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Cohorting in Acute Care Facilities

February 12, 2013

Ontario
Agency for Health Protection and Promotion
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Setting the Context

- What brought us to hold this session?
- Acute Respiratory Infection (ARI) survey
- Cohorting – when and why
- The politics of cohorting
- Q & A

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What brought us here?

- Late December 2012 through early January 2013- surge of ARI cases presenting to hospitals
- January 9, 2013- Public Health Ontario conducts ARI survey with hospitals
- ARI surge was more problematic in some areas than in others
- Patient transfers and cohorting identified as two significant issues

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ARI Survey

- Phone survey asked hospitals about the ARI surge and what help they needed
- Resulted in patient transfer algorithm to address repatriation
- Cohorting also identified as an issue

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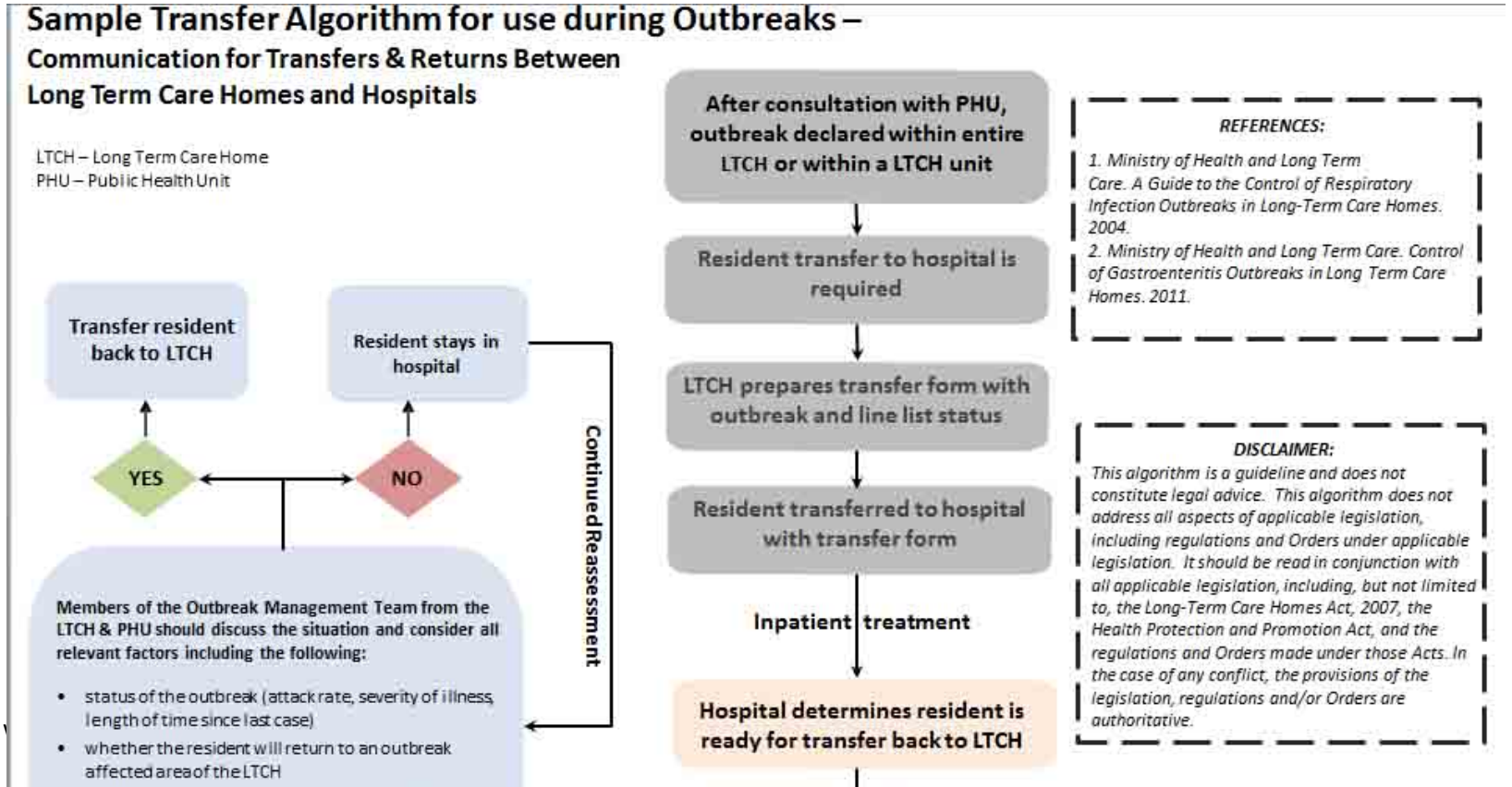
Patient Transfer Algorithm

- January 24 – MOHLTC distributes algorithm to help with repatriation issue



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ARI in Acute Care Phone Survey

