PICNet
PROVINCIAL INFECTION CONTROL NETWORK OF BRITISH COLUMBIA
A program of the Provincial Health Services Authority

Provincial Health Services Authority

Quarter one (Q1) of 2024/25 (April 1 – June 20, 2024)

Quarterly Surveillance Report

Please read the technical notes at the end of this report for definitions, methodology and considerations for interpretation of results

fraserhealth
Better health. Best in health care.

Interior Health

island health

northern health
the northern way of caring

Providence Health Care
How you want to be treated.

Vancouver CoastalHealth

PICNet wishes to acknowledge with gratitude that we work and live on the traditional, ancestral and unceded territories of many B.C. First Nations who have cared and nurtured this land for all time.
PICNet's office in Vancouver is located on the traditional land of the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish), and səlilwətaɬ (Tsleil-Waututh) Nations.
We also acknowledge that there are other Indigenous people that live on these lands that originate from their own respective territories outside of these lands, the Chartered Communities of the Métis Nation B.C., and Inuit.

Quarter one (Q1) of 2024/25 (April 1 – June 20, 2024)

Clostridioides difficile Infection (CDI)

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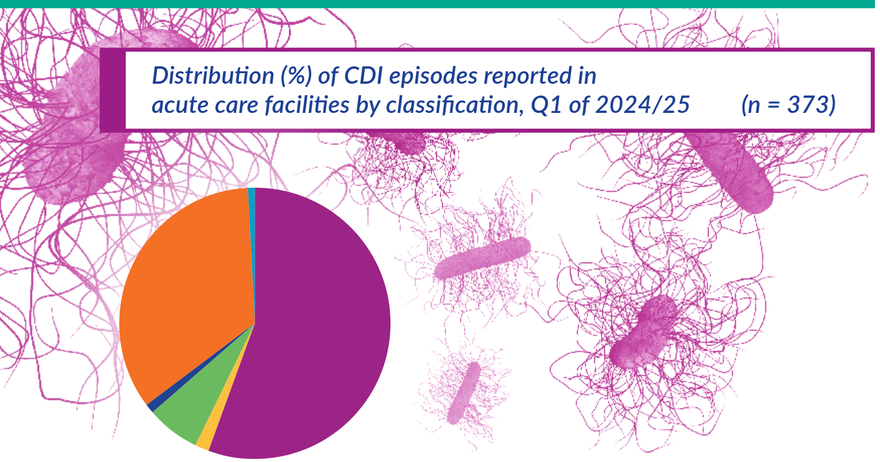
CDI is the most common health care-associated infection. CDI typically causes diarrhea and mostly occurs during or soon after treatment with antibiotics or among people who are immunocompromised.

New cases and relapses identified among inpatients in acute care facilities are under provincial surveillance.

Distribution (%) of CDI episodes reported in acute care facilities by classification, Q1 of 2024/25 (n = 373)



55.8%	New cases associated with the reporting facility
1.6%	New cases associated with another facility
6.4%	Relapses associated with the reporting facility
1.1%	Relapses associated with another facility
34.3%	Community-associated
0.8%	Unknown origin

HIGHLIGHTS

2.7 per 10,000 inpatient days

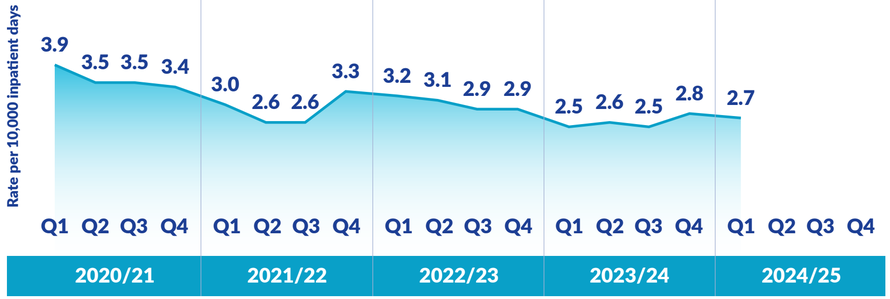
Quarterly provincial rate of new CDI cases associated with the reporting facility

