

## Background

- Polio is a highly infectious, vaccine-preventable disease caused by poliovirus, an enterovirus. Approximately 75% of polio infections are asymptomatic (1).
- Transmission occurs from person-to-person, primarily through the fecal-oral route. Poliovirus can be excreted in stool for up to 6 weeks (1).
- Oral polio vaccine (OPV) is developed from weakened wild poliovirus (WPV) strains. Following OPV administration, the vaccine virus is excreted in the stool. In populations with low vaccine coverage, the weakened virus can transform into pathogenic strains (vaccine-derived poliomyelitis virus, VDPV) and cause outbreaks by spreading among under-immunized individuals (1-3).
- In July 2023, the Public Health Agency of Canada (PHAC) was notified of an outbreak of circulating vaccine-derived poliovirus type 2 (cVDPV2) in the Dadaab Refugee Complex, Kenya.
- Refugees arrived in British Columbia (BC) from Dadaab between August 4, 2023 and February 9, 2024, some of whom may be incompletely immunized and at risk of poliovirus infection.

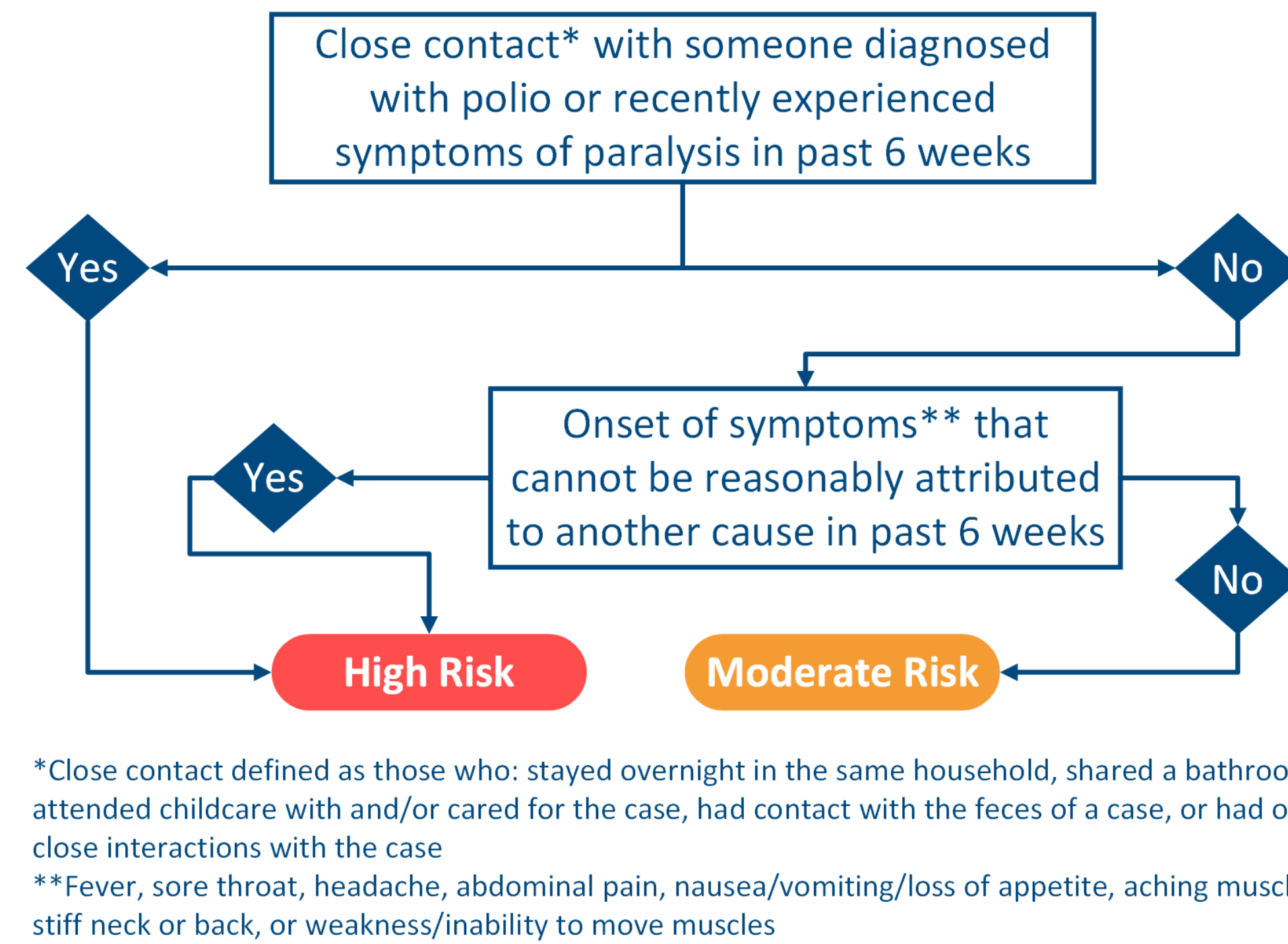
## Objective

1. Assess the presence of imported polio infections among new arrivals
2. Determine their polio immunization status
3. Identify arrivals requiring public health follow up

