Voluntary Incident Reporting

Exposure and non-exposure incidents involving human pathogens and toxins (HPTs) that are not mandated under the *Human Pathogens and Toxins Act* (HPTA) and its *Regulations* (HPTR) can be submitted to the Public Health Agency of Canada voluntarily. These incidents are summarized below.

Results

213 voluntary laboratory incidents reported:

- **139 exposure reports** (including 1 suspected and 1 confirmed laboratory-acquired infection [LAI] and 16 ruled out cases)
- **74 non-exposure reports** (including 56 inadvertent possessions/productions, 13 inadvertent releases, 3 stolen biological agents, 1 missing or lost biological agent and 1 security sensitive biological agent (SSBA) not received within 24 hours of expected arrival)

Main Activities

The most common activity at the time of an **exposure** incident was **microbiology** (**43.9%**). For **non-exposure** incidents, **identification microbiology** activities were most common (**39.7%**).

Sectors

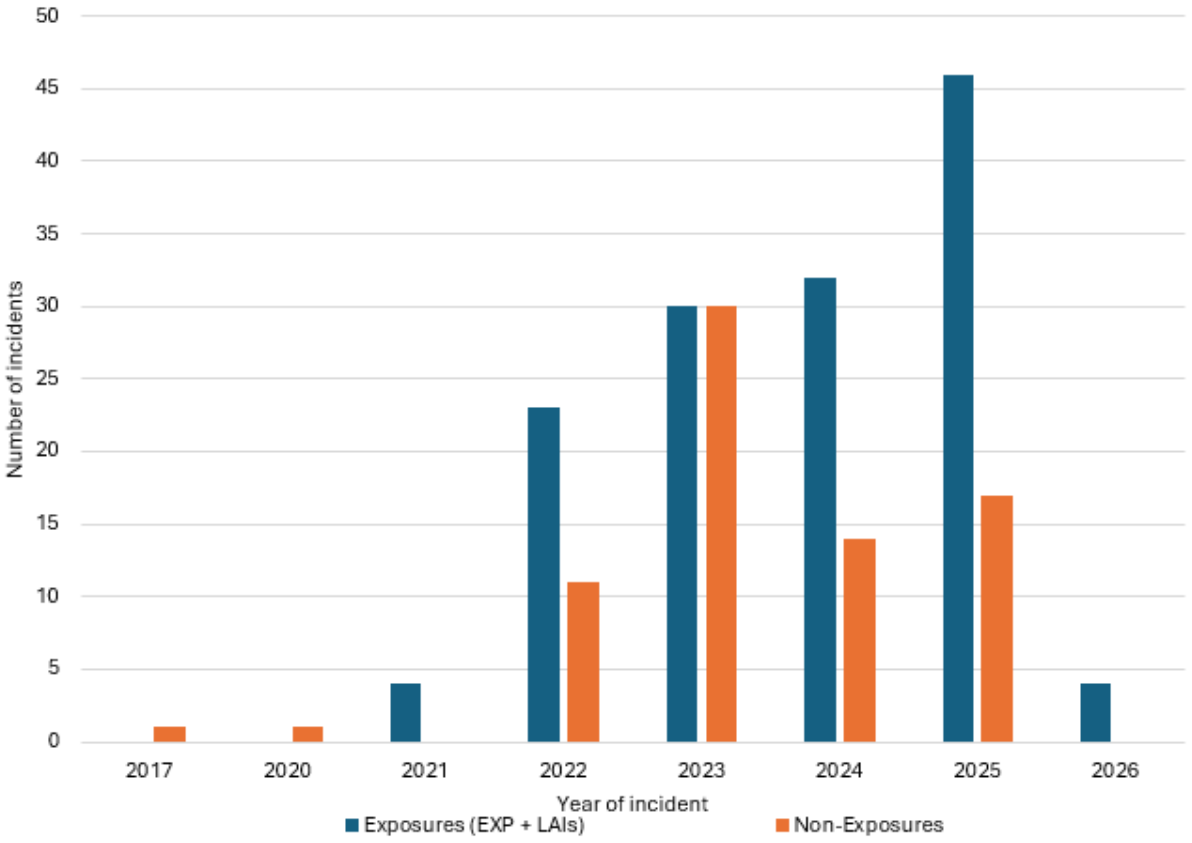
66 exposure incidents were reported from the **hospital** sector (**47.5%**) and **32** from the **academic** sector (**23.0%**).
39 non-exposure incidents were reported from the **hospital** sector (**53.4%**) and **13** from both the **academic** and **private** sector (**17.8%** each).

