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Health and Safety in the Electronics Sector

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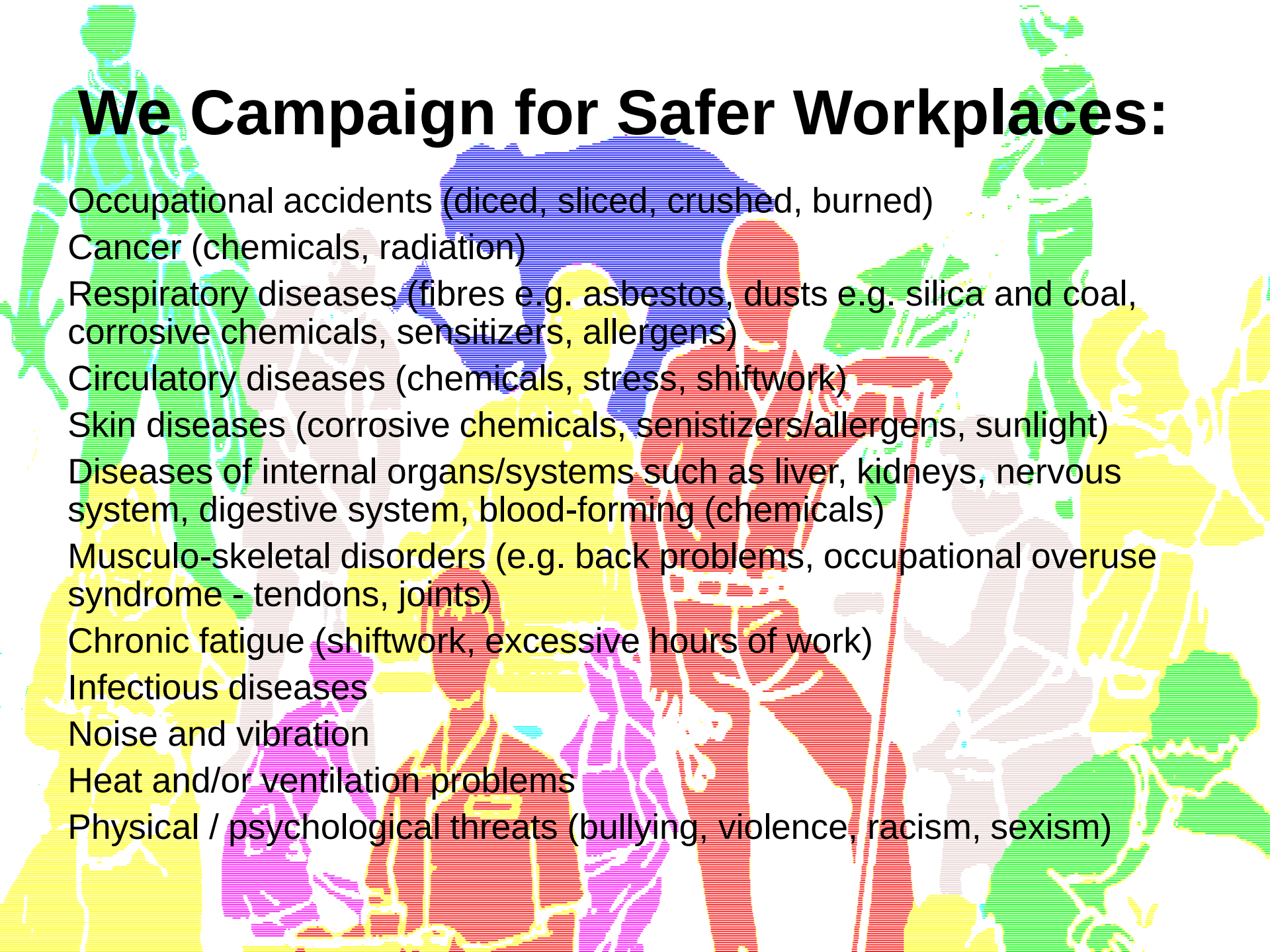
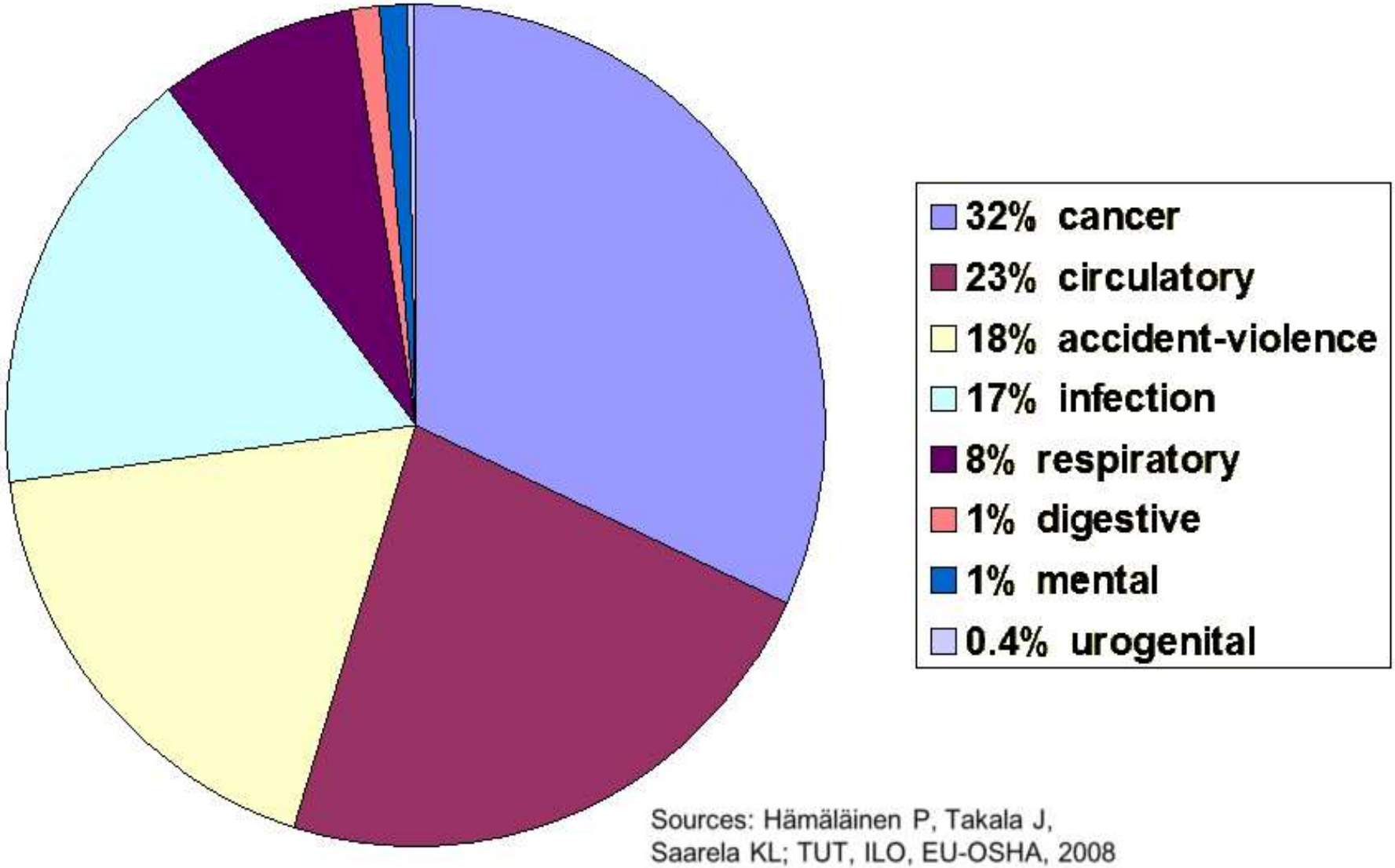
We Campaign for Safer Workplaces:



