



Public Health Surveillance for Vancouver 2010

Syndromic Surveillance Workshop
Ontario Agency for Health Protection and Promotion
Toronto – March 30, 2009

Patricia Daly MD, FRCPC
Chief Medical Health Officer and
Vice-President, Public Health

Vancouver 2010

- Olympic Games:
February 12-28, 2010
- Paralympic Games:
March 12-21, 2010



Vancouver
Coastal Health
Promoting wellness. Ensuring care.



XXI Olympic Winter Games

- 17 days of competition
- 5,500 athletes & officials
- 82 nations
- 140 ticketed events, 70 medal events



XXI Olympic Winter Games

- 10,000 accredited media
- 25,000 volunteers
- 1.6 million tickets
- 70,000 visitors per day, 35,000 overnight visitors



Vancouver XI Paralympic Winter Games

- 10 Days of Competition
- 1,350 athletes & officials
- 40 countries
- 250,000 tickets



Vancouver 2010

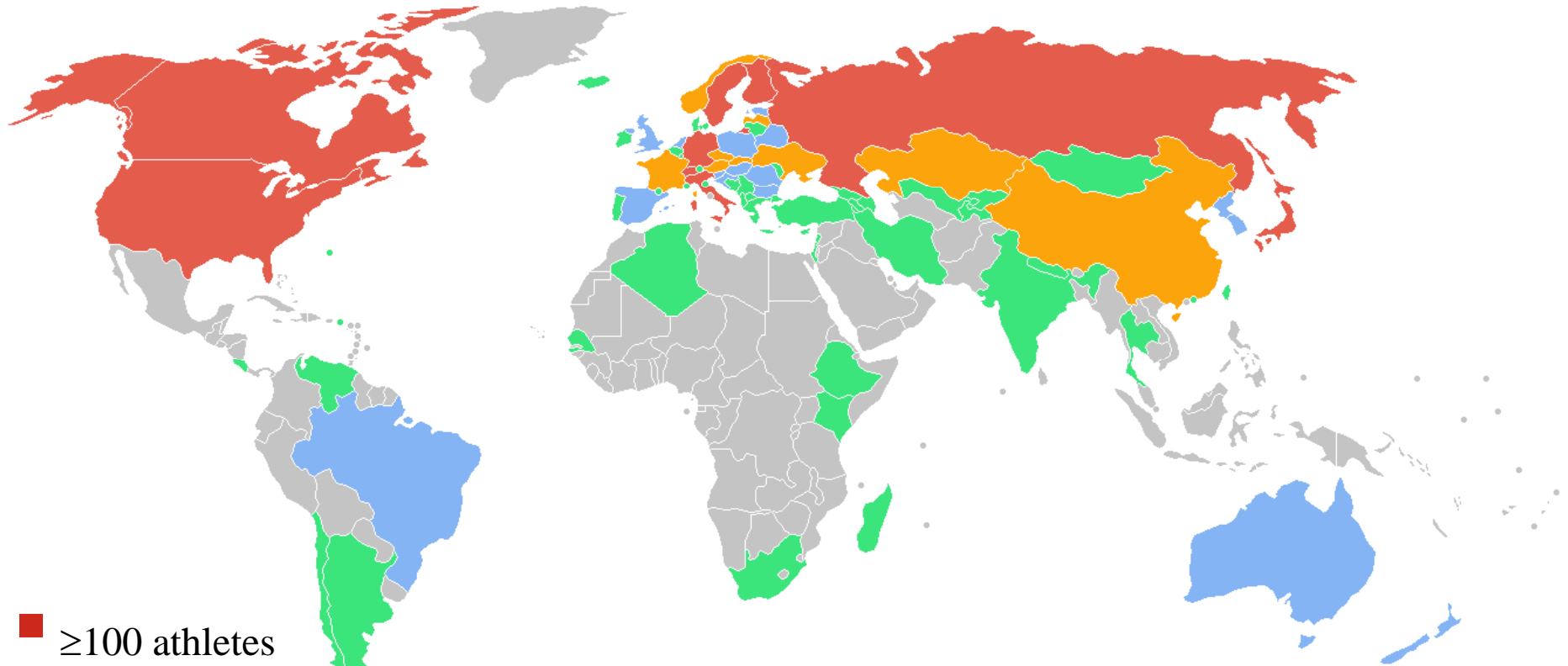
- Largest city to host a Winter Olympics
- Vancouver, Whistler – major tourist destinations
 - Health care system has experience with large numbers of visitors
- Vancouver Symphony of Fire:
 - 1.8 million spectators over 4 nights



