OCCUPATIONAL CANCER/ZERO CANCER
A union guide to prevention
Occupational cancer/
Zero cancer
Work started it…
Unions will stop it

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You don’t hear much about occupational cancer. You hear about cancer the tragedy for the individual, cancer the challenge for the medical profession, cancer the result of smoking and bad diet. But at least one in every 10 cancers – and probably many more – is the result of preventable, predictable workplace exposures. Asbestos is the biggest industrial killer of all time, and kills thousands from cancer every single week, at least one death every five minutes. But it is not banned worldwide.

Dozens of other substances known to cause cancer are used, quite literally, in industrial quantities in our workplaces, frequently with few controls. They are not yesterday’s problem. At work, we face a barrage of rapidly evolving substances, work methods, processes and environments with little thought given to the health consequences that will face society – workers, families, entire communities – a working generation down the road. Because today’s exposures cause cancers at least two decades later, it is a problem that doesn’t cause alarm bells for corporate executives who are answerable to shareholders from annual general meeting to annual general meeting. Instead, the causes are covered-up, the bodies are buried and the killing continues.

But not any more. Unions are challenging workplace cancer risks. Asbestos bans are spreading, despite a cash-rich rearguard public relations offensive by the asbestos industry. Unions have won recognition of causes of occupational cancer, restrictions on their use and compensation for their victims. Prevention, though, is the only cure. That’s why, through advice, training and union action at workplace, national and international levels, this campaign intends to ensure workplace ill-health is not the forgotten item on the cost-benefit ledger. Work should provide a living, not a cause of death.
Learning lessons

Asbestos is the world’s biggest ever industrial killer. Studies suggest asbestos disease could eventually account for 10 million deaths worldwide. At least 100,000 die each year – one person every five minutes. Despite its deadly history, there is no worldwide ban and there is even evidence asbestos production could be increasing. While many richer nations will no longer tolerate its use and have introduced stringent laws controlling the asbestos that remains in workplaces, the same cannot be said for developing nations. And it is these nations that are being targeted by the global asbestos industry lobby.

Asbestos cancer rates are still climbing in many industrialised nations. Unless we learn the lessons of these deaths, we’ll see a new generation killed by new epidemics – same tragedy, different location. There are signs we can stop history repeating itself. After a high profile union campaign, international organisations including the International Labour Organisation (ILO) and the World Health Organisation (WHO) are now backing the union call for a worldwide ban.

It took decades of campaigning to get this far with asbestos. But we are still introducing new substances and new technologies – for example, nanotechnology – to workplaces without the necessary investigations and precautions. We are already seeing raised cancer rates in some computer factories, a supposed “clean industry” which is just one working generation old.

www.imfmetal.org/asbestos
Organisational names for folio?

Serious

Occupational cancer is the forgotten epidemic. However, the International Labour Office (ILO) says it is far and away the most common work-related cause of death, leaving accidents and other occupational diseases well behind. It estimates occupational cancers make up almost one-third of all work-related deaths. Why occupational cancer is considered yesterday’s problem or no problem at all is down to one clear factor. The industries creating the risks have gone out of their way to ensure they are allowed to make, market and profit from the substances responsible. And admitting the problem could mean possible liability in the courts.

Cancer is a very modern killer. For example, lung cancers were virtually unknown a century ago. Since then almost 100,000 synthetic chemicals have been introduced to our workplaces, with many more people exposed to many more substances. The most commonly cited figure for the workplace contribution to the total cancer toll is 4 per cent of all cancers. But this figure is derived from a study over quarter of a century ago. The lead author was receiving substantial undeclared income from industry. And the findings just didn’t add up. Large swathes of the at-risk workforce were excluded from the analysis. Retired workers were excluded too – despite being the workers most likely to develop work-related cancers. Far more people are exposed to far more substances than they were willing to admit.

Studies of actual work-related cancer levels have concluded the true contribution of work to cancer deaths at up to five times this level. Recent reviews suggest a workplace contribution of between 8 and 16 per cent to all cancers. ILO’s cautious estimate puts the human toll at over 600,000 deaths a year – one death every 52 seconds. But this isn’t the whole story. Not everyone is at risk. The great majority of occupational cancers are concentrated in blue collar jobs, meaning those workers face a massively increased risk, while others face virtually none. For some workers in some jobs – certain asbestos and rubber industry workers, for example – work was in effect a death sentence.