January 9, 2013

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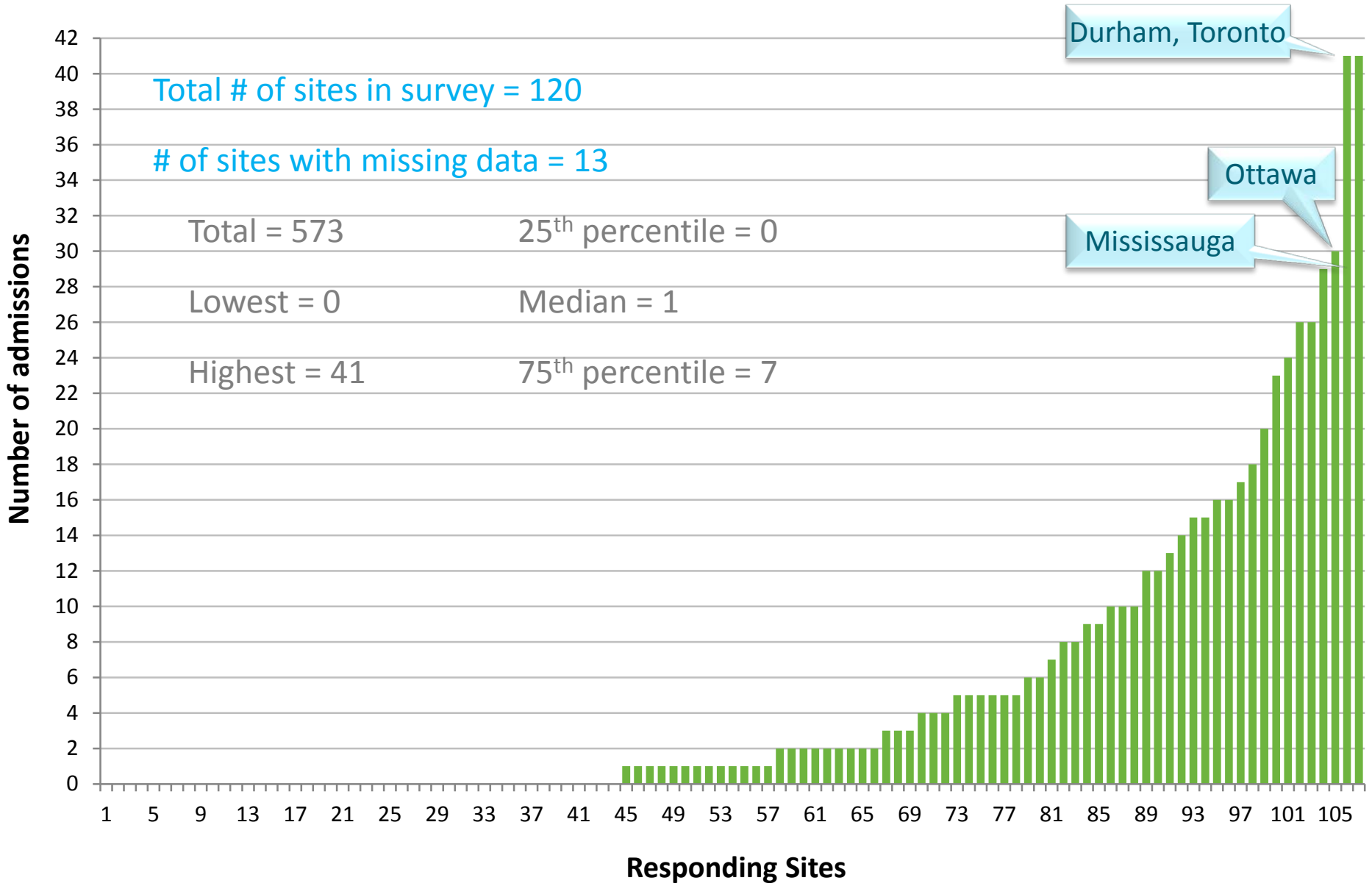
Number of admissions currently with ARI waiting for confirmation of infectious agents