Provincial rates of CDI have increased

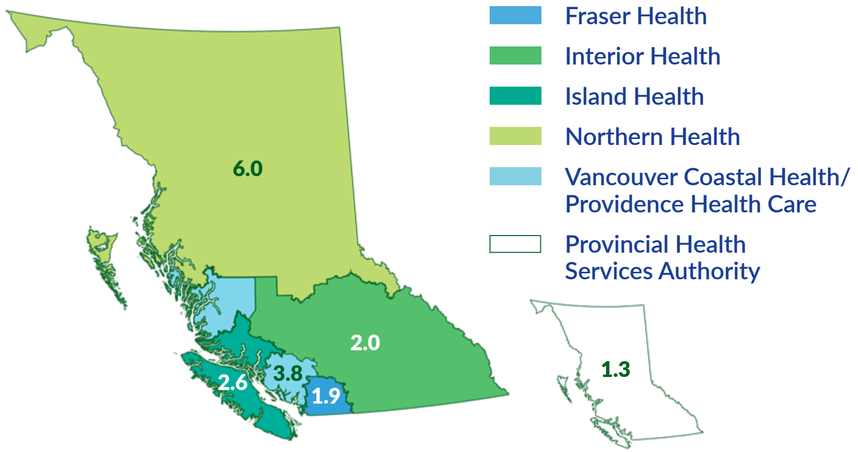
from 2.5 to 2.7 per 10,000 inpatient days since the same quarter last year

55.8% of CDI episodes were new cases associated with the reporting facility

Provincial rate of new CDI cases associated with the reporting facility, by fiscal year and quarter, 2020/21 – 2024/25



Rate of new CDI cases (per 10,000 inpatient days) associated with the reporting facility by health authority, Q1 of 2024/25



Comparisons across health authorities should be avoided due to variations in applying the provincial surveillance protocol, case finding strategies, patient demographics and risk profile and services provided.

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Methicillin-Resistant *Staphylococcus aureus* (MRSA)

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MRSA is a type of bacteria that is resistant to many antibiotics. MRSA often lives on the skin or in the nose of healthy people without causing symptoms (colonization). It can, however, cause pneumonia, bloodstream infections, surgical site infections, and other infections associated with invasive medical procedures and devices.

MRSA cases (colonization or infection) identified for the first time from inpatients in acute care facilities are under provincial surveillance.

Distribution (%) of new MRSA cases reported in acute care facilities by classification, Q1 of 2024/25 (n = 554)

- **44.4%** Associated with the reporting facility
- **19.5%** Associated with another facility
- **26.5%** Community-associated
- **9.6%** Unknown origin

HIGHLIGHTS

3.1 per 10,000 inpatient days

Quarterly provincial rate of new MRSA cases associated with the reporting facility