## Methods

- Regional health authorities collected two stool samples per individual and completed standardized questionnaires including demographic, exposure, symptom, and immunization data for new arrivals. Based on questionnaire responses, individuals were classified as moderate or high risk (Figure 1).
- The BCCDC Public Health Laboratory coordinated the submission of specimens to the National Microbiology Laboratory to screen for polioviruses and enteroviruses using pan-poliovirus and pan-enterovirus RT-PCR assays.
- BCCDC conducted provincial-level descriptive analysis and coordinated the submission of questionnaires to PHAC for centralized national analysis.

## Methods (cont'd)



**Figure 1.** Risk categorization of polio infection among refugee arrivals to British Columbia from Dadaab refugee complex

## Results

**Table 1.** Characteristics of refugee arrivals to British Columbia from Dadaab refugee complex

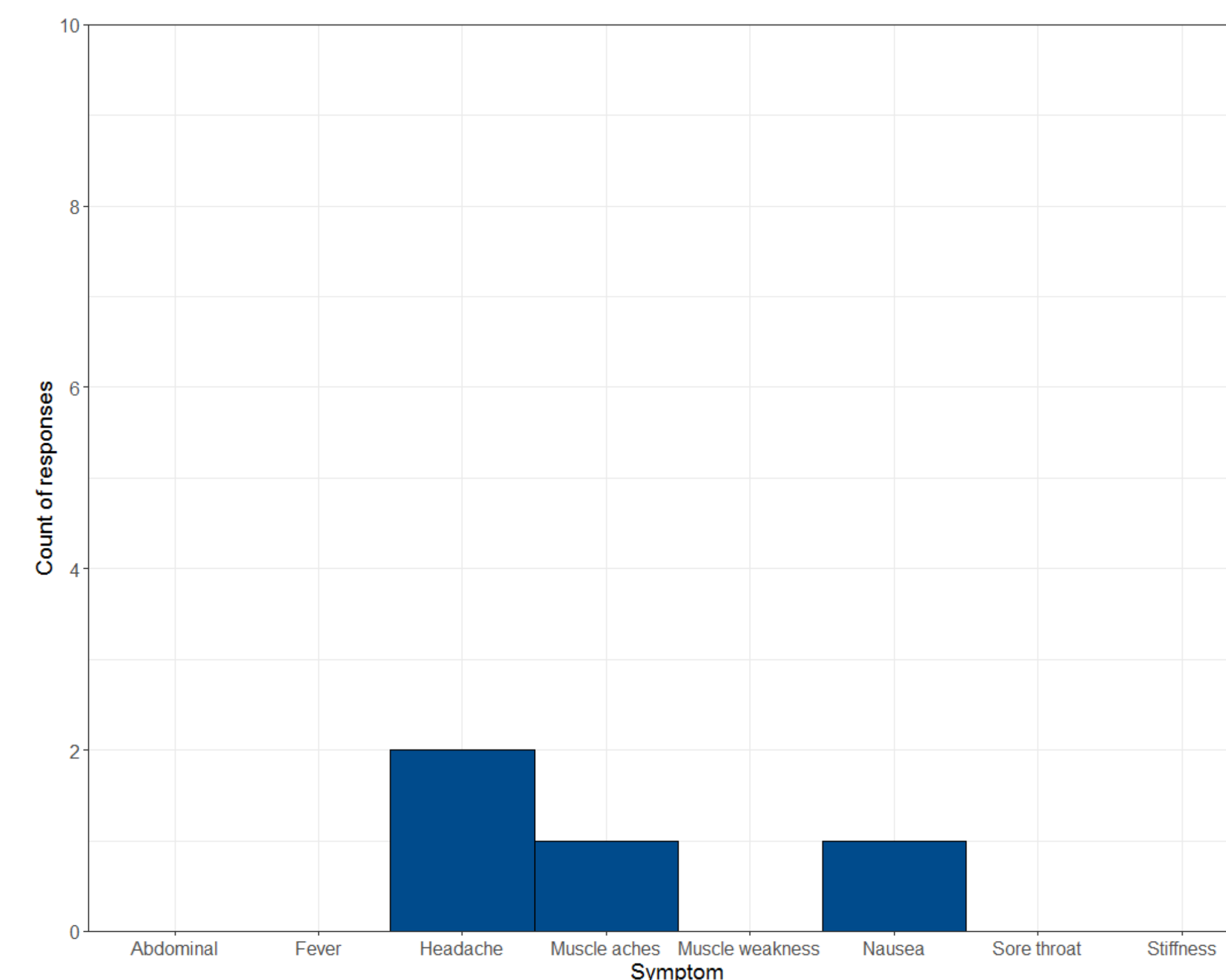
Characteristic	n (%)
<b>Sex</b>	
Female	24 (55.8)
Male	19 (44.2)
<b>Age at arrival, median (range)</b>	23 (3 – 68)
<b>Residence camp</b>	
Dagahaley	20 (46.5)
Hagadera	22 (51.2)
Ifo	1 (2.3)
<b>Health authority</b>	
Interior	0 (0.0)
Fraser	34 (79.1)
Vancouver Coastal	6 (14.0)
Island	2 (4.7)
Northern	1 (2.3)

