Meeting Workplace Health and Safety Information Needs

AIHCE 2006

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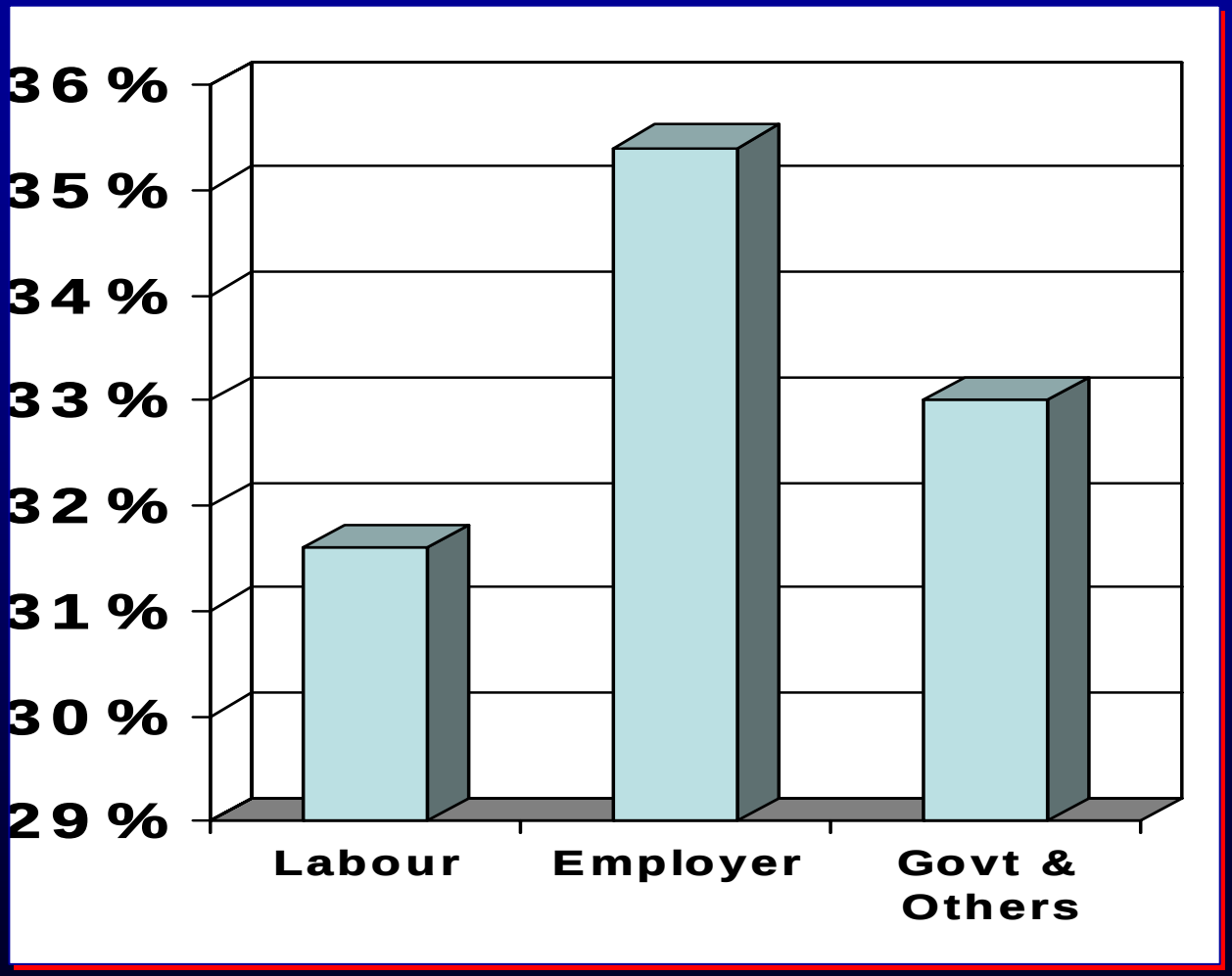
Hamilton, Canada