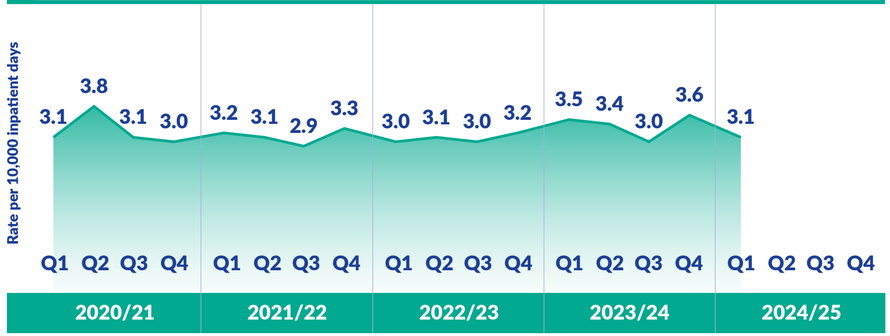
Provincial rates of MRSA have decreased

from 3.5 to 3.1 per 10,000 inpatient days since the same quarter last year

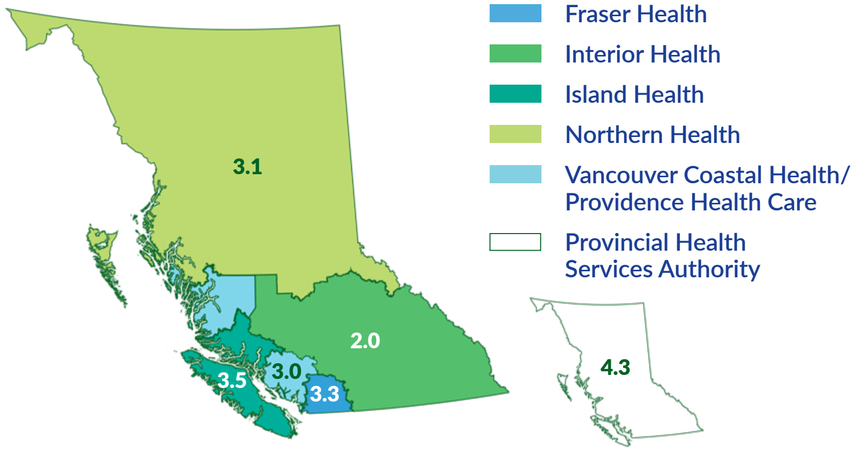
44.4%

New MRSA cases associated with the reporting facility

Provincial rate of new MRSA cases associated with the reporting facility, by fiscal year and quarter, 2020/21 – 2024/25



Rate of new MRSA cases (per 10,000 inpatient days) associated with the reporting facility by health authority, Q1 of 2024/25



Comparisons across health authorities should be avoided due to variations in applying the provincial surveillance protocol, case finding strategies, patient demographics and risk profile and services provided.

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Carbapenemase-Producing Organisms (CPO)

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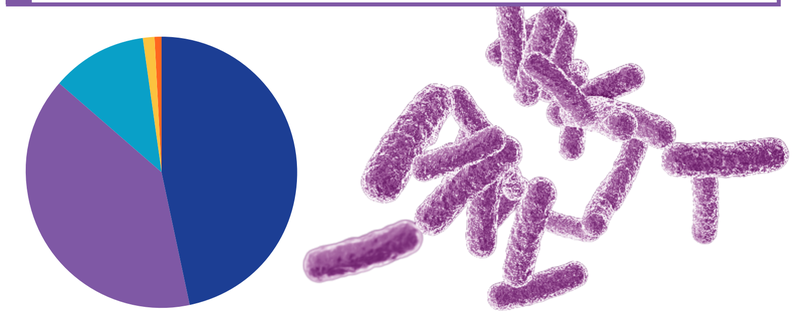
CPO are bacteria often naturally found in the gut that have become resistant to carbapenems, a class of broad spectrum antibiotics usually reserved to treat serious infections when other antibiotics have not worked. When spread from the gut to other parts of the body such as the blood, lungs, or bladder, these multi-drug-resistant bacteria can cause infections that are difficult to treat.

Each carbapenemase gene newly identified from a given patient with CPO colonization or infection is considered a new case. CPO cases are reportable to public health in B.C.

Distribution (%) of new CPO cases by gene classification, Q1 of 2024/25 (identified from 119 new patients) (n = 141)



46.8% OXA-48
39.7% NDM
11.3% KPC
1.4% Other
0.7% IMP

HIGHLIGHTS

141 new cases

- Identified from 119 patients
  - 98 patients harboured 1 gene
  - 20 patients harboured 2 genes
  - 1 patient harboured 3 genes
- 115 new cases had surveillance information

OXA-48

Most commonly identified gene

45 out of 115 cases

(With surveillance information available)

Had a previous encounter with a health care facility in B.C.

**With surveillance information available*
***Exposures are not mutually exclusive*

Comparisons across health authorities should be avoided due to variations in population at risk and screening policy for CPO.