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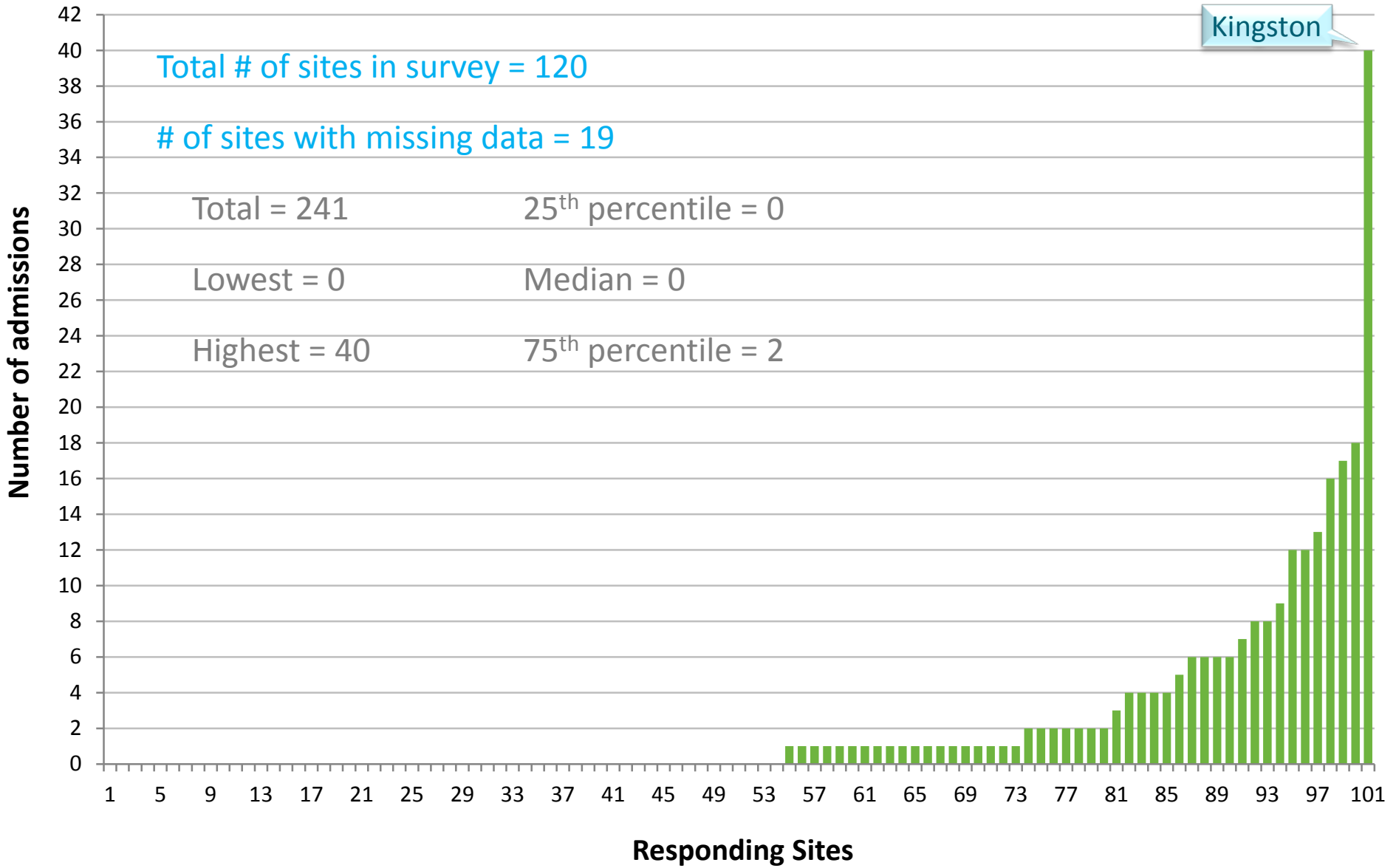
Number of admissions with influenza A