www.ccohs.ca

Source of Data

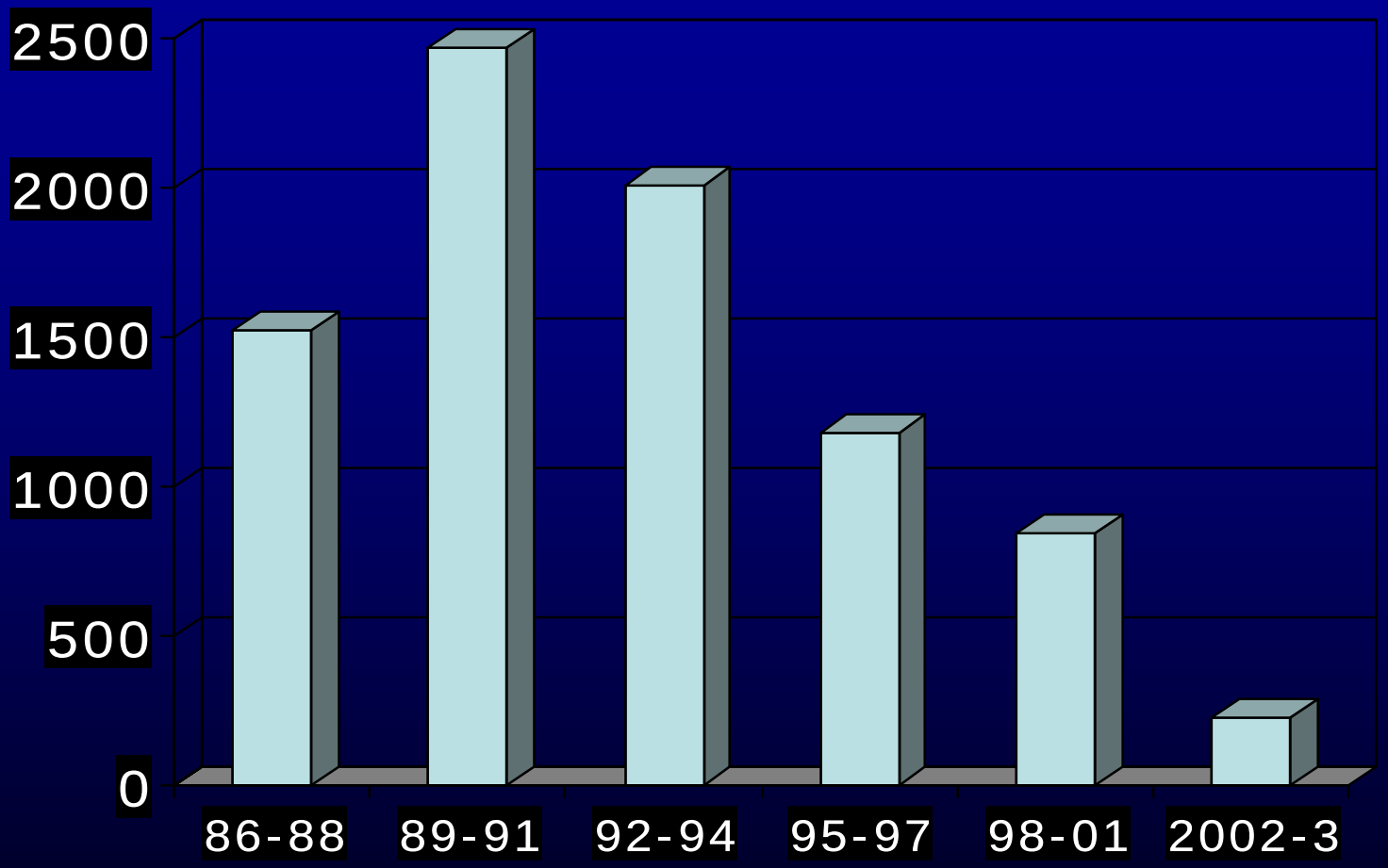
- Canadian Centre for Occupational Health and Safety has been answering OSH questions for over 20 years
- Over 250,000 questions answered
- Inquiries Service is available free to inquirers