Risk Assessment

- Experience of previous Olympic Games:
 - Visit to Turin, Italy in 2006
 - Visit and meetings with Salt Lake City representatives (2002 Games)
 - Review of literature
 - Meetings with International Olympic Committee Officials

Olympic Athletes – Countries of Origin Turin



- ≥100 athletes
- 50-99 athletes
- 10-49 athletes
- <10 athletes

>50% of athletes:

United States	Switzerland
Canada	Sweden
Italy	Japan
Russia	Norway
Germany	

Turin Syndromic Surveillance

- Established in 3 Olympic Polyclinics and Venue Medical Services
 - ATOS Origin clinical information system
- Emergency Rooms of 4/12 Olympic hospitals, 1 additional hospital
 - All different information systems
- Physician on-call group

Turin Syndromic Surveillance

1. Respiratory syndrome with fever
2. GI syndrome without blood stools
3. Bloody diarrhea
4. Fever with rash
5. Lymphadenitis with fever
6. Neurologic syndrome
7. Acute jaundice
8. Sexually transmitted disease
9. Suspected influenza
10. Hemorrhagic acute syndrome
11. Peripheral neurologic syndrome
12. Focal lesion
13. Unexplained shock/sepsis
14. Coma
15. Unexplained death
16. None

Turin Syndromic Surveillance

- Most common syndromes:
 1. Respiratory syndrome with fever
 2. Gastroenteritis
- No increase in any syndrome over the reporting period
- Errors in coding
- Data not real time

Daily Bulletin, 27 February 2006



OLYMPIC WATCH

Health Emergency Surveillance



For each day of surveillance, a colour is assigned to summarise the overall situation for that day, as follows:

- white:** nothing to report; trend reflects seasonal norm;
- yellow:** alert threshold; increase within the expected values;
- orange:** epidemiological investigation being conducted; increase exceeding expected values;
- red:** interventions being carried out; state of alert/alarm

Salt Lake City 2002

- Syndromic surveillance system established
 - Automated analysis of “Chief complaint” data from ERs
- Of limited value

Olympics – Public Health Issues in Past Games

- No communicable disease outbreaks
- No major health protection issues
- Issues related to crowding e.g. injuries – mitigated by advance planning
- Security/terrorist concerns

Vancouver 2010 - Disease and Injury Surveillance

Goal: To monitor and respond to unusual health events before, during and after the Vancouver 2010 Olympic and Paralympic Games

Surveillance System Components

Existing Data:

- Emergency Room data
- Reportable communicable diseases
- Laboratory data
- Facility outbreaks
- Foodborne illness complaints
- Sentinel physician surveillance for ILI
- Poison Control data
- HLSBC (BC Nurse line)
- BC Ambulance calls
- Police calls data

Data Enhancements:

- Expanded ER data
- VANOC Polyclinic/Venue Medical Services encounters
- Hotel medical services
- Injury surveillance ←
- Illicit drug overdose

**Communication links
with key partners**

Public Health Surveillance Unit

Supporting regional public health practice:

- Health Assessment
- Disease Surveillance
- Epidemiological Investigations
- Knowledge Transfer