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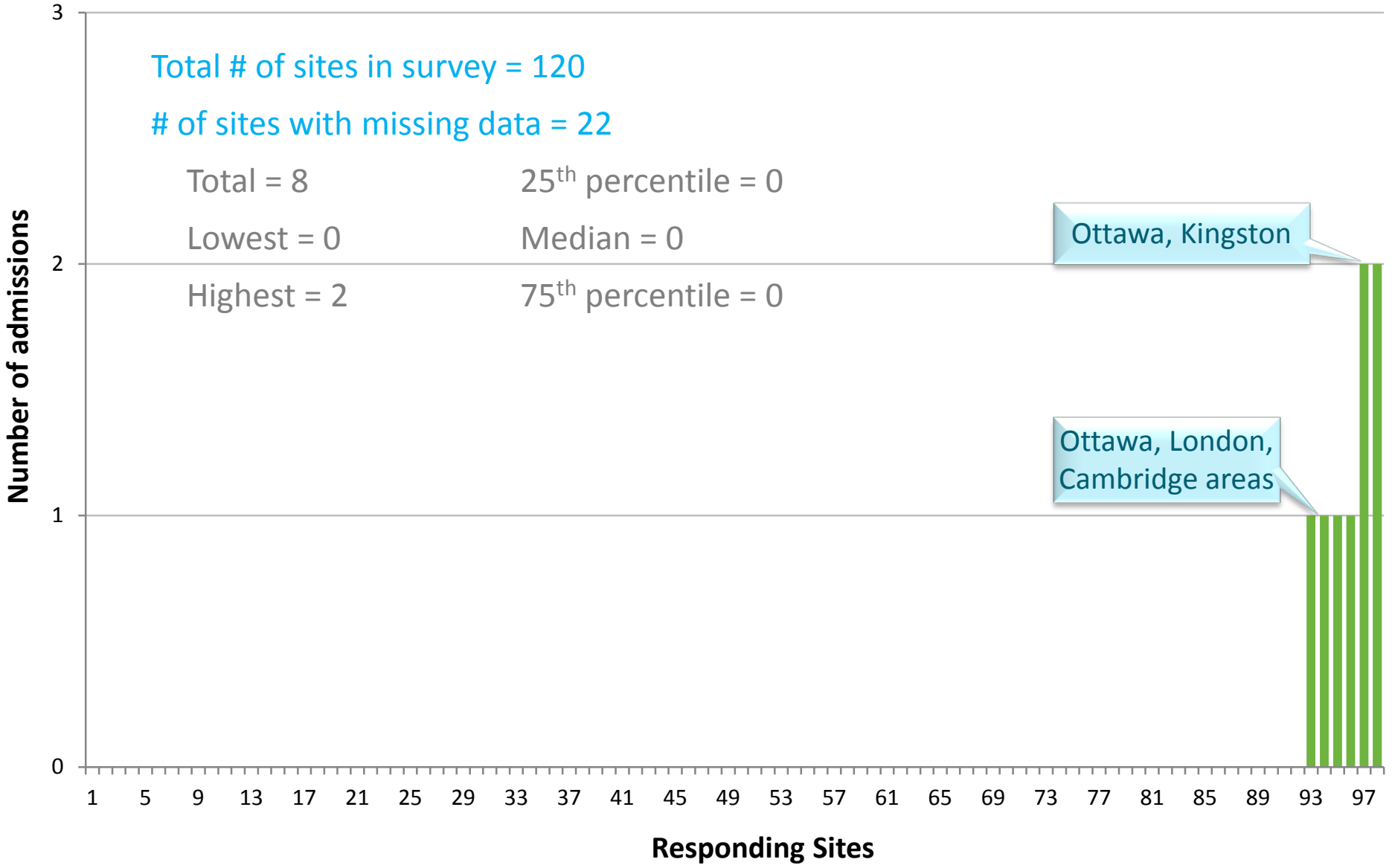
Number of admissions with influenza B



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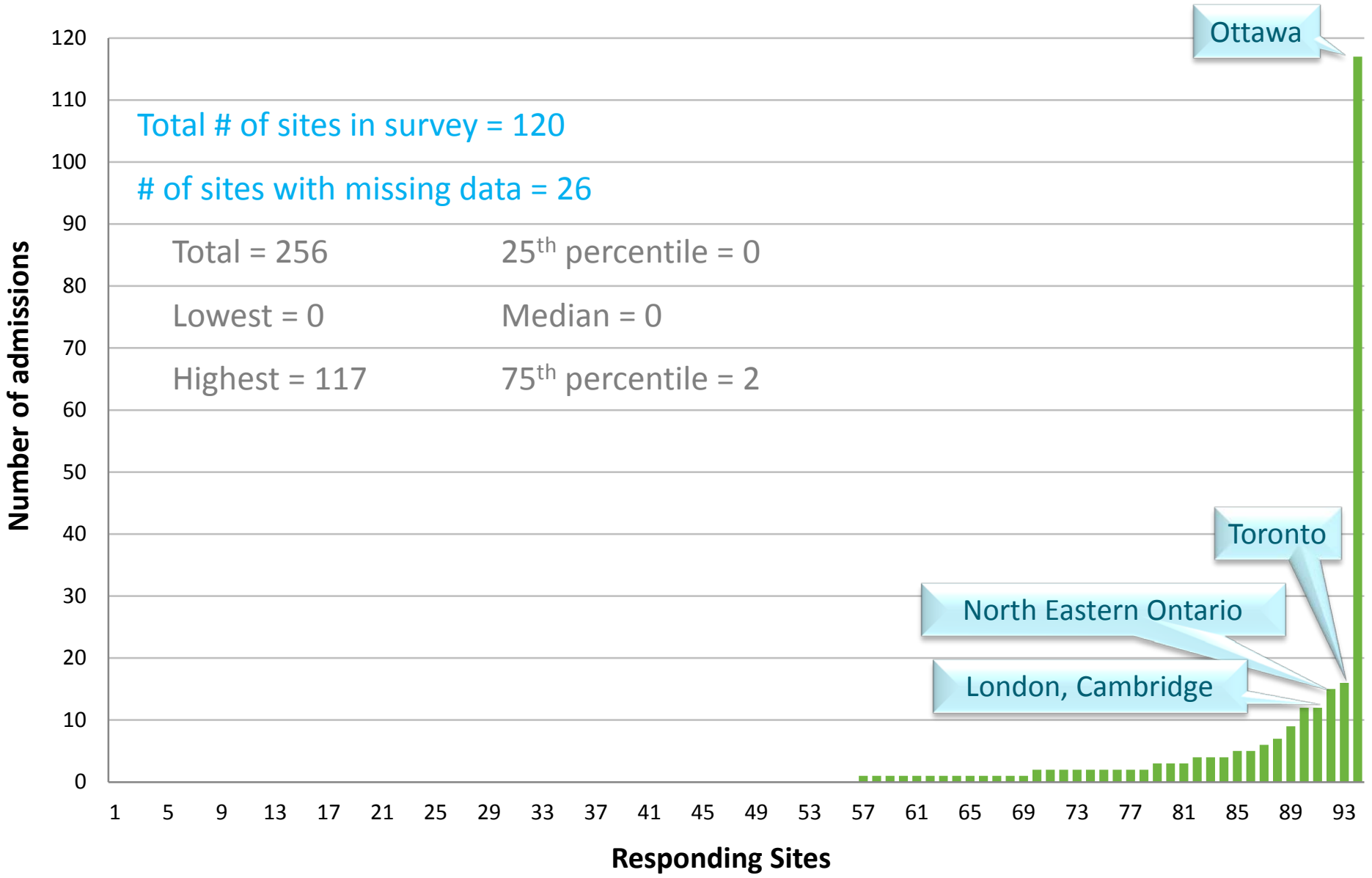
Number of admissions with ARI (not influenza A or B)



