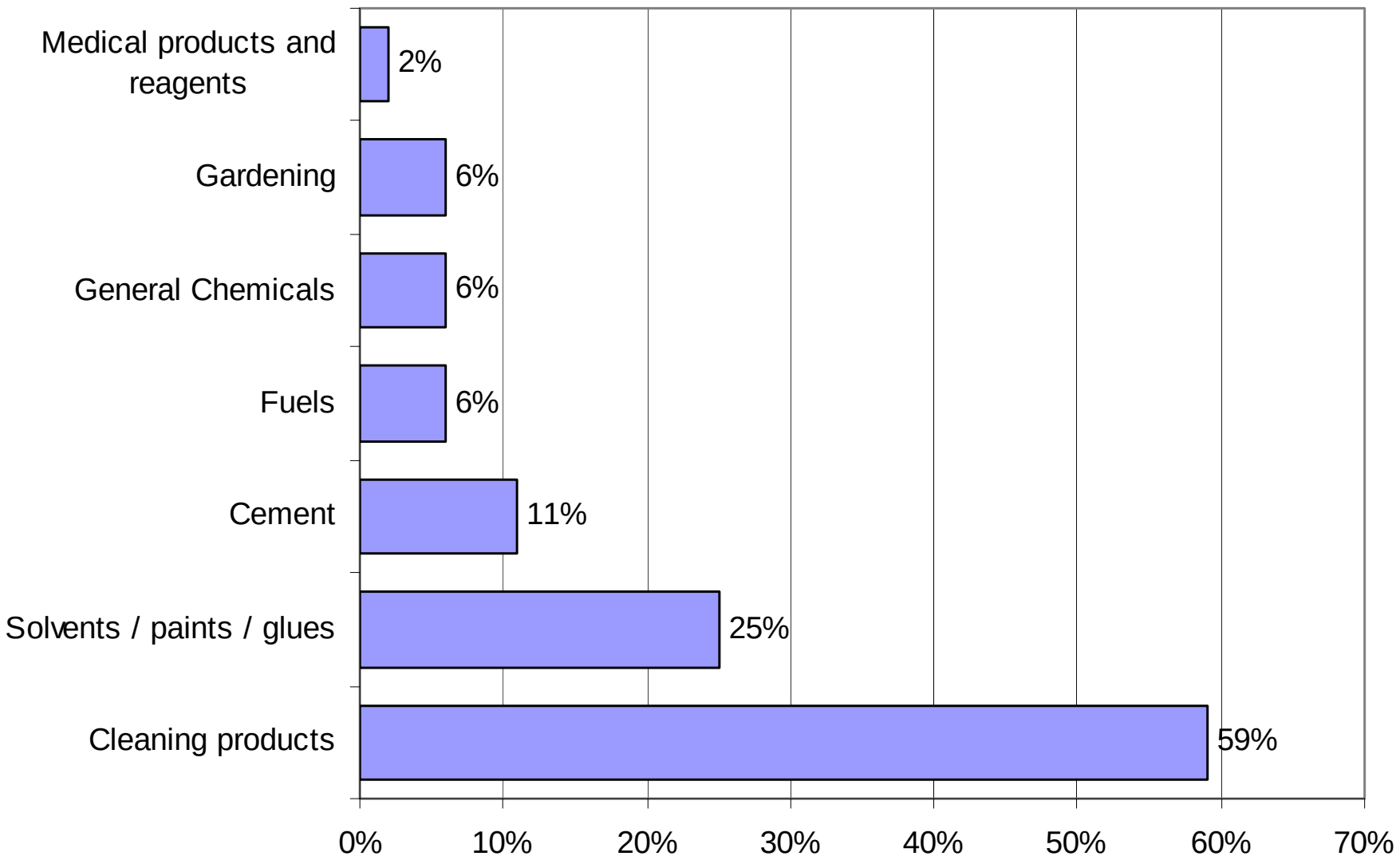
Airborne Hazards: Main Types



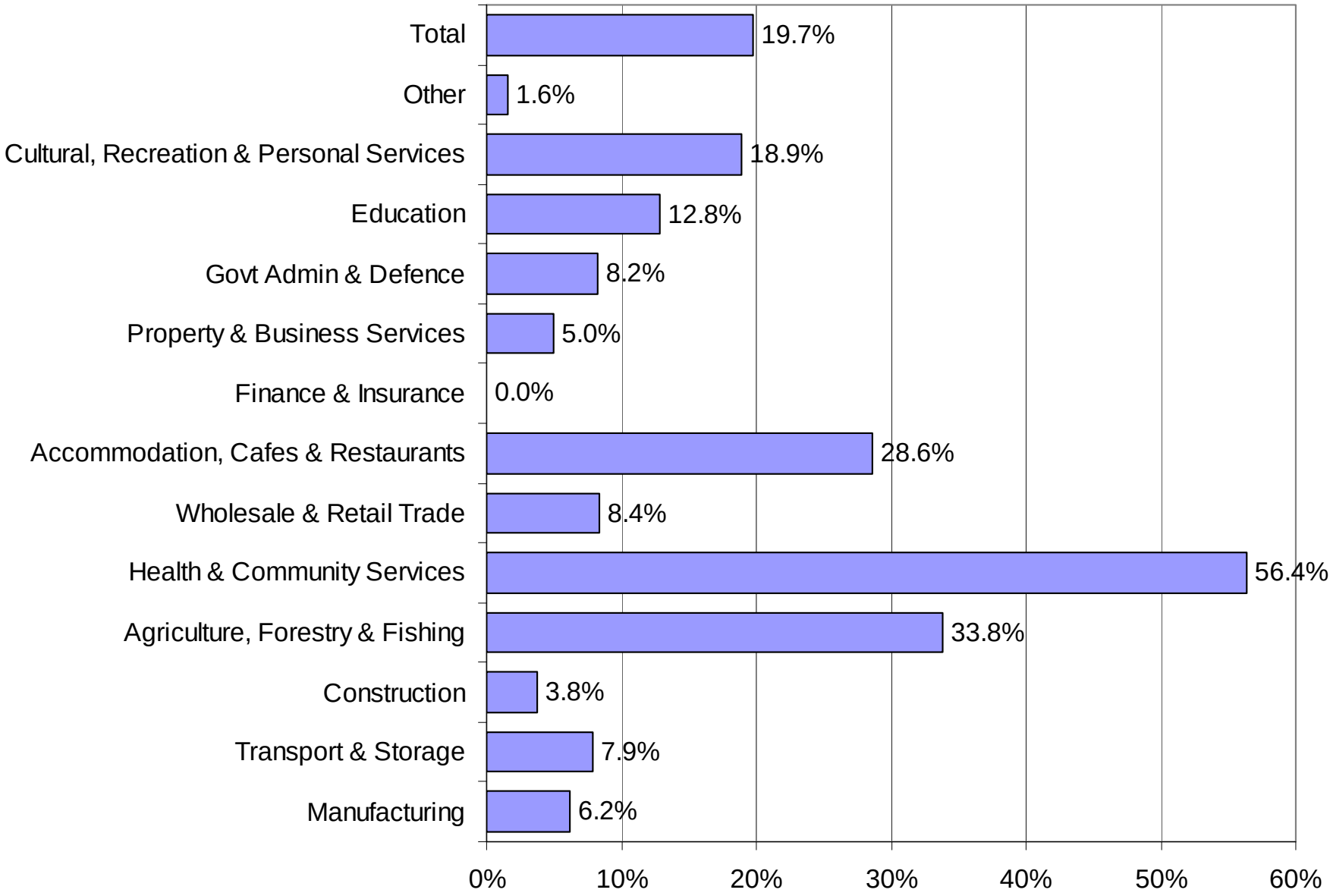