Root causes of exposure

From a total of **264** root causes citations, the most common were **human factors** (**26.5%**), **standard operating procedures** (**18.2%**) and **training** (**15.2%**). This mirrors the top cited root causes in mandatory exposure reports in 2025.

Occurrence types

181 occurrence types were identified in exposure incidents.
The most common occurrence types were related to **procedures** (**23.8%**), **spills** (**14.9%**) and **other** (**20.4%**) occurrence types involving inadvertent possession.



Note: Facilities have been able to report voluntarily since November 2021. Incidents dated before 2021 were retroactively reported.

What constitutes a voluntary report?

Incidents not mandated under the HPTA and HPTR include:

- Incidents involving Risk Group (RG) 1 pathogens
- Exposures or laboratory-acquired infections involving pathogens/toxins in their natural environment or primary samples (e.g. blood, serum, saliva, milk, urine; not cultured or processed)
- Incidents occurring in facilities exempt from licence requirements

Affected persons (N=306)

An average of **2.20** people were affected per exposure incident. Most were **technologists/ technicians** (**n=249; 81.4%**) and exposed via **inhalation** (**n=159; 52.0%**).

Implicated pathogens

In Exposure incidents

There were **104** known HPTs and **46** unknown HPTs implicated.

- **75** HPTs (**50%**) were **non-SSBAs**. Of these, **14** (**9.3%**) were **RG1**, **36** (**24.0%**) were **RG2** and **25** (**16.7%**) were **RG3**.
- **29** HPTs (**19.3%**) were **SSBAs** which were all **RG3**.
- The most implicated agent type in **RG1** HPTs were **cell lines** (**2.7%**) and **bacteria** (**2.0%**).
- The most implicated agent types in **RG2** HPTs were **bacteria** (**14.7%**) and **viruses** (**6.0%**).
- The most implicated agent types in **RG3** HPTs were **bacteria** (**17.3%**), **prions** and **viruses** (**7.3% each**).

The most common pathogens were ***Neisseria meningitidis*** (**8.7%**) and **Creutzfeldt-jakob disease agent** (**7.3%**).

In Non-Exposure incidents

There were **92** known HPTs and **17** unknown HPTs implicated.

- **76** HPTs (**69.7%**) were **non-SSBAs**. Of these, **15** (**13.8%**) were **RG1**, **31** (**28.4%**) were **RG2** and **29** (**26.6%**) were **RG3**.
- **16** HPTs (**14.7%**) were **SSBAs**. Of these, **15** (**13.8%**) were **RG3** and **1** (**0.9%**) was **RG4**.
- The most implicated agent type in **RG1** HPTs was **bacteria** (**11.9%**).
- The most implicated agent types in **RG2** HPTs were **bacteria** (**19.3%**) and **fungi** (**3.7%**).
- The most implicated agent types in **RG3** HPTs were **bacteria** (**14.7%**) and **fungi** (**13.8%**).
- The **RG4** was a **virus**.

The most common pathogens were ***Mycobacterium tuberculosis*** (**9.2%**) and **Creutzfeldt-jakob disease agent** (**6.4%**).

Comparison: Voluntary and mandatory incident reports

Similarities were found between the most cited main activity, sector, root cause, occurrence type, affected person's role and route of exposure in voluntary and mandatory incident reports. A greater proportion of RG3 pathogens were implicated in the voluntary incidents compared to the mandatory incidents because they were related to primary samples or pathogens unknown at the time of the exposure during diagnostic activities.

Why is voluntary reporting important?

Voluntary reporting allows a broader range of incidents to be captured, including events outside regulatory requirements that might otherwise go unreported. By sharing these experiences, facilities contribute to a more complete understanding of biosafety risks and help inform the Public Health Agency of Canada's targeted prevention strategies. Contact PHAC at biosafety-biosecurite@phac-aspc.gc.ca if you have more questions.