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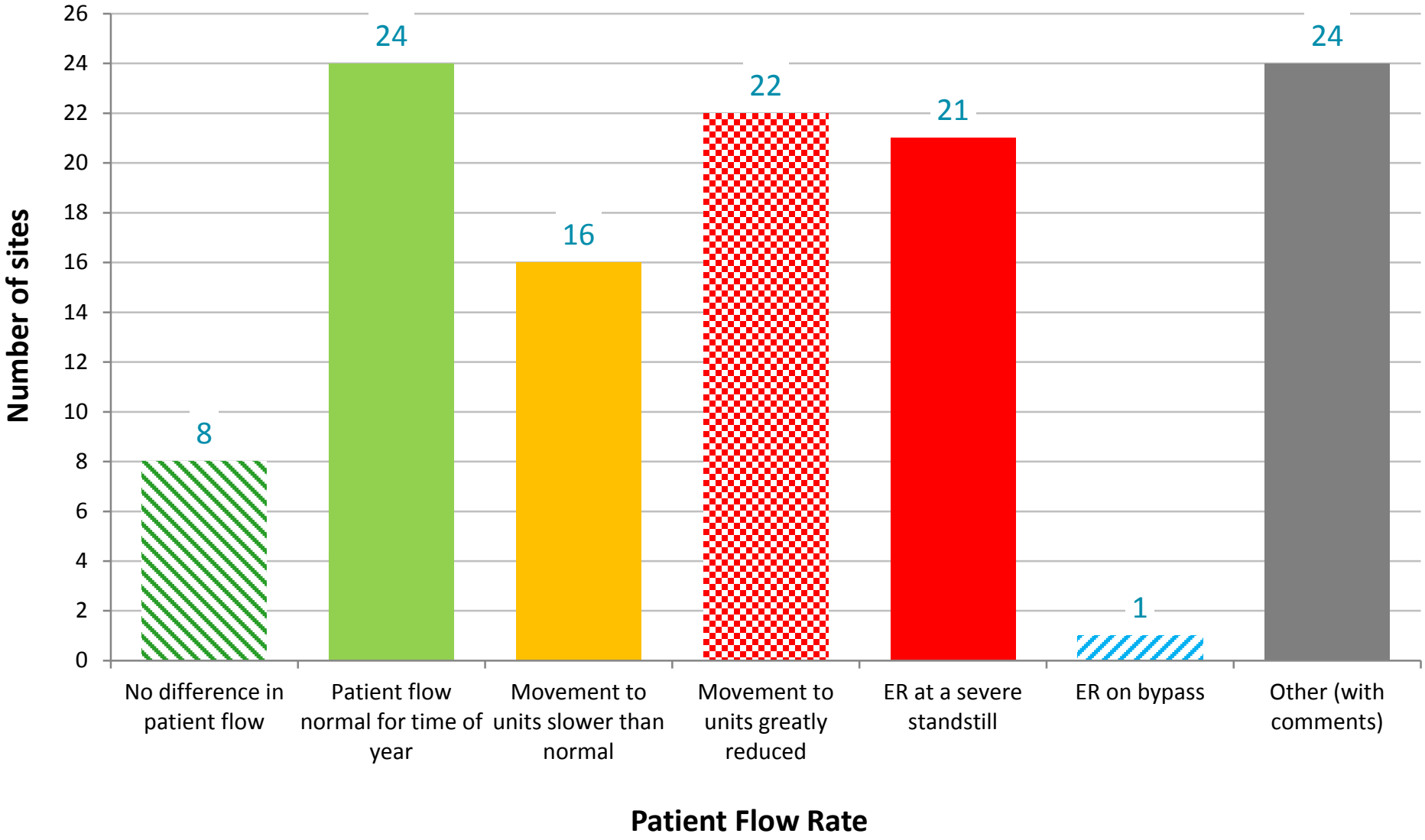
Patient Flow Rate in ER