WHAT’S KILLING YOU AT WORK?

Causes of work-related deaths worldwide.

1. Cancers: 32%
2. Circulatory disease: 26%
3. Work accidents: 17%

A global union campaign
What causes cancer?

Commonly encountered workplace exposures to chemical, physical and biological agents can place workers at risk.

- Metals such as arsenic, chromium and nickel linked to cancers of the bladder, lung, and skin.
- Chlorination byproducts such as trihalomethanes linked to bladder cancer.
- Natural substances such as asbestos linked to cancers of the larynx, lung, mesothelioma, and stomach; silica linked to lung cancer; aflatoxin contamination on nuts linked to liver cancer.
- Petrochemicals and combustion products, including motor vehicle exhaust and polycyclic aromatic hydrocarbons (PAHs), linked to cancers of the bladder, lung, and skin.
- Pesticide exposures linked to brain cancer, Wilms’ tumour, leukaemia, and non-Hodgkin’s lymphoma.
- Reactive chemicals such as vinyl chloride linked to liver cancer and soft tissue sarcoma.
- Metalworking fluids and mineral oils linked to cancers of the bladder, larynx, nasal passages, rectum, skin, and stomach.
- Ionising radiation linked to cancers of the bladder, bone, brain, breast, liver, lung, ovary, skin, and thyroid, as well as leukaemia, multiple myeloma, and sarcomas.
- Solvents such as benzene linked to leukaemia and non-Hodgkin’s lymphoma; tetrachloroethylene linked to bladder cancer; and trichloroethylene linked to Hodgkin’s disease, leukaemia, and kidney and liver cancers.
- Environmental tobacco smoke linked to cancers of the breast and lung.

More people today face a workplace cancer risk than at any other time in history.

It’s just that most of them don’t know it.

A World Health Organisation (WHO) study concluded 20-30 per cent of males and 5-20 per cent of females in the working-age population could have been exposed to an occupational lung cancer risk during their working lives.

Figures from the French national statistic office DARES published in 2005 revealed more than 1 in 8 workers was exposed to workplace substances that can cause cancer. It concluded 13.5 per cent of the total French workforce was exposed to one or more workplace carcinogen. The figure was higher...
Exposure

than estimates a decade earlier. Blue collar workers were eight times more likely than managers to be at risk, with 25 per cent exposed. Eight products contributed more than two-thirds of all exposures – mineral oils, three organic solvents, asbestos, wood dust, diesel exhaust fumes and crystalline silica.

The European Union’s CAREX database of occupational exposures to carcinogens estimated that in the early 1990s 22-24 million workers in the then 15 EU member states were exposed to carcinogens classified as group 1 by the International Agency for Research on Cancer – those known to cause cancer in humans.

Overall, 32 million workers, 23 per cent of the working population, had workplace exposures associated by the CAREX database with an occupational cancer risk. The most common exposures were solar radiation, environmental tobacco smoke, crystalline silica, radon and wood dust. That over 1 in 5 workers face a workplace cancer risk shouldn’t be a surprise. About 95 per cent of causes of lung cancer, for example, were identified in workplace studies.

What’s the risk?
- More than 1 in 5 workers could be exposed to a workplace cancer risk.
- Occupational cancer is not a disease that concerns the boardroom. The risk is far higher in blue collar jobs.
- Most causes of cancer were identified in studies of workers.
- The International Agency for Research on Cancer (IARC) lists over 50 substances which are known or probable causes of workplace cancer, and over 100 other possibles.

How does it happen?
- There are three main ways workers are exposed to a workplace cancer risk – they can touch it, breathe it or swallow it.
- Skin exposure – either by touching the substance or being exposed by other means, for example skin exposure to sunlight or radiation.
- Ingestion – swallowing hazardous substances, perhaps contaminating food, drink or skin.
- Inhalation – breathing in gases, fumes or vapours.
DOES YOUR JOB PUT YOU AT RISK?

Cancers associated with workplace substances:

**Bladder cancer** Arsenic; solvents; aromatic amines; petrochemicals and combustion products; metalworking fluids and mineral oils; ionising radiation.

**Bone cancer** Ionising radiation.

**Brain and other central nervous system cancers** Lead; arsenic; mercury; solvents, including benzene, toluene, xylene and methylene chloride; pesticides; n-nitroso compounds.