8th Floor - 601 West Broadway
Vancouver, British Columbia
Canada V5Z 4C2



pheu@vch.ca

VCH Information Systems

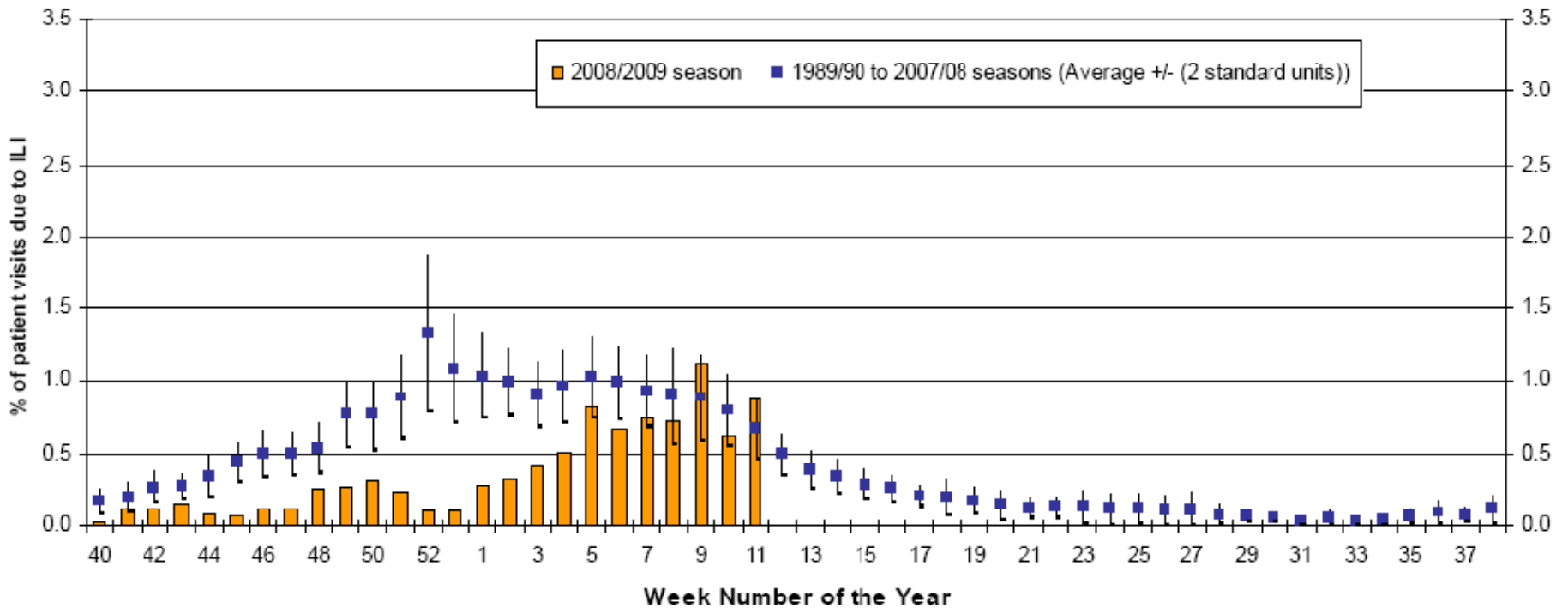
- PARIS
 - Comprehensive community system
 - Communicable disease reporting and follow-up
 - Mental health and addictions
 - Homecare, youth clinics, etc.
- CareConnect - EMR
 - All acute care systems in VCH
 - PARIS