*Number of new CPO cases with available surveillance information, identified in health care facilities, Q1 of 2024/25 (n = 115 cases)**

Setting	Number of new cases identified
Acute care by health auth.	
Fraser Health	73 — OXA-48 43, NDM 27, KPC 3
Interior Health	5 — NDM 3, OXA-48 2
Island Health	3 — KPC 3
Northern Health	1 — KPC 1
Vancouver Coastal Health/ Providence Health Care	22 — NDM 11, OXA-48 8, KPC 3
PHSA	4 — OXA-48 3, NDM 1
Community care	7 — NDM 4, KPC 2, OXA-48 1

*Exposure information** for new CPO cases, Q1 of 2024/25 (n = 115 cases)**

Exposures in the previous 12 months	Number of cases
Previous encounter with a health care facility in B.C.	45
Travel outside of Canada	72
Health care encounter outside of Canada	41
Transmission investigation in the reporting facility	6
Contact with a known CPO case	9
No exposures reported	17

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Hand Cleaning Compliance

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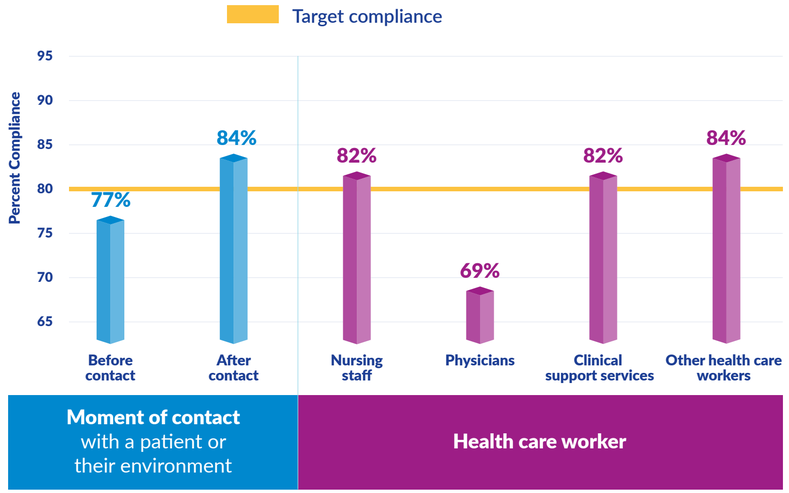
Improving hand cleaning compliance among health care workers is key to reducing health care-associated infections. Reporting on compliance provides transparency to the public and assists health care facilities in quality improvement.

Hand cleaning compliance in acute care facilities by moment of contact and health care worker, Q1 of 2024/25



HIGHLIGHTS

Overall provincial hand cleaning compliance:

81% in acute care

78% in long-term care

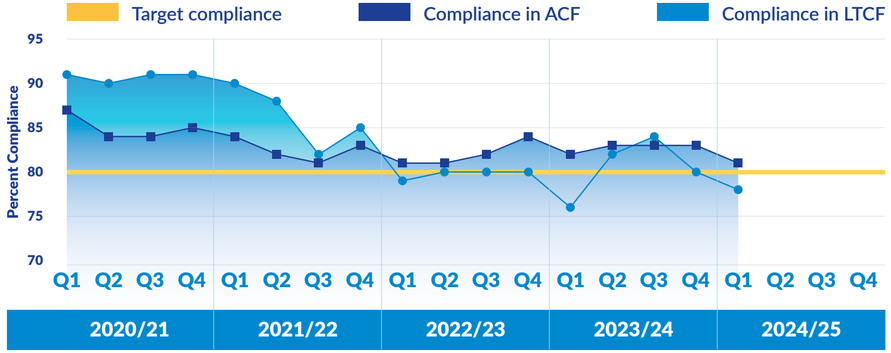
77% compliance **before contact** with the patient