**Breast cancer** Ionising radiation; endocrine disrupters; solvents; passive smoking; PCBs; pesticides; combustion by-products; reactive chemicals including ethylene oxide; possible links to non-ionising radiation, phthalates.

**Colon cancer** Limited evidence for solvents xylene and toluene and ionising radiation.

**Hodgkin’s disease** Solvents; pesticides; woodworking.

**Kidney cancer** Evidence sketchy because of high survival rates, but some links to arsenic, cadmium and lead; solvent exposure; petroleum products; pesticides linked to Wilms’ tumour in children, and to the children of fathers employed as mechanics or welders.

**Laryngeal cancer** Metalworking fluids and mineral oils; natural fibres including asbestos; some evidence for wood dust; exposure to reactive chemicals including sulphuric acids. Excesses in rubber workers, nickel refining, and mustard gas and chemical production.

**Leukaemia** Organic solvents and chlorinated solvents, paints and pigments; reactive chemicals; ionising radiation; conflicting evidence on non-ionising radiation; pesticides.

**Liver and biliary cancer** Ionising radiation; vinyl chloride and angiosarcoma of the liver; PCBs. Some evidence for arsenic, chlorinated solvents and reactive chemicals.

**Lung cancer** Arsenic; beryllium; cadmium; chromium; nickel; solvents, particularly aromatics (benzene and toluene); ionising radiation, including radon-exposed uranium, haematite and other ore miners; reactive chemicals including BCME, CCME, mustard gas, plus suggestive evidence for sulphuric acids; passive smoking; petrochemicals and combustion byproducts; asbestos; silica; wood dust; some man-made fibres, including ceramic fibres.

**Mesothelioma** Asbestos; erionite.

A JOB TO DIE FOR?

Certain jobs have a notorious reputation for causing cancer. Asbestos and lung cancer and mesothelioma, a cruel and invariably fatal cancer. Vinyl chloride exposure and liver cancer. Work in the rubber industry and bladder cancer. And nasal cancer and work with wood or leather dust.

But many other jobs have a risk which is just as real, but which is less commonly known. The man who delivered the milk to an asbestos factory in Canada got cancer as a result. Nurses handling cancer drugs can be at risk. And workers in newer industries, like microelectronics, may have to wait until evidence – a sufficiently high pile of bodies – emerges confirming they were at risk.

Even with “clean” technology and improved, modern, workplace safety practices, the risks can be real.

A 2006 US study using the firm’s own ‘Corporate Mortality File’, found staff employed at IBM computer factories had high rates of a range of cancers linked to exposures to chemicals and electromagnetic fields. Studies have found similar problems in computer factories in other countries.

Office jobs too can have their risks. After Australian media union MEAA raised concerns about apparently high breast cancer risks in the broadcaster’s Brisbane studios, the findings were confirmed in a management-commissioned study. The studio was shut down.

Other factors, like shiftwork and passive smoking, have also been linked to occupational cancers.
Why work cancers get missed

- **Common cancers** Dusty jobs in general have a higher lung cancer rate, but because lung cancer is common and is often caused by smoking, the link to work is usually missed.

- **Inadequate studies** Most of what we know about occupational cancer is based on big studies in industrial workplaces. These miss many jobs dominated by women, for example, or workers in small firms.

- **New factors** New substances or processes can present new risks. By the time cancers emerge, the substance, process and even the workplace may be long gone.

- **Unexpected exposures** Hairdressers have developed asbestos cancers, caused by asbestos used in hairdryers. Teachers, nurses and doctors have developed the same cancers caused by asbestos used in their workplaces.

- **Paying the price** Industry financed studies and lobbying ensure evidence of risks posed by some jobs is suppressed or played down.

### Multiple myeloma
Some evidence for a link to solvents, ionising radiation, pesticides and dye products.

### Nasal and nasopharynx cancer
Chromium; nickel; some evidence for benzene, reactive chemicals and formaldehyde; metalworking fluids; natural fibres including wood dust; ionising radiation. Associated with work in footwear manufacture.

### Non-Hodgkin’s lymphoma
Organic solvents; pesticides. Some evidence for PCBs and dioxin and possibly dye products.

### Oesophageal cancer
Suggestive evidence for solvent exposure, particularly tetrachloroethylene; metalworking fluids.

### Ovarian cancer
Limited evidence for pesticides and ionising radiation. Limited evidence for an excess in hairdressers and beauticians.

