



Problematic beryllium: current situation in Québec

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CSST

La prévention,
j'y travaille
depuis **25!**
ans

Presentation outline

- Where is beryllium found?
- Main findings
- Action plan
- CSST Board of Directors Technical Committee on Beryllium
- Conclusion

CSST

- A public insurance company
- That manages the Québec health and safety plan through:
 - Prevention
 - Compensation
 - Financing
- For the benefit of its clients: workers and employers
- Board of Directors: 7 representatives of employers, 7 representatives of workers, and Chairman-CEO
- Board of Directors Technical Committee on Beryllium

CSST

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Where is beryllium found?

	Activity sectors	Number of establishments
1	Foundries	96
2	Metal recycling	146
3	Aerospace industry, aeronautics	159
4	Manufacturers of material found in electrical and electronic components	401
5	Businesses active in the manufacturing or welding of non-ferrous alloys	1 220
6	Environment industry (processing and recycling of waste)	327
7	Manufacture of dental prostheses	294
8	Distributors and manufacturers of welding electrodes	68
9	Golf club manufacturing businesses	63
10	Businesses manufacturing competition bicycles	15
	Total	2 789

Main findings

- First case of chronic berylliosis (fall 1998)
- Lack of knowledge about the situation in general and in the workplace
- Inadequate occupational exposure standard

Main findings (cont.)

- Known preventive measures
- Limited existing expertise
- Non-availability of laboratory analysis services

Action plan

■ Our partners:

- Institut de recherche Robert-Sauvé en santé et en sécurité du travail
- Ministère de la Santé et des Services sociaux
- Development agencies of local health and social service networks
- Institut national de santé publique du Québec
- Joint sector based associations concerned

Action plan

■ Objectives:

- Prevent any damage of health of workers exposed to beryllium
- Enrich our knowledge
- Inform, support and advise the interveners and clientele concerned
- Revise the acceptable exposure value
- Compensate workers

Action plan

■ A few achievements

- Self-evaluation grid of conditions in the workplace
- Specific intervention strategy for each sector and training of interveners
- Training program for employers and workers
- Be environmental sampling method

Action plan

- **A few achievements ...**
 - Availability of the beryllium lymphocyte proliferation test (BeLPT)
 - BeLPT test user's guide
 - Summary document on good practices in the field of cleaning and decontamination the workplace
 - Communication tools

Action plan

■ Progress by activity sector

■ Covered:

- 2001-2002: Foundries and other establishments where foundry operations are carried out (123 establishments)
- 2003: Aerospace and aeronautics (133 of the 159 establishments)
- 2004: Environment industry (75 of the 327 establishments)

Action plan

■ Progress by activity sector ...

■ Under way:

- 2005-2006: Non-ferrous alloys manufacturing sector (1182 establishments)

■ Still to come:

- The other six sectors initially designated (about 1000 establishments) and the other sectors identified during the operation

Action plan

- Situation in the foundries sector (123 establishments)
 - Exposure of workers: **13 074** workers in **44** establishments where there is Be
 - **506** workers exposed to Be or likely to be exposed $\geq 0,2 \mu\text{g}/\text{m}^3$ (action level)
 - **12 568** workers exposed to Be or likely to be exposed $< 0,2 \mu\text{g}/\text{m}^3$ (action level)

Action plan

- Findings ...
 - Interventions in **all** of the establishments where the presence of Be was confirmed and more specifically where:
 - The occupational exposure level was greater than the action level
 - At least one compensation claim was evaluated

Action plan

■ Findings

■ **No establishment** in which there is Be applies all of the preventive measures required by the regulation, i.e.:

- Technical control measures
- Safe work methods
- Hygiene and individual protection
- Training of workers

Action plan

■ Results of the interventions

- Taking charge of occupational health and safety by establishment
 - Review of prevention and health programs that are specific to the establishment
 - Preparation of action plans in the establishment
- Interventions specific to inspectors
 - Observation of cases of non-compliance and application of coercive measures

Action plan

- Improvements observed based on inspectors' reports
 - Use of Be discontinued
 - Replacement of products containing Be
 - Decontamination of workplaces and equipment
 - Confinement of the workplaces
 - Installation and modification of local and general ventilation systems