Inquirers

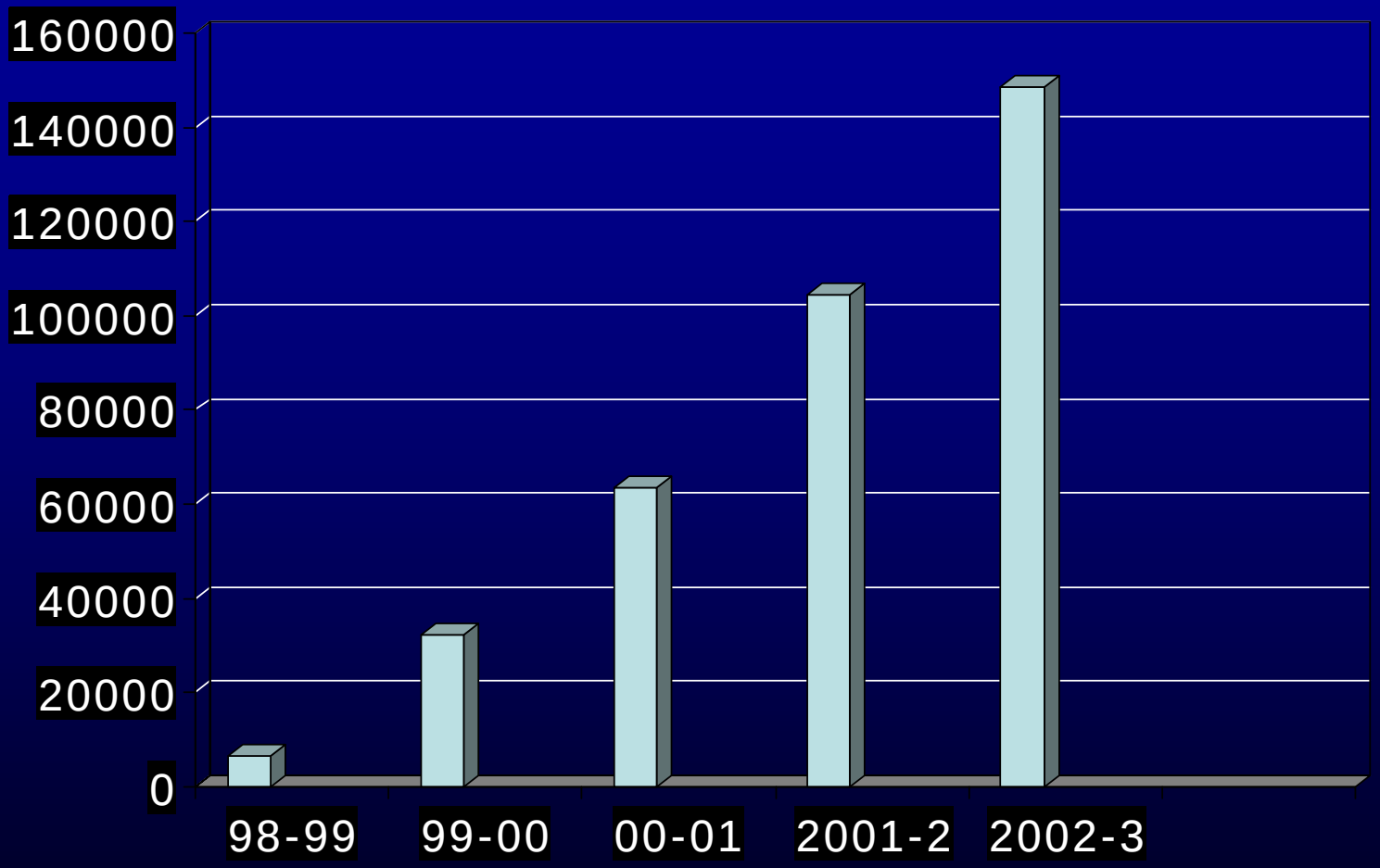


Example 1
Nonionizing Radiation

Number of NIR Inquiries



Web access: Physical Hazards Information



Typical Questions

- I am pregnant. Will my baby be affected by the power line EMF (ELF)?
- Can cell phones cause cancer?
- Will laser pointer make me blind?
- I live near power line; am I at risk of cancer?
- Is my breast cancer related to my computer work?