Notifications of Infectious Diseases
Summary Report for May 2008



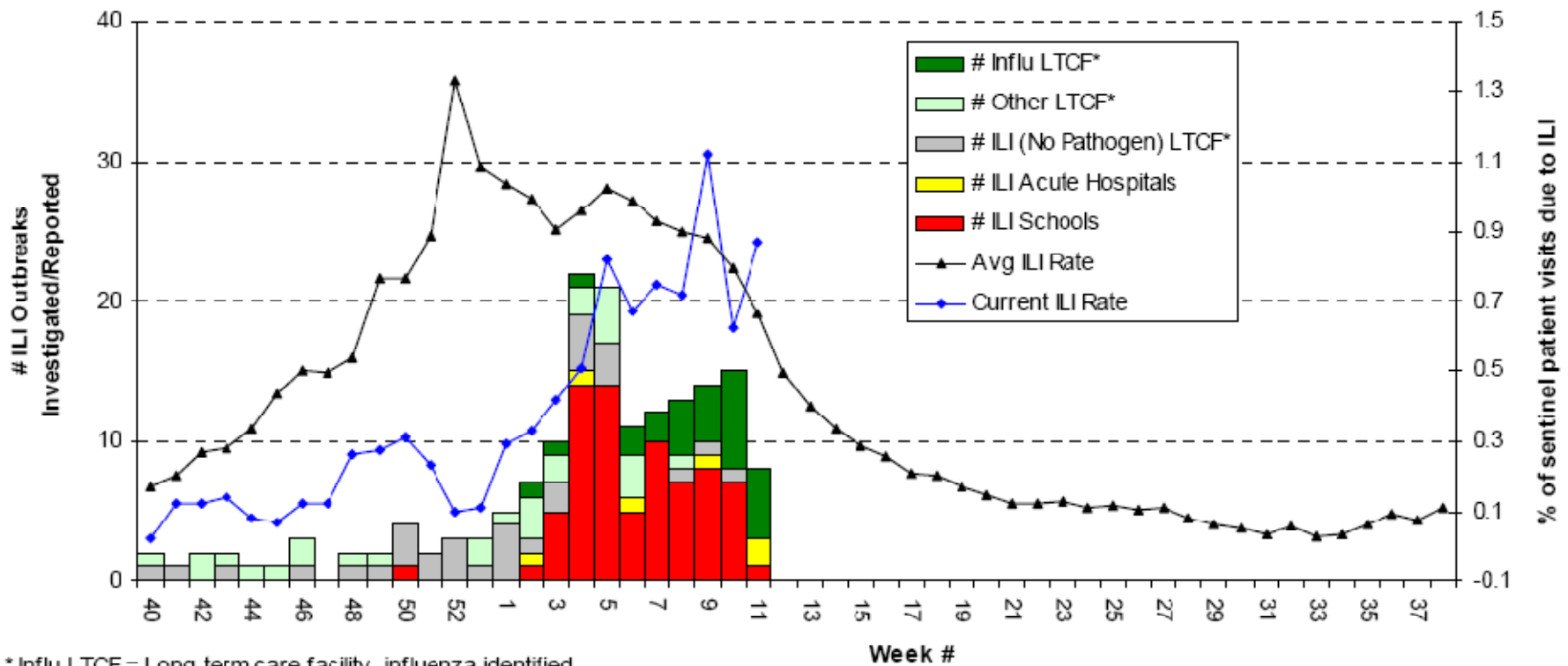
Disease Type	Health Service Delivery Area								Year to Date		Monthly Rate (per 100,000)	
	Current	Previous Months			Coastal				Current	Last	Current Rate	Last Year's Rate
	Month	-1	-2	-3	Urban	Rural	Richmond	Vancouver	Count	Year's Count	[95% CI]	[95% CI]
Vaccine Preventable Diseases												
Diphtheria	0	0	0	0	0	0	0	0	0	0	0.0 [0.0 - 0.0]	0.0 [0.0 - 0.0]
Haemophilus Influenza Type B, invasive	0	0	1	0	0	0	0	0	1	0	0.0 [0.0 - 0.0]	0.0 [0.0 - 0.0]
Hepatitis B: Acute	2	1	0	2	0	0	0	2	5	4	0.2 [0.0 - 0.4]	0.0 [0.0 - 0.0]
Hepatitis B: Chronic carrier	49	49	63	66	0	0	13	38	278	281	4.8 [3.3 - 6.8]	6.8 [4.3 - 7.2]
Hepatitis B: Undetermined status	18	7	9	9	6	1	5	4	49	17	1.5 [0.8 - 2.2]	0.2 [0.0 - 0.4]
Influenza	11	36	75	94	0	1	3	7	306	190	1.0 [0.4 - 1.6]	0.8 [0.3 - 1.4]
Measles	0	0	0	0	0	0	0	0	0	0	0.0 [0.0 - 0.0]	0.0 [0.0 - 0.0]
Mumps	2	0	1	1	1	0	0	1	4	0	0.2 [0.0 - 0.4]	0.0 [0.0 - 0.0]
Pertussis	11	13	8	5	1	10	0	0	39	8	1.0 [0.4 - 1.6]	0.5 [0.1 - 0.9]
Rubella	0	0	0	0	0	0	0	0	0	0	0.0 [0.0 - 0.0]	0.0 [0.0 - 0.0]
Sexually Transmitted and Bloodborne												
Chlamydia	241	265	223	228	33	17	35	156	1238	998	22.4 [9.6 - 25.2]	21.1 [18.4 - 23.9]
Gonorrhoea	32	33	43	35	0	0	1	31	181	184	3.0 [1.9 - 4.0]	4.1 [2.9 - 5.3]
Hepatitis C	41	44	53	53	5	8	2	28	248	232	3.8 [2.8 - 5.0]	5.0 [3.7 - 6.4]
HIV	23	14	15	18	0	0	0	23	82	78	2.1 [1.3 - 3.0]	1.0 [0.4 - 1.6]
Syphilis, infectious	27	23	21	20	0	0	1	26	112	78	2.5 [1.6 - 3.6]	1.1 [0.5 - 1.7]
Syphilis, other	11	11	5	7	0	0	1	10	39	14	1.0 [0.0 - 1.6]	0.3 [0.0 - 0.6]
Direct Contact and Respiratory												
Legionella	0	0	0	0	0	0	0	0	0	0	0.0 [0.0 - 0.0]	0.0 [0.0 - 0.0]
Meningococcal, invasive	2	1	0	0	2	0	0	0	5	5	0.2 [0.0 - 0.4]	0.2 [0.0 - 0.4]
Streptococcal, Sp A invasive	10	7	9	5	3	0	1	6	35	24	0.9 [0.4 - 1.6]	0.5 [0.1 - 0.9]
Pneumococcal, invasive	4	11	15	4	0	0	0	4	45	61	0.4 [0.0 - 0.7]	1.4 [0.7 - 2.1]
Tuberculosis												