Dermal Exposure to Chemicals



Dermal Exposures: Main Types



Biological Materials Exposure



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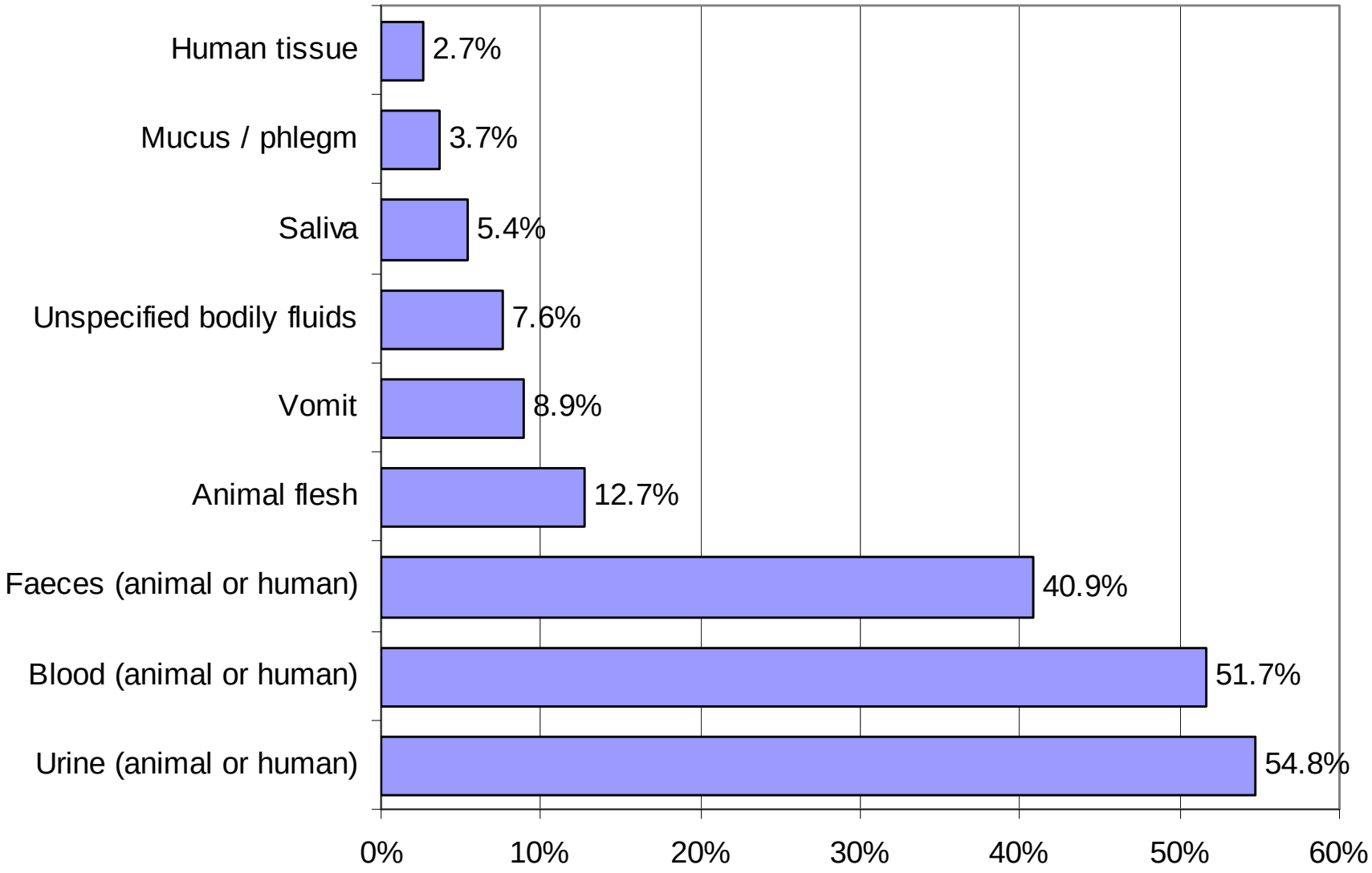

Biological Materials Exposure Controls