Total # of sites in survey = 120

# of sites with missing data = 4



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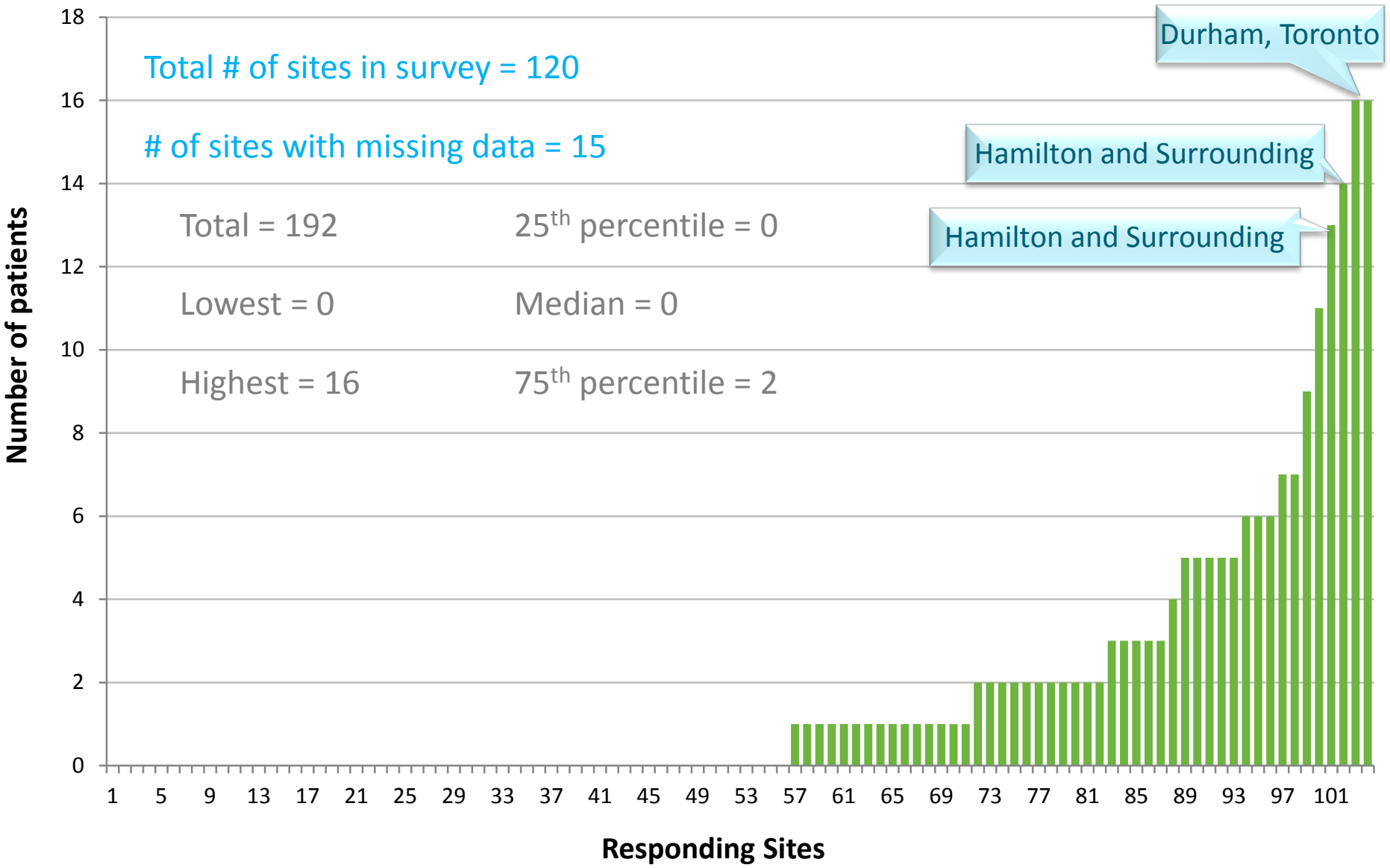
Number of Patients in ER with ARI Waiting for Lab Confirmation and Placement in Private Room