**Percentage of Patient Visits due to Influenza Like Illness (ILI) per Week
Compared to Average Percentage of ILI Visits for the Past 19 Seasons
Sentinel Physicians, British Columbia, 2008-2009**



Source: BCCDC

Number of Influenza-Like Illness (ILI) Outbreaks Investigated or Reported, Compared to Current ILI Rate and Average ILI Rate for past 19 years, per Week British Columbia, 2008-2009

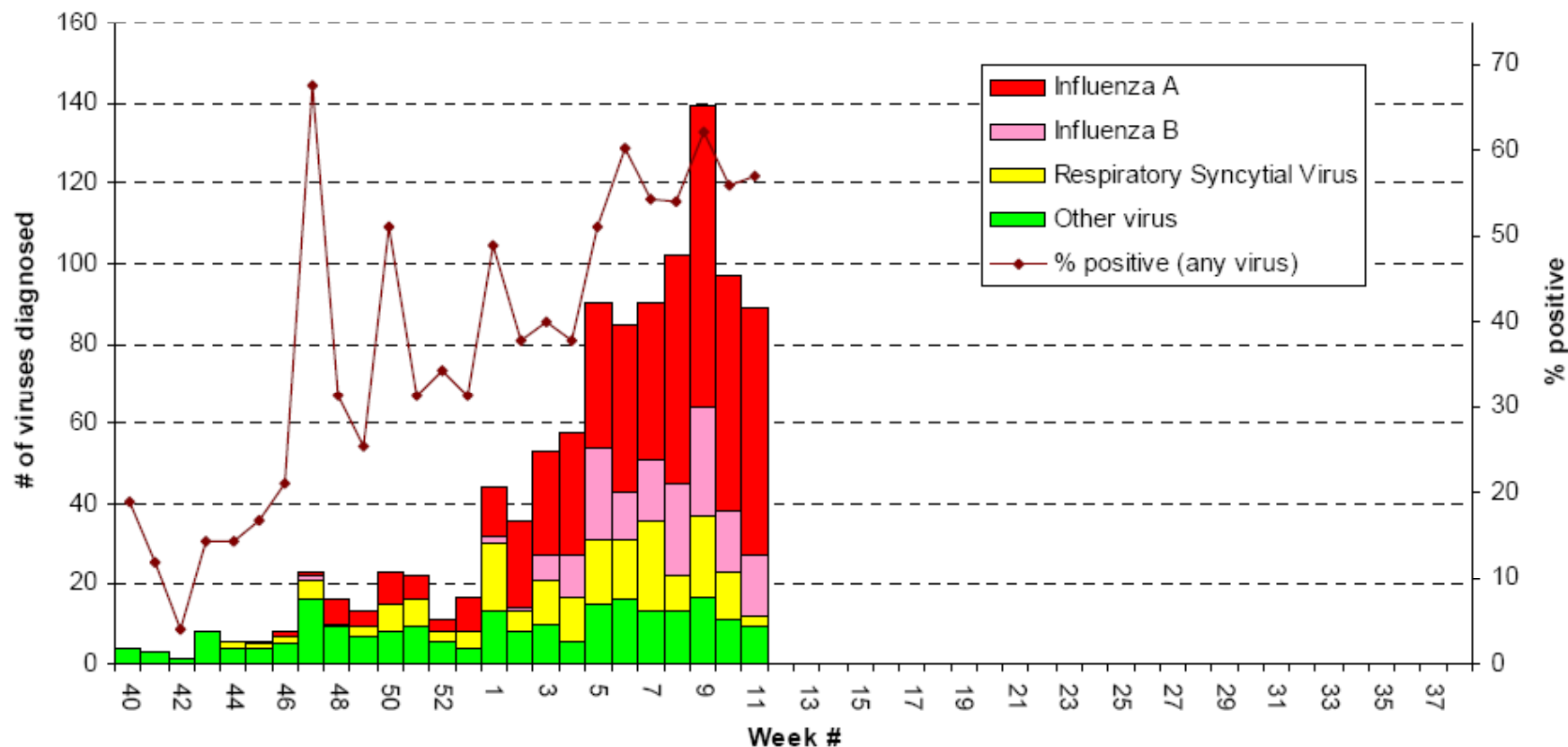


* Influenza LTF = Long-term care facility, influenza identified

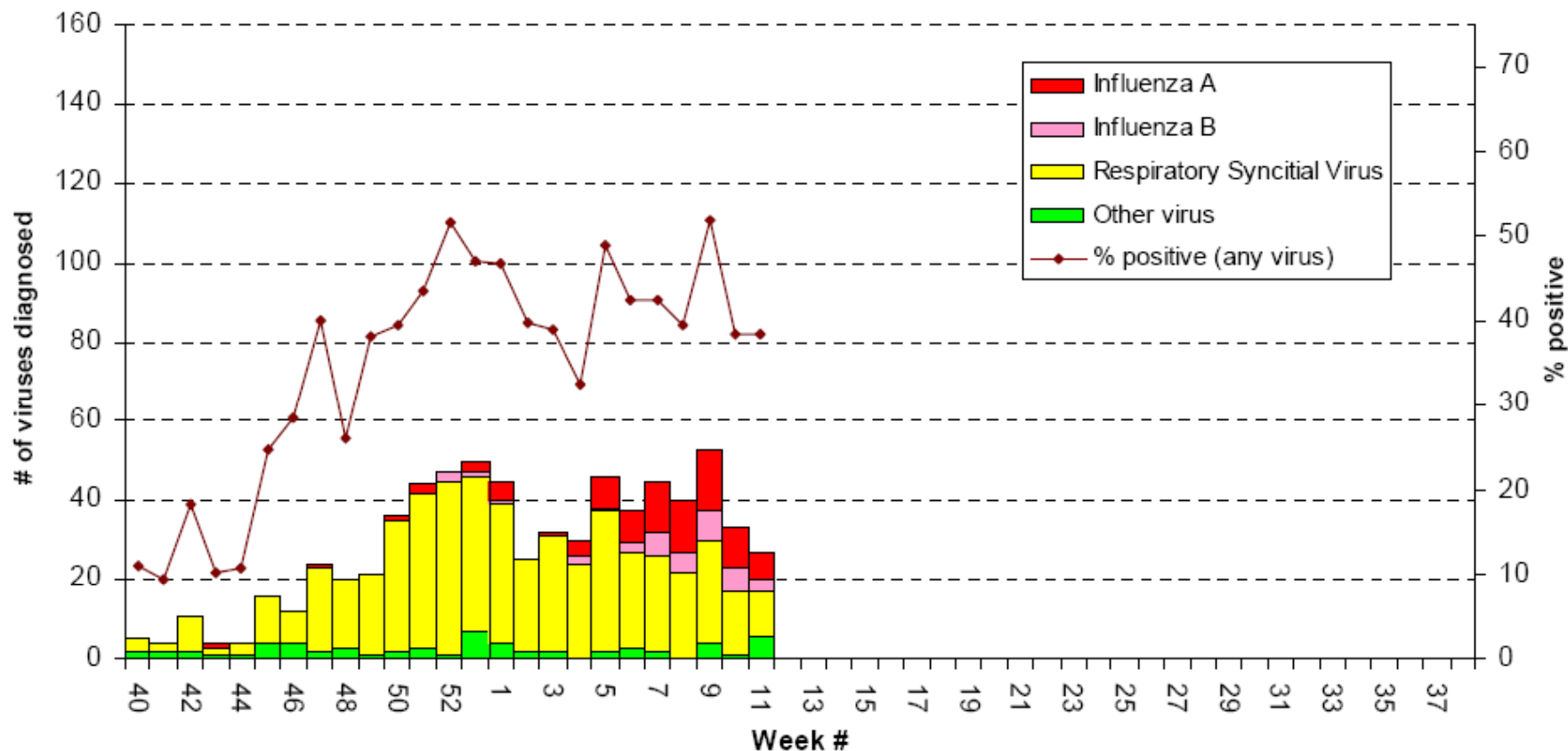
* Other LTF = Long-term care facility, other pathogen identified (including RSV, parainfluenza, adenovirus, and rhino/enterovirus)