- Occupational accidents (diced, sliced, crushed, burned)
- Cancer (chemicals, radiation)
- Respiratory diseases (fibres e.g. asbestos, dusts e.g. silica and coal, corrosive chemicals, sensitizers, allergens)
- Circulatory diseases (chemicals, stress, shiftwork)
- Skin diseases (corrosive chemicals, senistizers/allergens, sunlight)
- Diseases of internal organs/systems such as liver, kidneys, nervous system, digestive system, blood-forming (chemicals)
- Musculo-skeletal disorders (e.g. back problems, occupational overuse syndrome - tendons, joints)
- Chronic fatigue (shiftwork, excessive hours of work)
- Infectious diseases
- Noise and vibration
- Heat and/or ventilation problems
- Physical / psychological threats (bullying, violence, racism, sexism)

World Occupational Deaths: 2.3 million per year



Sources: Hämäläinen P, Takala J, Saarela KL; TUT, ILO, EU-OSHA, 2008

Work-related diseases worldwide, estimated: 198–242 million work-related illnesses

Cancer alone:

region	total cancer deaths		occupation related		occupational cancer deaths		
	men	women	men	women	men	women	total
EU 27	623,709	481,307	13.6%	2.1%	85,106	10,177	95,581
world	3,872,766	3,062,008	9.6%				665,738

Source: presentation by Takala J, ILO, 2008

Underestimates

These statistics, shocking as they are, are gross underestimates:

- record only nationally accepted statistics, usually from workers' compensation
- occupational diseases under-diagnosed
- widespread suppression of accident reporting, or outright concealment

OHS is a matter of **3** RIGHTS:

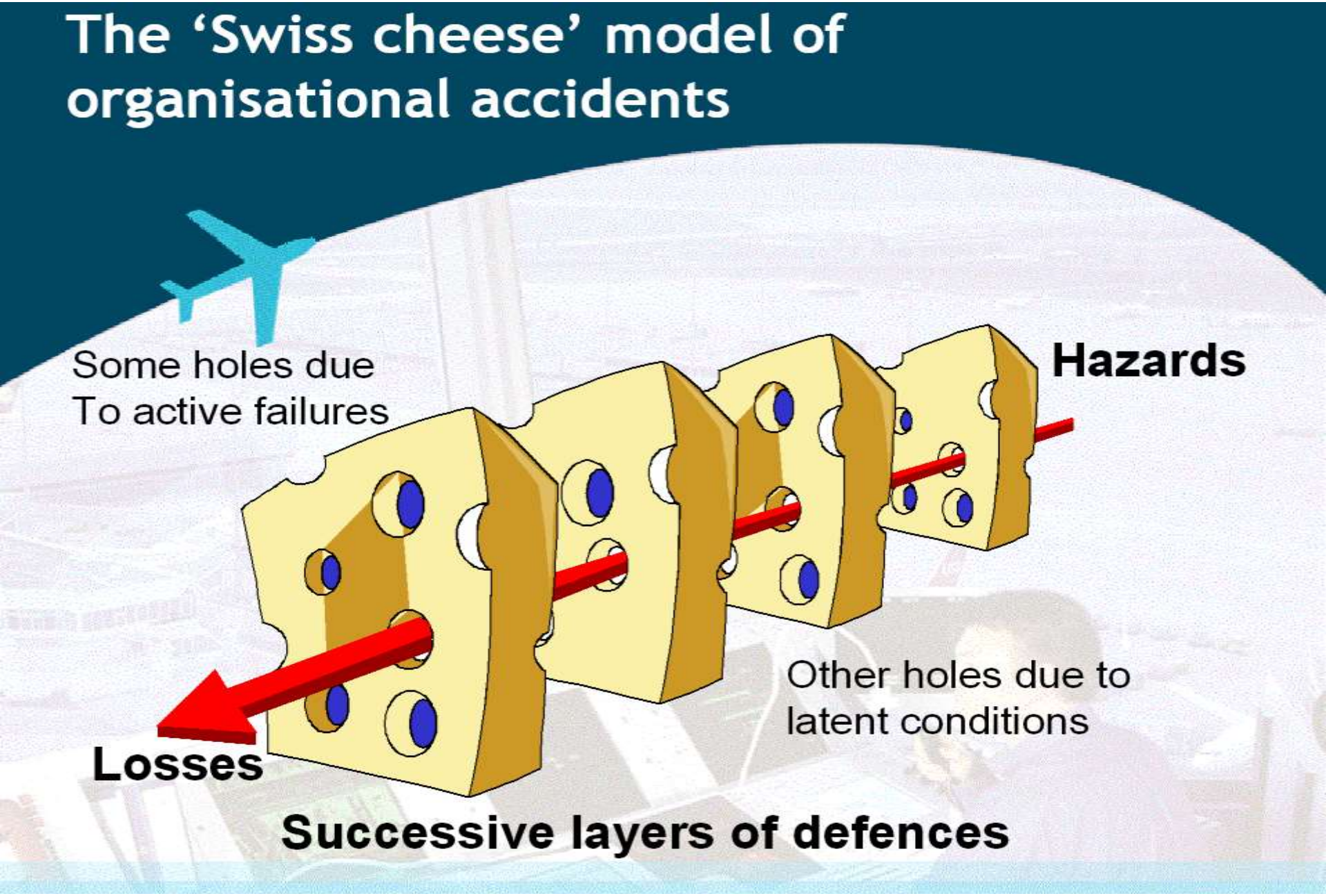
1. Right to Refuse or Shut Down …
all unsafe work.