## Conclusions and implications

- None of the arrivals were identified as having symptoms compatible with clinical illness. Given the asymptomatic nature of most polio infections, laboratory testing was critical to assess the risk of polio importation and there was no evidence of poliovirus shedding among new arrivals.
- Though wild poliovirus has been eliminated in the Americas, the risk of imported cases from countries with circulation of WPVs and VDPVs highlights the importance of maintaining high vaccination coverage in BC.

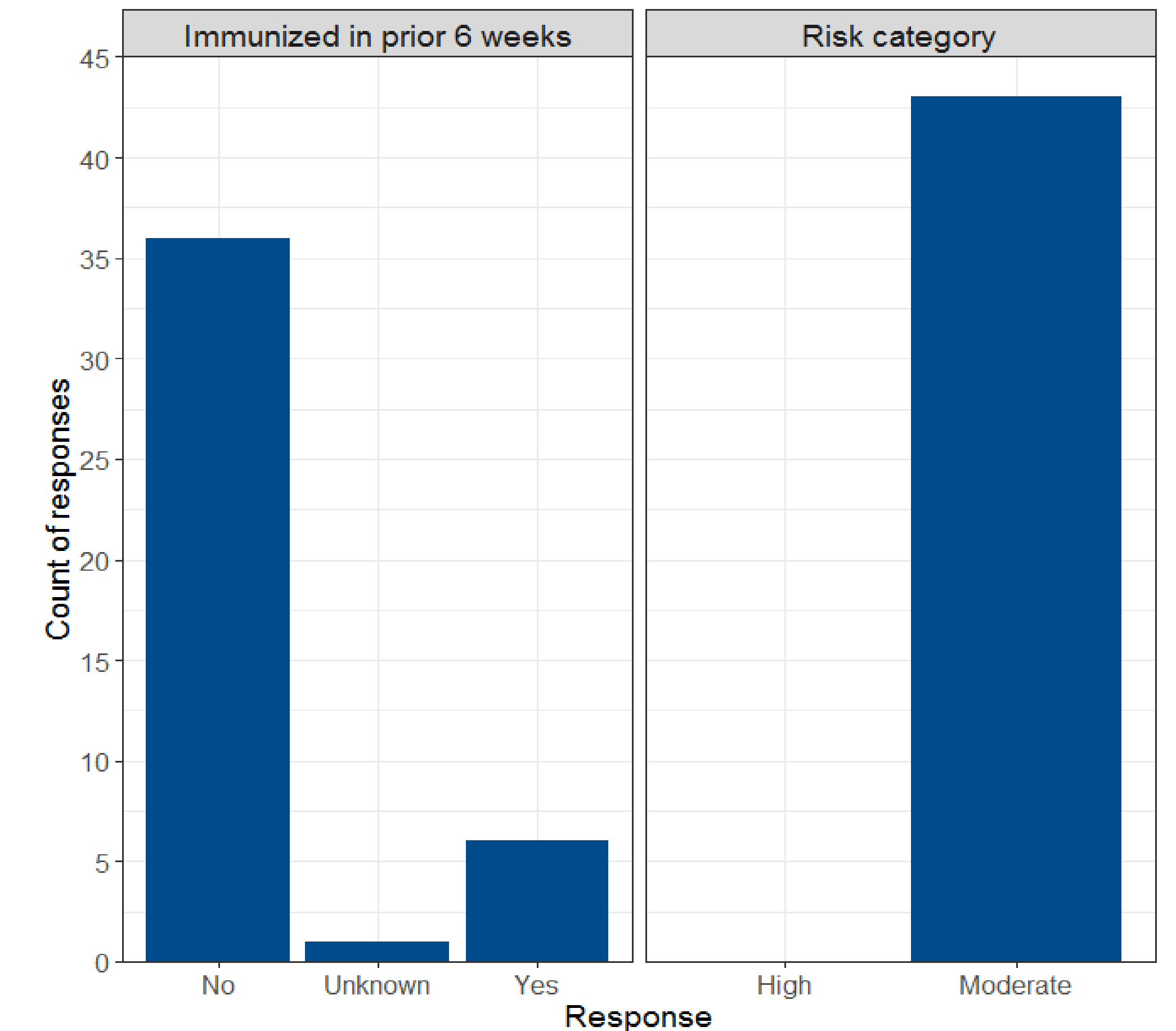
## Results (cont'd)

- A total of 43 refugees arrived in BC from 14 households between August 4, 2023 and February 9, 2024.
- As shown in **Table 1**, most were female (55.8%) and the median age at arrival was 23 years (range 3-68 years).
- Most individuals arrived from Dagahaley (46.5%) or Hagadera (51.2%) camps and were residing in the Fraser Health region (79.1%) following their arrival to BC.
- Collection and submission of stool specimens and questionnaires were complete for 43 out of 43 (100%) arrivals to BC.
- Lab results were complete for 33 out of 43 (76.7%) of arrivals; the remaining results were pending due to recent arrival in BC (February 2024).