### Pancreatic cancer
Acrylamide; metalworking fluids and mineral oils. Some evidence for cadmium, nickel, solvent exposure, reactive chemicals, possibly formaldehyde. Limited evidence for pesticides.

### Prostate cancer
Links to cadmium, arsenic and some pesticides. Excess risks have been found for exposure to metallic dusts and metalworking fluids, PAHs and liquid fuel combustion products, and farmers and pesticide applicators.

### Rectal cancer
Metalworking fluids and mineral oils. Some evidence for solvents, including toluene and xylene.

### Skin cancer
UV and sun exposure; metalworking fluids and mineral oils; Non-melanoma skin cancers from arsenic, creosote, PAHs, coal tars and ionising radiation.

### Soft tissue sarcomas
Vinyl chloride monomer (angiosarcoma of the liver); pesticides. Ewing’s sarcoma in pesticide exposed workers.

### Stomach cancer
Ionising radiation; metalworking fluids and mineral oils; asbestos. Some evidence for solvents and pesticides. Excess risks found in workers in the rubber, coal, iron, lead, zinc and gold mining industries.

### Testicular cancer
Evidence for endocrine disrupting chemicals (eg. phthalates, PCBs and polyhalogenated hydrocarbons). A literature review found significantly elevated risks in men working in industries including agriculture, tanning and mechanical industries, and consistent associations with painting, mining, plastics, metalworking and occupational use of hand-held radar.

### Thyroid cancer
Ionising radiation.

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A global union campaign
If you think sticking your head in the text books will give you all the answers about workplace cancer risks, you’d be wrong. Barely one in every 100 chemicals used at work has been systematically tested.

Finding out if there is a workplace risk requires union vigilance. That means doing your own detective work. Unions have been instrumental in first identifying a number of workplace cancers, from bladder cancer in dye workers to liver cancer in vinyl chloride workers.

Remember, keep it as simple as possible. A quick discussion at a union meeting might provide all the information you need. Just make sure you involve the workforce – they know their jobs, their workmates and the real hazards of the job.

**WHAT’S THE PROBLEM?**

**Ask around:** Has one part of the workplace got high levels of sickness absence? Are you aware of cases of cancer in workers or ex-workers? Are affected workers all doing similar jobs or using the same substances, for example working in the foundry, cutting stone or handling toxic chemicals? Check with other union reps and colleagues, particularly those who have been at the firm or working in the industry for a long time.
Risk mapping  Draw a basic map of the workplace, marking on it the machines, workstations and the substances or processes used. Record on the risk map any health problems reported by workers doing particular jobs. Repeat the exercise periodically and see if any problems become apparent. If cancer causing substances or processes are being used, investigate alternatives and, if this is not possible, safer work methods.

Body mapping  Draw two body outlines on a large piece of paper, one representing the front of a person, one the back. Get workers to write on where they feel pain or have had health problems or symptoms. If workers doing similar jobs identify similar problems, then you can start linking workplace factors to their health concerns.

Investigate  Review existing sources, like workplace sick leave, accident, compensation and pension records. Don’t forget retired members – many cancers take decades to emerge, so may only occur after a worker has finished working. Newspaper reports may highlight local deaths linked to occupational disease. Where there is a suspicion of a problem, dig deeper.

Surveys  Do-it-yourself research can quickly identify problems. This need not be a highly scientific and time-consuming business. A union rep could ask workers on their lunch break if they have concerns about a particular job or substance, or if they had noticed any worrying sick leave trends or causes of ill-health in their workmates.

Get your priorities right  If you find out a cancer-causing substance or process is in use, negotiate safer substances, processes or work methods immediately. The best way to ensure you don’t find any cancers in your workplace is to ensure there are no jobs where workers are at risk.
Union campaigns have been critical in identifying and addressing occupational cancer risks. But fighting each problem case-by-case is no substitute for a properly designed, strategic cancer prevention strategy. A successful union ‘prevent cancer campaign’ relies on both national union commitment and resources and participation by active and informed local union reps and members. And it requires vigilance, to ensure promised improvements are effectively implemented.

Local union action
- List substances and processes that are known or suspected hazards. Locations where cancer agents may be found should be noted and exposed workers should be informed.
- Make sure the company has informed workers who are exposed to potential cancer risks and other hazards.
- Seek medical screening programmes for workers who have had exposure to workplace hazards, including possible cancer risks. This should include retired members, who are most likely to develop work-related cancers.
- Negotiate strict controls, even where minimum government standards are being met. Remember, there is no safe exposure to a cancer agent.
- Remember the basic control techniques: substitution; process changes; enclosure; local exhaust ventilation; strict housekeeping; and protective equipment.
- Make sure real improvements are being implemented – making the workplace safer and providing necessary support and information for workers who have been put at risk.