2. Right to Participate …
fully and effectively, in all OHS policies, programmes and procedures, with the JHSC as the centrepiece of the OHS system.

3. Right to Know …
completely, wall-to-wall, about work hazards and receive the necessary education and training on how to do it safely.


Job / Task Design
Process Risk Management
Materials
Tools
Equipment
Process Integrity
SYSTEMS
Work Environment
Process Knowledge
Regulations
Standards / Codes
Management
Authority
Accountability
e.g. Capital Review
People
Human Factors
Training and Performance

The ‘Swiss cheese’ model of organisational accidents



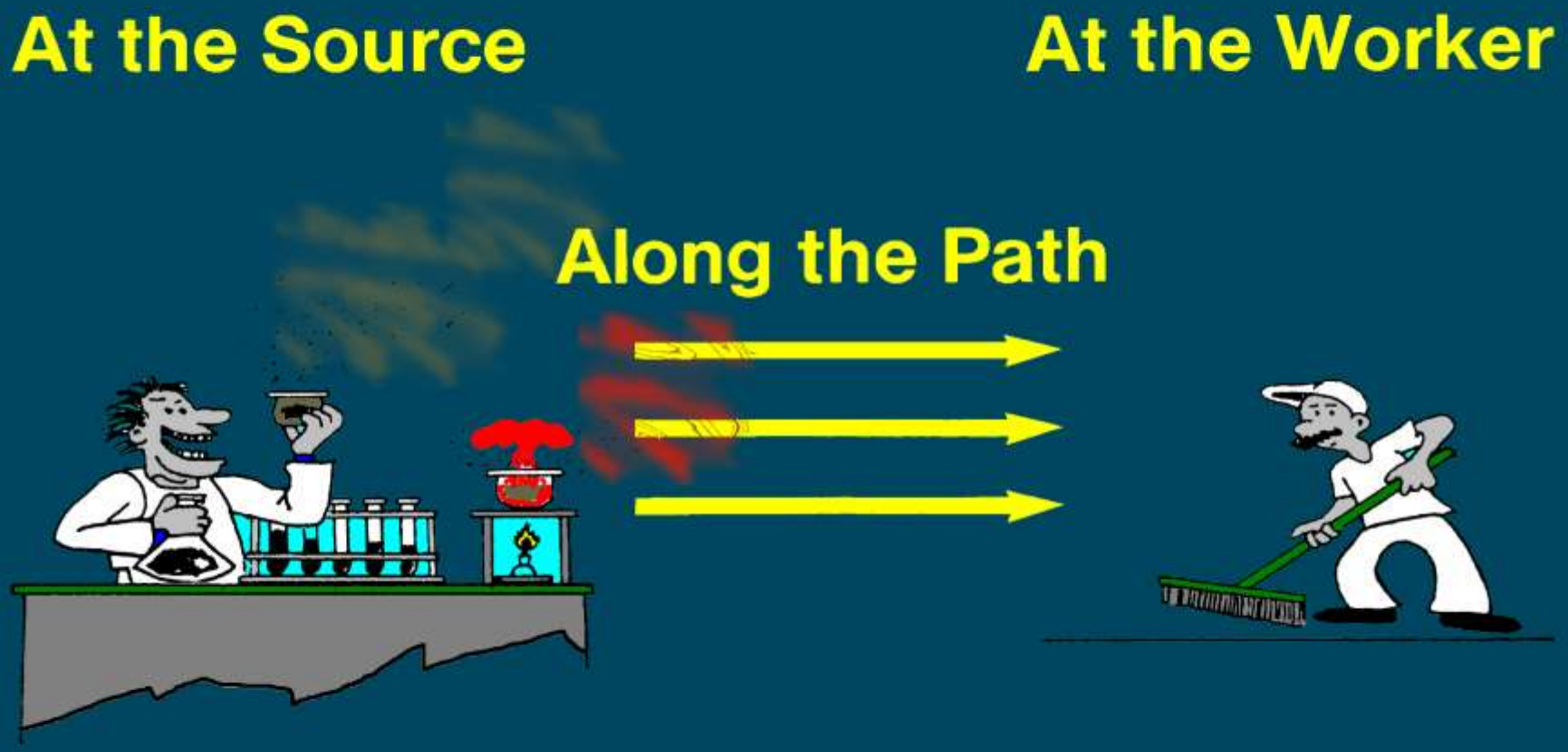
Behaviour-based safety ignores the system; focuses on the (careless) worker!