Triggers of Concern
News Media

"Exposure to the electric and magnetic fields around electrical power lines does not lead to an elevated risk of leukemia in children, according to a research study involving Canadian children……."

"The study did note that for children who lived within 100 metres of high-power transmission lines, the risk of leukemia was 81 percent above average."

Hamilton Spectator - April 27, 1999

NIH Publication 99-4493

"The NIEHS concludes that ELF-EMF exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard"

IARC Monographs (Vol. 80) (19–26 June 2001)

"Overall, extremely low frequency magnetic fields were evaluated as possibly carcinogenic to humans (Group 2B)"

http://193.51.164.11/htdocs/announcements/vol80.htm

Basis of EMF Exposure Limits

- Stimulation of peripheral nerves and muscles,
- Functional changes in the nervous system and other tissues,
- Shocks and burns caused by touching conducting objects,
- Changes in behavior caused by elevated tissue temperatures.

Source: ICNIRP Guidelines

ICNIRP Guidelines

Frequency Range (f)	Electric Field (E) (V/m)	Magnetic Field (H) (A/m)	Power Density (S) (E;H Fields) (mW/cm^2)
<1 Hz	—	163 x 10^3	—
1 - 8 Hz	20,000	163 x $10^3/f^2$	—
8 - 25 Hz	20,000	2.0 x $10^4/f$	—
0.025 - 0.82 kHz	500/f	20/f	—
0.82 - 65 kHz	610	24.4	100; 22,445
0.065 - 1 MHz	610	1.6/f	100; $100/f^2$
1 - 10	610/f	1.6/f	$100/f^2$
10 - 400 MHz	61	0.16	1.0
400 - 2,000 MHz	$3f^{½}$	$0.008f^{½}$	f/400
2 - 300 GHz	137	0.36	5.0

1 A/m = 12.5 mG, ACGIH : 1mT=10G at 60 Hz

- Many occupational exposures are well below the current exposure limits recommended by standard setting organizations.

- Most Inquires Worry About the Risk of Cancer

Cancers: ELF Research Findings

Floderus, 1993

CLL*	OR = 2.21; > 2 mG
	OR = 3.8; > 2.9 mG
Brain Tumors	OR = 1.47 > 2 mG

Theriault, 1994

ANLL*	OR = 2.41; > 31 mG-y
AML*	OR = 2.36; > 2 mG

Feychting 1993

Childhood Leukemia*	RR = 3.8; > 3 mG

Example 2
Indoor Air Quality

Triggers of Concern: News Media

"Why is this government failing to do anything about this?" said Liberal health critic Kevin Taft. "People die from these moulds. This has a Walkerton ring to it. We already have reports of people being sick."

Wendy-Anne Thompson, MLA fears fatal mould problem. , Calgary Herald, 06-27-2003, pp B5.

The Information Challenge

Demand for Clear “Yes” or “No” Answer

Often conflicting Scientific Results

No Exposure Guidelines

Anxiety Among Exposed People

Concerned Families

Often the Scientific Community is Divided

CCOHS Approach in Meeting Information Needs

Empower: explain the current status of scientific knowledge

Encourage: make judgment considering scientific, social and economic factors

Give options: minimize exposure / risk

Ingredients for Success

- Truth
- Open communication
- Trust
- Respect
- Care / Comradeship
- Empowerment
- Common goals
- Team spirit
- Continuous improvement

Conclusion

In spite of conflicting scientific opinion, we must inform people about:

- Potential / Actual hazards
- How to minimize risk
- Need standard message phrases?