National union action
- Consider which workplace and industries pose a possible cancer risk. Remember, the existing workforce may be healthy – the cancers may only appear after they have retired.
- Review studies or reports to identify existing evidence of possible problem workplace and industries.
- Where problem workplaces are identified, press the company to report on possible risks and the controls in place, and where necessary to fund and cooperate with research.
- Organise an awareness campaign, highlighting risks and prevention strategies, and urging workers with possibly work-related cancers to contact the union.
GETTING STARTED

First steps for union reps

1 Identify possible cancer risks in the workplace. This is a job for the union health and safety representatives, the safety committee or a union-organised “cancer prevention” committee.

2 Insist substances or processes presenting a cancer risk are where possible removed and substituted with less hazardous substances or safer work methods. Set priorities for action. Union priorities for dealing with risks are in order: elimination; substitution; control; and if nothing else is possible, personal protective equipment such as masks or protective clothing.

3 Ensure workers with work-related cancers are given the support they need and receive any sickness or compensation payments to which they are entitled.

4 Ensure community support by making sure the public knows about air emissions and hazardous waste from the workplace that may be a cancer concern.

5 Don’t act alone – make sure the prevent cancer campaign has the support of the workforce and of the union in the workplace and at local and national levels.

Short-term response

When a work-related cancer risk is suspected in a particular workplace, a short-term investigation by union reps could include:

1 Gathering available evidence, for example death certificates or pension or sickness records, or industrial hygiene, health or media reports. List possible cancer risks in the workplace.

2 Analysis of the information by the local union – is there a suspicion that a workplace or a part of the workplace has more than expected numbers of cancers? Are there exposures in the workplace that could place workers at risk?

3 Where workers have been exposed to a possible cancer risk, it is important they receive regular medical check-ups that could detect cancer in its early stages.

4 Call on the government, safety authorities, the company, universities or supportive workers’ health groups to undertake more comprehensive studies when needed.

5 Ensure possible cancer risks are properly assessed – don’t accept assurances that exposures are at a “safe” level. And remember official exposure limits are not the same thing as a safe level.

6 Make sure the workplace is made safer – make recommendations for substitution, using less hazardous substances or processes, and for engineering controls.
Global

The International Labour Organisation (ILO) convention on occupational cancer makes clear, commonsense recommendations which could and should be followed everywhere. There’s good reason for occupational cancer to be an ILO priority — it says it is the top cause of work-related deaths worldwide, killing one person every 52 seconds.

The convention, C139, requires ratifying countries to:

- Periodically determine the carcinogenic substances and agents to which occupational exposure shall be prohibited or made subject of authorisation and control.
- Make every effort to replace carcinogenic substances and agents with non-carcinogenic and less harmful alternatives.
- Take measures to reduce to the minimum the number of workers exposed to carcinogenic substances, and the duration and degree of exposure and to establish an appropriate system of records.
- Ensure that workers who have been, are, or are likely to be exposed to carcinogens, are provided with information on dangers and relevant preventive measures.
- Organise medical surveillance of workers at risk, during and after employment.

By ILO’s estimate, one in every six workplace cancer deaths is caused by asbestos exposure. The ILO asbestos convention, C162, calls for action to minimise risks posed by asbestos.
A resolution agreed at ILO’s 2006 conference clarified the purpose of the asbestos convention. It said “the elimination of the future use of asbestos and the identification and proper management of asbestos currently in place are the most effective means to protect workers from asbestos exposure and to prevent future asbestos-related deaths.”

The 2006 resolution added that the convention “should not be used to provide a justification for, or endorsement of, the continued use of asbestos.” It instead called for efforts “to promote the elimination of future uses of all forms of asbestos and asbestos containing materials.”

ILO’s chemicals convention, C170, calls on employers to assess the exposure of workers to hazardous chemicals; monitor and record the exposures where necessary; and maintain adequate records and ensure they “are accessible to the workers and their representatives.”

ILO WEBSITE
ILO conventions: www.ilo.org/ilolex/ • ILO safety: www.ilo.org/safework
ILO workers’ section: www.ilo.org/ratify