Health and Safety:
Present Experiences and Lessons

Continued drift from a rights-based and systems-based approach, towards a blame-the-worker behaviorist approach.

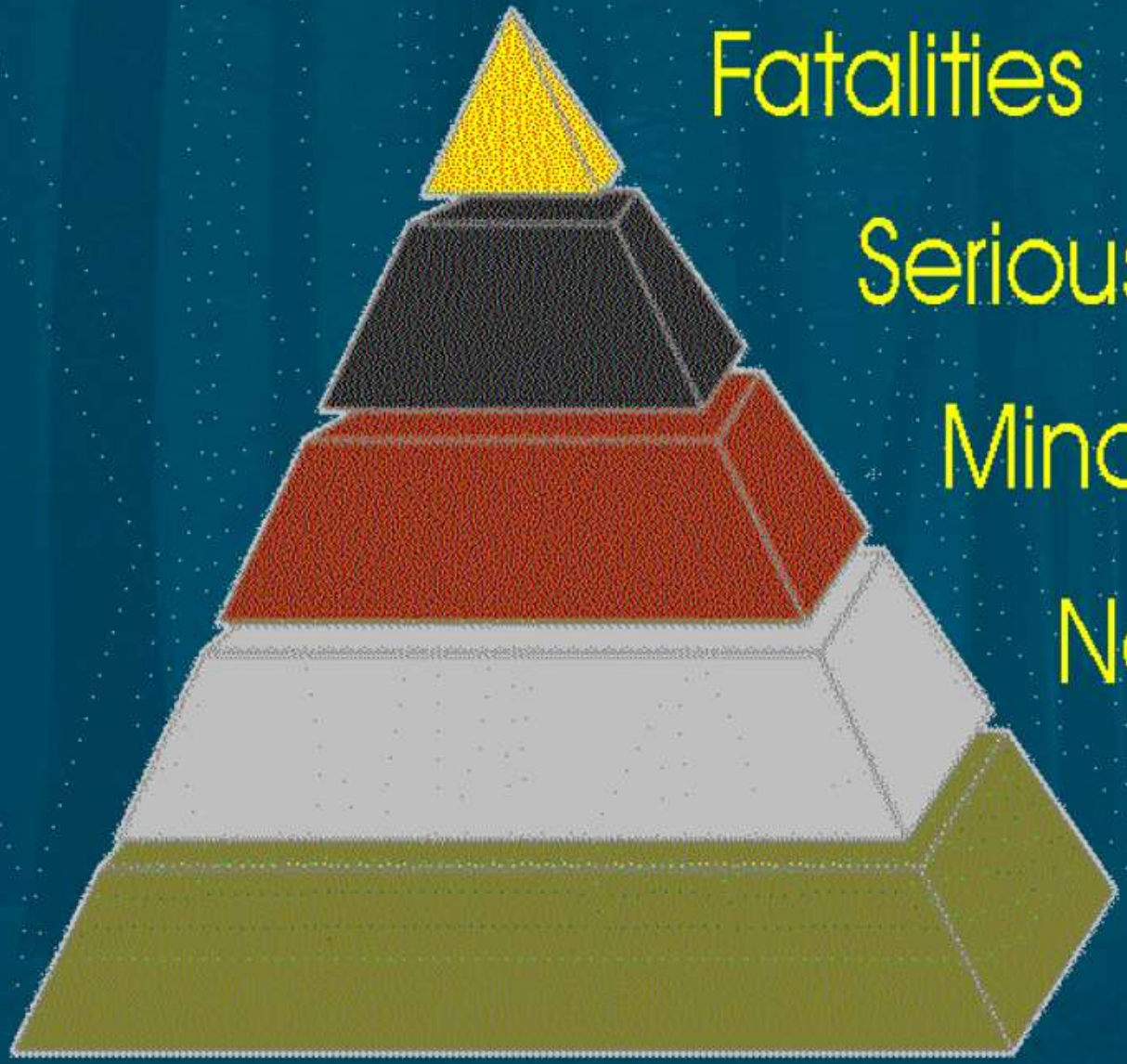
Worker behavior matters, but it’s not the main thing.