84% compliance **after contact** with the patient/patient environment

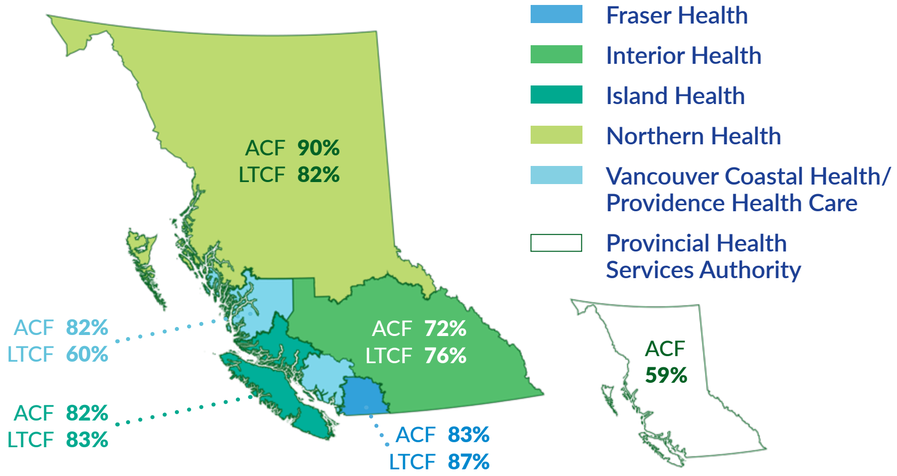
Hand cleaning compliance was **lowest for physicians at 69%**

Comparisons across health authorities and facility types should be avoided due to potential observer bias, Hawthorne effect, and variations in audit methods.

Provincial hand cleaning compliance among health care workers in acute care facilities (ACF) and long-term care facilities (LTCF) by quarter and year, 2020/21 – 2024/25



Hand cleaning compliance by health authority, Q1 of 2024/25



Technical Notes

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1. The provincial surveillance program for infection prevention and control (IPC) is a collaboration between PICNet and B.C. health authorities. Provincial surveillance protocols for *Clostridioides difficile* infection (CDI), Methicillin-resistant *Staphylococcus aureus* (MRSA) and Carbapenemase-producing organisms (CPOs) are available on the PICNet website: picnet.ca/surveillance.

2. Provincial surveillance data for CDI, MRSA and hand cleaning compliance are collected by health authorities, aggregated by health care facility and quarter, and reported to PICNet. Provincial surveillance data for CPO are submitted to PICNet at the case level by health authorities or care providers in community care settings.

3. Data are presented by fiscal quarter, as defined by financial departments across health authorities. The exceptions are CDI, MRSA and hand cleaning compliance data from Provincial Health Services Authority and hand cleaning compliance data from Interior Health, which are aggregated by calendar quarter. The time frame of each fiscal quarter varies by fiscal year. Generally, the fourth fiscal quarter (Q4) is longer than the other three quarters (Q1, Q2, and Q3).

4. CDI episodes and new MRSA cases are classified as health care-associated or community-associated according to patients' encounters with a health care facility in the previous four weeks (CDI) or 12 months (MRSA).

5. Health care-associated CDI episodes among inpatients in acute care facilities (ACFs) are further classified as new cases or relapses based on the time frame of the episodes. A relapse may include recurrence of a previous CDI, re-infection with the same strain, or infection with a different strain of *C. difficile* that occurs between two and eight weeks after a previous health care-associated CDI episode.

6. CDI episodes among inpatients in acute care facilities that are classified as community-associated include both new cases and relapses.

7. Health authorities have adopted a two-step testing approach for CDI, which includes an initial screening test followed by a confirmatory test, at different times: Fraser Health began in October 2023, Interior Health in February 2022, Island Health in October 2018, Northern Health in November 2023, Providence Health Care in January 2017, Provincial Health Services Authority in December 2023, and Vancouver Coastal Health in June 2023. This two-step testing method may lead to higher reported CDI cases due to its increased sensitivity.

8. A new MRSA case is defined as a colonization or infection identified for the first time in an inpatient in an acute care facility. MRSA infections identified in inpatients with previous MRSA colonization are not included.