* ILI (No Pathogen) LTF = Long-term care facility, no pathogen identified

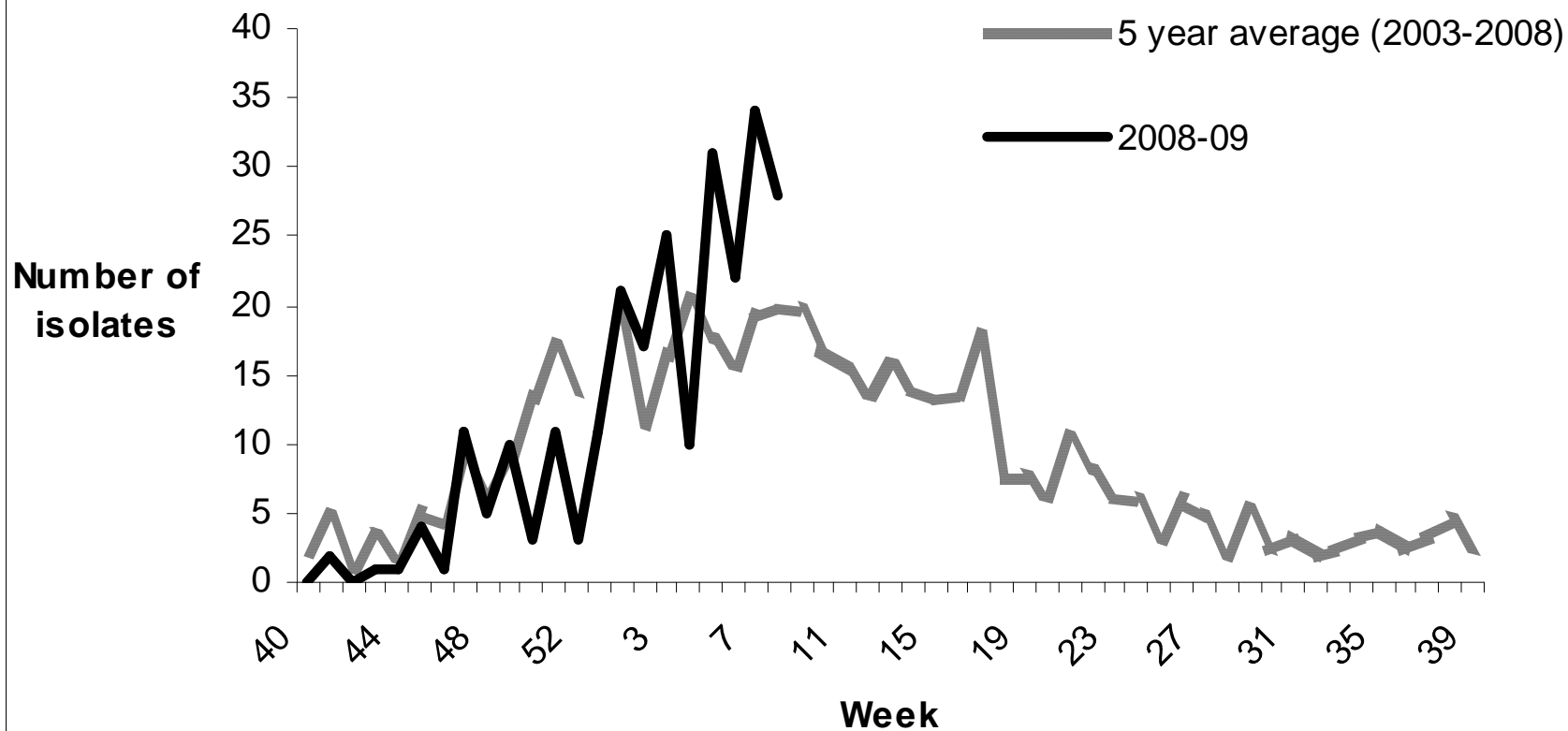
Virus Isolates and Percentage of Respiratory Specimens Submitted to BC Provincial Laboratory Diagnosed Positive for a Virus, per Week British Columbia, 2008-2009



Virus Isolates and Percentage of Respiratory Specimens Submitted to Children and Women's Health Centre Laboratory Diagnosed Positive for a Virus, per Week, British Columbia, 2008-2009