BBS Dismisses OHS Sciences



Industrial Hygiene Approach

"Safety Pyramid"



Fatalities

Serious Injuries

Minor Injuries

Near Misses

Unknown

Problem: historically management culture rewards risk-taking!

Risk Assessment / Acceptable Risk?

- **Acceptable: low likelihood and low consequence**
- **Intolerable: high likelihood and high consequence - risk cannot be justified**
- **ALARA: tolerable depending on perspective, resources, cost benefit, and recipient**

- **MORAL AUTHORITY: only those who must ultimately face the risk, have the moral authority to assess it !**
- **We demand that “risk assessment” be done WITH us, not TO us !**

IndustriALL Activities and Lessons:

- engage the ILO; global standard setting agencies – oppose behaviour-based safety
- challenge employers through Global Framework Agreements (GFAs)
- WHO, OHSAS, ISO, GHS, REACH, SAICM, Rotterdam, Basel, Stockholm, GRI, UNEP
- global campaigns e.g. ILO 176
- responses to catastrophes
- seminars and responses to inquiries

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Some features of the Electronics Sector

Chemicals and Toxicology

- Few of the hundreds of thousands of chemicals in use have been adequately characterized for their human health effects – even fewer for their environmental effects.
- REACH intended to partially address this.
- Greater interest in immunotoxicology (effects on the immune system) and neurotoxicology (effects on the nervous system).

SAICM - Strategic Approach to International Chemicals Management

- tripartite structure
- nonbinding, " ... by 2020 ... chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment"
- scope: risk reduction, knowledge and information, governance, capacity-building, and illegal international traffic.

GHS - Globally Harmonized System of Chemical Classification and Labelling

- UN initiative to harmonize various national and regional chemical classification and labelling systems such as EU, WHMIS ...
- Flaw: GHS adopted a "building block" approach to allow staged implementation by countries with limited resources. Instead being used by rich nations to
- "cherry pick" from the GHS.