9. CPO infections and colonizations are reportable to public health in B.C. All CPO-suspect isolates are required to be sent to BC Centre for Disease Control Public Health Laboratory (PHL) for molecular testing and genotyping. CPO testing results are then obtained from the PHL's laboratory information system.

10. A new CPO case is defined as a carbapenemase gene that was identified for the first time from a given patient in the province. Different genes identified from the same patient are considered different cases.

11. Surveillance forms are required to be completed for new CPO cases (colonizations and infections) identified in both acute and community care settings and submitted to PICNet by health authorities or health care providers in community care settings, such as outpatient clinics, emergency departments, long-term care or assisted living facilities and community clinics. Surveillance information is not available for a minority of CPO cases due to administrative challenges. Exposure information is reported only for the cases where surveillance information is available.

12. New CPO cases are reported based on where they were identified and reported, i.e. acute care facility in a health authority or community care setting.

13. Exposure information collected on CPO surveillance forms includes: travel outside Canada, health care encounters outside Canada and within B.C., ongoing CPO transmission investigation in a patient care unit, and contact with a known CPO case or CPO in the environment in the previous twelve months. These exposures are not mutually exclusive.

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14. Hand cleaning compliance is audited by health authorities. The percentage score reports how often, during an audit, health care workers clean their hands before and after contact with a patient or the patient environment, such as changing bed linen, touching a bed rail or clearing a bedside table.

15. The expectation for hand hygiene compliance is 100% for both before and after contact with the patient and patients' environment for each health care worker group. The provincial target of 80%, established by the Provincial Hand Hygiene Working Group, is a minimum standard health authorities should meet while striving for continuous quality improvement.

16. In acute care facilities, trained auditors observe a sample of health care workers and record whether they clean their hands at the appropriate times.

17. Health care workers in ACFs are grouped into four categories:
    1) Nursing staff, including registered nurse, midwife, licensed practical nurse, care aide, and nursing/midwife student
    2) Physician, including medical doctor, resident, fellow, medical student, and nurse practitioner
    3) Clinical support services, including occupational therapist, physiotherapist, respiratory therapist, speech therapist, social worker, dietician, psychologist, audiologist, porter, pastoral care, radiologist, and technician (e.g., ECG, EEG, phlebotomy)
    4) Other, including house keeping, food services, and clerk

18. Hand cleaning compliance is audited in long-term care facilities (LTCFs) that are owned or operated by a health authority. Audit data are voluntarily reported by health authorities to PICNet for public reporting.

19. Hand cleaning compliance audits were suspended in some health care facilities due to the COVID-19 pandemic response. Compliance data in all LTCFs in Interior Health are not available for Q1 of 2021/22.

20. From Q2 of 2018/19 through Q4 of 2022/23, Fraser Health only reported observations performed by regional hand hygiene auditors in acute care facilities to PICNet. As a result, compliance data are unavailable for all LTCFs in Fraser Health for that time period.

21. There are no LTCFs owned or operated by Provincial Health Services Authority. Provincial Health Services Authority's hand cleaning compliance audit methods were modified during Q1 of 2021/22.

22. Hand cleaning compliance is audited through direct observation in both acute care facilities and LTCFs; however, audit strategies and methods vary across health authorities and over time. Auditors are trained by health authorities and include dedicated hand hygiene auditors or coordinators, infection prevention and control professionals, university co-op students, and staff within health care facilities (self-auditing). Observer bias and Hawthorne effect (i.e. behaviour changes due to awareness of being observed) may occur during auditing.

23. For more details on surveillance methods and data limitations, please refer to the most recent annual surveillance report at picnet.ca/surveillance.

24. For all health authority categorizations in this report, Providence Health Care data is grouped with Vancouver Coastal Health data.

There is variation across health authorities in applying the provincial surveillance protocols, case finding strategies, patient mix and services provided as well as hand cleaning compliance audit methods. Therefore, comparison of numbers or rates of CDI, MRSA, or CPO, or hand cleaning compliance between health authorities should be avoided.

DISCLAIMER