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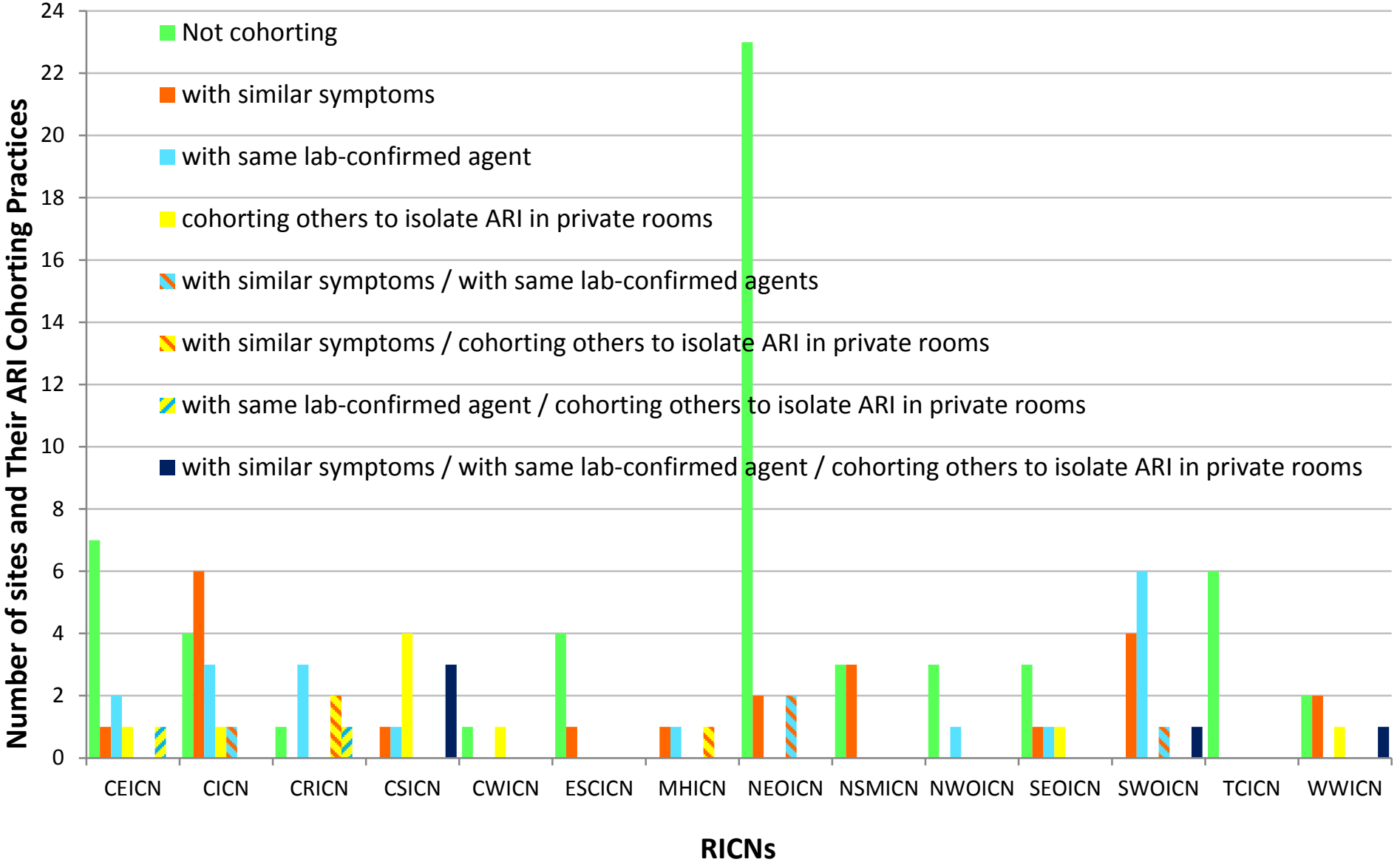
Geographic Variability in Cohorting Practices



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Summary of ARI Survey

- There was a large number of patients with ARI in acute care facilities
- Large number of patients with ARI waiting in ER
- Significant geographical variability
- Cohorting is problematic without a laboratory diagnosis
- Survey was a very effective way to get a picture of the provincial landscape in short order
- Many thanks to all participants

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PIDAC's Routine Practices/Additional Precautions Best Practice Document

- Cohorting is acceptable in *some* cases where patients/residents are known to be infected with the same microorganism (lab testing).
- In long-term care homes, spatial separation of residents within their bed space, dependant on a risk assessment of the resident, is recommended

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Applications of Cohorting

- Nosocomially acquired cases in an outbreak
  - to interrupt transmission that is happening in the institution
- Cohorting of admitted cases of ARI or gastro
  - to prevent transmission from admitted cases to others

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Criteria for Cohorting

- When single rooms are not available or during outbreak situations
- Should be considered in outbreaks when transmission is documented and continues despite alternative interventions
- Should be considered when available facilities and staffing allow for the establishment of cohorting
- Should never compromise infection control practices and *Additional Precautions must be applied individually for each patient/resident within the cohort*.