Registration, Evaluation, Authorisation and Restriction of Chemical Substances - REACH

- European Community regulation on chemical testing and registration
- lead labour organization is IndustriALL Europe
- will force minimal toxicity testing on many chemicals, including those already in use
- because of the importance of the European chemical industry globally, this will have global implications

Cancer and Carcinogens

- The rate at which we identify and classify carcinogens is simply inadequate.

Genetics and Reproduction

- Three areas of concern are genetic effects and hormonal effects on reproduction, and effects on males.

Mutagens / Genotoxins

- Genotoxins - It is widely accepted that certain chemicals can cause genetic changes in humans that can in turn be passed on to children and cause disease. However, very few have been absolutely proven.

Endocrine Disruptors

- Widespread contamination of workplaces and the environment by compounds which disrupt the endocrine system. In particular, (due to chemical structure) estrogenic compounds.
- An estrogenic effect can be produced by mimicry, by enhancement of effect, by inhibition of the effects of androgens, etc.

Reproductive Hazards

- Most of the studies of adverse reproductive outcomes (birth defects, miscarriages, low birth weight) have focused on the pregnant woman's exposure to various hazards.
- Male reproductive system is also more vulnerable than previously realized.

Protective Re-assignment

- Foetus most vulnerable in first trimester when many women unaware of pregnancy. Damage may be severe by the time reassignment is obtained, yet may give a false sense of safety.
- An excuse to discriminate against women?
- Results in exposure of other workers: non-pregnant women, men.
- We support; but workplaces must be safe for ALL workers.

Allergies and Sensitization

- Asthmas in the workplace, multiple chemical sensitivities, allergic skin diseases, on the rise.
- Classical definition of sensitization: response mediated by the immune system. There is difficulty with this definition (according to the industry) because of "atopy“.
- Should a sensitizer be defined as a substance that can elicit an allergic response in the average person, or only in certain people?

Mineral Fibres

- Asbestos: the most well-documented industrial killer.
- Fibreglass and other synthetic mineral fibres are the main asbestos substitutes. While not risk-free (especially some specialized extremely fine fibre products), the evidence suggests that most are much safer than asbestos.

Medical Monitoring: Overestimated Usefulness

Health Problem - Medical Test - Predictive Power

Back problems - X-rays, strength tests - extremely poor
Cancer - various - poor but improving
Chemical burns - no test - not predictive
Chemical poisoning - blood, urine, tissue - rarely predictive
Hearing loss - audiometry - not predictive
Radiation effects - blood tests - not predictive
Heart disease - blood pressure, lipids - somewhat predictive
Tendon problems - no test - not predictive
Joint problems -X-rays - rarely predictive
Infectious disease - immunity - predictive for some diseases
Dermatitis - skin patch tests - sometimes predictive
Pneumonoconiosis - X-rays, lung function,
sputum cytology - not predictive

Biological Monitoring

- However, high-tech methods are coming. The production or inhibition of a metabolite or protein; cumulative damage to DNA, could provide a sensitive indicator of exposure to a toxic substance. Genetic screening is becoming more sophisticated, cheaper, more accessible. “Molecular epidemiology”
- There are serious ethical as well as scientific questions here.


LET'S TALK ABOUT YOUR ATTITUDE ON JOBS VERSUS THE ENVIRONMENT.
VERSUS?
SAUNDERS '98

Unions Make Work Safer: ILO Core Labour Standards

Freedom of association

- 1. Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87)
- 2. Right to Organize and Collective Bargaining Convention, 1949 (No. 98)

The abolition of forced labour

- 3. Forced Labour Convention, 1930 (No. 29)
- 4. Abolition of Forced Labour Convention, 1957 (No. 105)

Equality

- 5. Discrimination (Employment and Occupation) Convention, 1958 (No. 111)
- 6. Equal Remuneration Convention, 1951 (No. 100)

The elimination of child labour

- 7. Minimum Age Convention, 1973 (No. 138)
- 8. Worst Forms of Child Labour Convention, 1999 (No. 182)

Campaigning for Safer Workplaces: it is simple: the bottom line...

- Workers have rights …

  Employers have responsibilities !

- The Stronger the Union…

  The Safer the Workplace !

… Thank You!

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