**Figure 2.** Count of individuals who reported experiencing any polio-related symptoms in the prior 6 weeks

- Three individuals reported mild symptoms in the 6 weeks prior to arrival; 2 reported headaches, 1 reported nausea and 1 reported muscle aches (Figure 2). No individuals reported ongoing symptoms at the time of screening.



**Figure 3.** Count of individuals who received oral polio vaccine in the 6 weeks prior to arrival (left) and their risk status (right)

- Only 6 individuals (14.0%) received OPV in the 6 weeks prior to arrival (Figure 3, left).
- No individuals had contact with a person diagnosed with polio or who had developed paralysis.
- Based on reported symptoms and contact history, 43 of 43 (100.0%) individuals were classified as moderate risk (Figure 3, right).

		Enterovirus	
		+	-
Poliovirus	+	0	0
	-	6	27

**Figure 4.** Poliovirus and enterovirus RT-PCR assay screening results for refugee arrivals to British Columbia from Dadaab refugee complex

- Of those with complete lab information (n = 33), all were negative for poliovirus, while 6 (18.2%) tested positive for enterovirus (Figure 4).

## Acknowledgements

We acknowledge the BC Regional Health Authorities, BCCDC Public Health Laboratory, National Microbiology Laboratory, and Public Health Agency of Canada for their contributions to this project.

## References

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