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Types of Cohorting

Patient Cohorting

- applicable in acute care settings for control of transmission of microorganisms or outbreaks
- In long-term care homes, movement of residents to achieve geographical cohorting is not appropriate

Staff Cohorting

- applicable in all health care facilities

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Patient/Resident Cohorting

- The placement and care of individuals who are infected or colonized with the same microorganism in the same room
  - This means lab confirmation!!
  - This does NOT mean you can cohort everyone together that has general acute respiratory infection symptoms
  - This does NOT mean you can cohort VRE with MRSA or influenza with RSV
- Placing those who have been exposed together to limit risk of further transmission

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Patient/Resident Cohorting

- In long-term care homes, resident cohorting does not imply that a resident is moved out of his/her room
- Assess patients/residents for the duration of colonization/infection (e.g. ARO's)

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Staff Cohorting

- Assigning specified health care providers to care only for patients/residents known to be colonized or infected with the same microorganism.
- Can be used in addition to patient/resident and geographical cohorting by assigning dedicated staff to care for either those patients/residents who are infected or colonized, or those who are not.
- Can be used during outbreaks to reduce the potential for cross-infection between patients/residents by limiting the number of staff interacting with patients/residents.

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The Power and Pitfalls of Cohorting

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Key Advantages

- Segregation of known infectious patients
- Geographic co-localization
- Maximize limited isolation rooms
- Separation of defined patient care workers
- Sense that there is “control” of the situation
- Perhaps easier monitoring of impact

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Pitfalls

- Movement of patients and relocation
- Initially lose bed space as the cohort location is defined and populated
- Diagnosis may be presumptive, uncertain or disputed
- Infection Control staff may be targeted as the “cause“ of elective admission disruption.
- Communications with the Medical staff is pivotal for success

Evidence For Cohorting

- No randomized, controlled trials comparing single-room isolation and cohorting
  - Most studies use uncontrolled before-and-after designs and include cohorting as part of a bundle of interventions
- In general, there is a theoretical risk of transmission between hospital roommates
  - Number of hospital roommate exposures per day associated with increased risk of MRSA and VRE and CPE (Lowe et al ICHE 2013) colonization or infection[1]
  - Facilities that have moved to a location with single rooms for all patients have shown reductions in rates of MRSA, [2] gram-negative bacilli, [2] and *Clostridium difficile* infection (CDI) [3]

Evidence For Cohorting

- Evidence for cohorting is limited
  - Relatively few studies
  - Poor methodological quality
- There is some weak evidence that cohorting may help to control outbreaks, particularly for RSV and MDR-GNB
- However, different pathogens have similar clinical presentations, particularly respiratory and GI illnesses, so it is essential to have a laboratory-confirmed diagnosis before cohorting

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Solutions

- When cohorting is being considered, key admin and clinical staff must be involved in the discussion, decision, and implementation.
- A communication strategy is required and needs consistent and continuous messaging.
- Strong and unwavering senior admin support is required for success.

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How to deal with uncertainty?

- Consider 3 cohorts:
  a) Known infections
  b) Exposed or presumed infectious
  c) Non-exposed groups

- For Influenza considering ILI as the diagnosis may be problematic
- Proper Routine Practice will suffice to prevent cross contamination

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Thank –you

Public Health Ontario thanks all of you for participating in the ARI survey

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SCAN OF THE LITERATURE ON COHORTING

Acute Respiratory Infection (ARI)

- Consistent evidence that cohorting infants with RSV reduces nosocomial transmission[4]
- No evidence for cohorting patients with other viruses[5]
- Important to have a microbiologic diagnosis
  - A study of infants presenting with bronchiolitis found RSV in 28 of 50, influenza A in 3, rhinovirus in 9, and other picornaviruses in 2[6]
  - If all infants in their sample had been cohorted, there would have been a risk of cross-infection with influenza A and other respiratory viruses

MRSA and VRE

- Decreased prevalence when patients are moved to a separate cohort ward[7,8]
- Some studies have reported reductions in MRSA and VRE after implementation of cohorting, in combination with other measures such as decolonization[9] or enhanced environmental cleaning[10]
- Other studies have reported that cohorting did not reduce transmission[11,12]

Multi-drug Resistant Gram Negative Bacteria

- Carbapenem-resistant *Klebsiella pneumoniae*[13]
  - There was no change with implementation of single-room isolation, but there was a significant decrease in incidence after a cohorting policy was initiated
  - Cohorting was implemented simultaneously with enhanced environmental cleaning and screening of contacts
- Outbreak of MDR *Serratia marcescens*[14]
  - Transmission stopped only after implementation of patient cohorting
  - The cohorting policy led to an increase in nurse-to-patient ratio that may have also contributed to the outbreak ending

GI Pathogens

- No studies of isolation or cohorting for patients with *Clostridium difficile* infection[15]

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