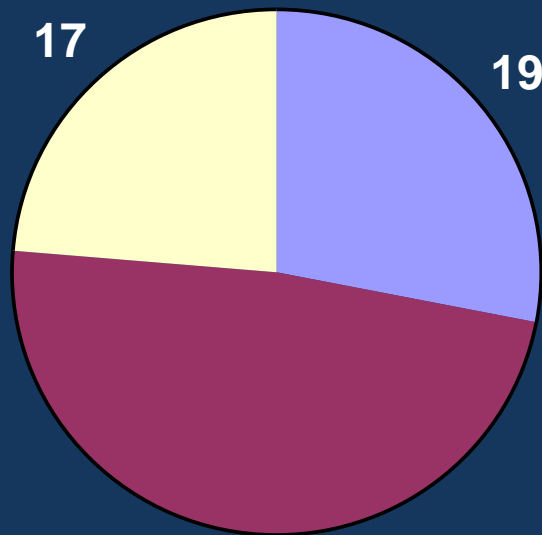
Action plan

- **Improvements observed ...**
 - Revision of work procedures and methods
 - Installation of double change rooms in accordance with the regulation
 - Availability of adequate protective respiratory equipment
 - Lowering of worker exposure

Action plan

- **Results obtained in the aeronautics sector**
 - Drafting of the report under way
- **Results obtained in the environment industry sector**
 - Report still to come

BERYLLIOSIS



■ Chronic beryllium disease

■ Sensitized

■ Sub-clinical beryllium disease

BERYLLIOSIS

Cases

Negative

Sensitized

1



2



3



4



Board of Directors Technical Committee on Beryllium

- **Committee's recommendation on the acceptable exposure value**
 - Lowering of the time-weighted average exposure value to beryllium from $2 \mu\text{g}/\text{m}^3$ to $0.15 \mu\text{g}/\text{m}^3$
 - Use of an action level of $0.1 \mu\text{g}/\text{m}^3$

Board of Directors Technical Committee on Beryllium – Double change room

Vestiaire double contigu à une zone de travail contaminée

1 Enlever ses vêtements de ville.

Mettre ses vêtements de travail propres.
Mettre les équipements de protection.
Inspecter son appareil de protection respiratoire, le mettre et l'ajuster.

2 Traverser la salle des douches.

3 S'il y a lieu, mettre les équipements de protection réutilisables, (casque, bottes, gants, etc.).

4 Accéder à la zone de travail.

5 Sortir du lieu de travail directement par le vestiaire pour les vêtements de travail.

6 Respecter la séquence :

- Garder son appareil de protection respiratoire.
- Avant d'enlever ses vêtements de travail, les nettoyer à l'aide d'un aspirateur muni d'un filtre à haute efficacité.
- Enlever ses vêtements de travail sauf son appareil de protection respiratoire.
 - S'ils sont réutilisables, les déposer dans le bac rempli d'eau.
 - S'ils sont jetables, les déposer dans le sac prévu à cette fin.
- Ranger les équipements de protection réutilisables tels que casque, bottes, gants, etc. qui restent dans la zone contaminée; pour les sortir de la zone contaminée, les laver ou les nettoyer à l'aide de l'aspirateur.

7 Laver :

- son appareil de protection respiratoire.
 - S'il est réutilisable, enlever les cartouches, les déposer dans le sac prévu à cette fin et laver la pièce faciale sous la douche avant de l'enlever.
 - S'il est jetable, le déposer dans le sac prévu à cette fin.
- son corps et ses cheveux.

8 Revêtir ses vêtements de ville.

Ranger la pièce faciale de son appareil de protection respiratoire.



*Zone contaminée par l'amiante, le béryllium, le mercure ou le plomb sous forme de vapeurs, de fumée ou de poussières (RSPT, article 67)

Conclusion and recommendations

- Confirmation of the existence of a problematic situation in the foundries sector
- Continuation of the Be operation in the other sectors
 - Exposure of workers
 - Preventive measures

Conclusion and recommendations

- Promote employer awareness about the need to convey information to subcontractors
- Set up a specialized web site on beryllium
- Monitor the evolution of knowledge
- Revise the sectors to cover