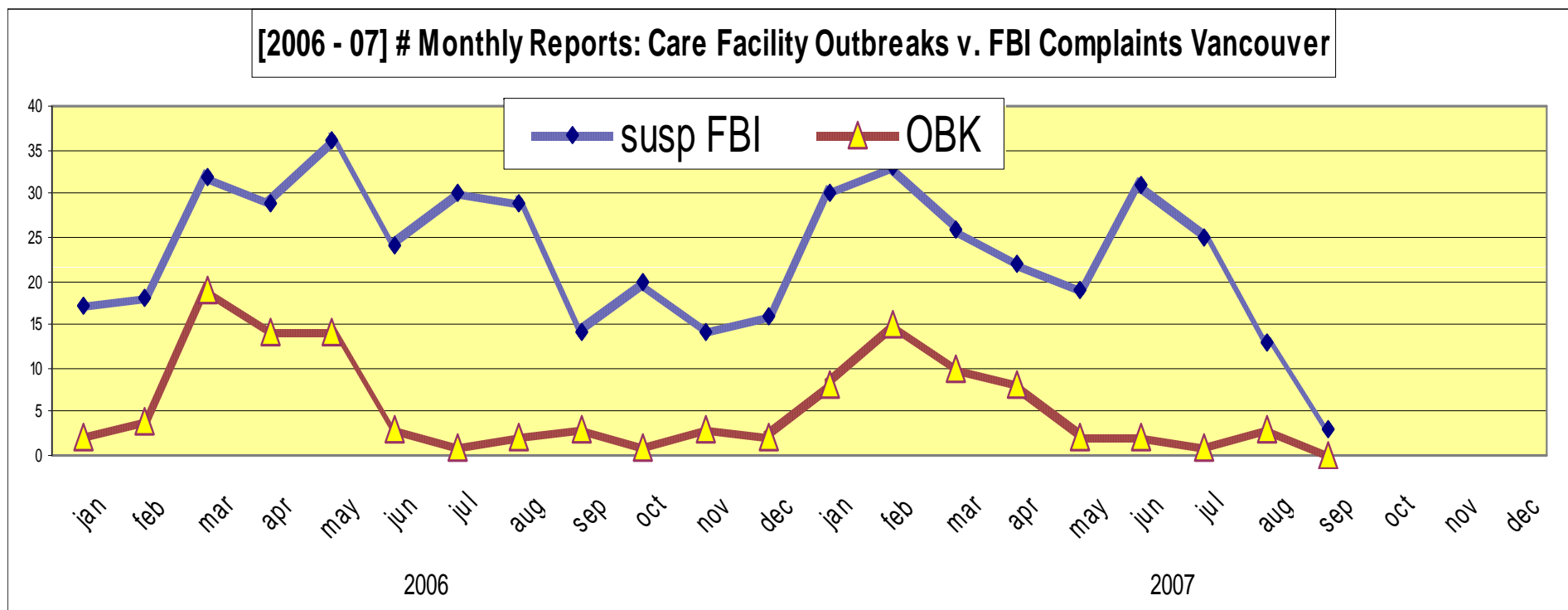


Weekly Number of Norovirus Isolates, BC, 2003-2009



Source: Provincial Laboratory

Suspected Foodborne Illness and Outbreaks



Facility outbreaks:

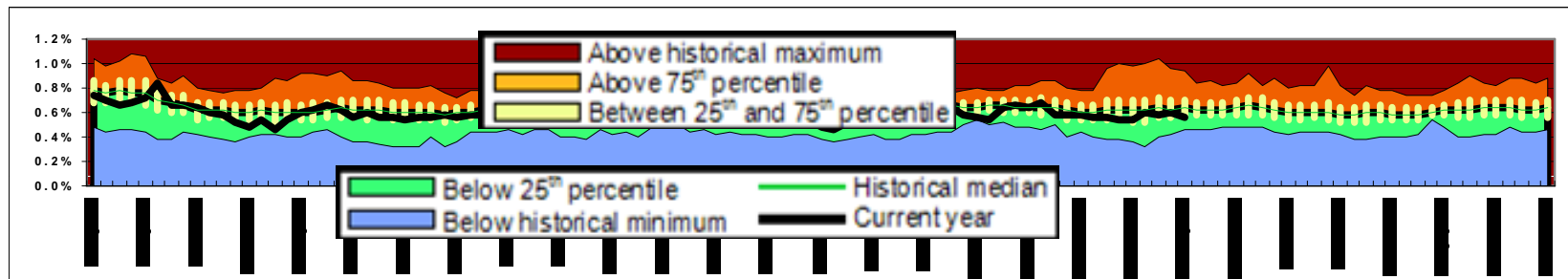
- 45% confirmed norovirus
- 40% consistent with norovirus
- 5% other causes

Medical Services Plan of BC Infectious Enteric Illness Surveillance

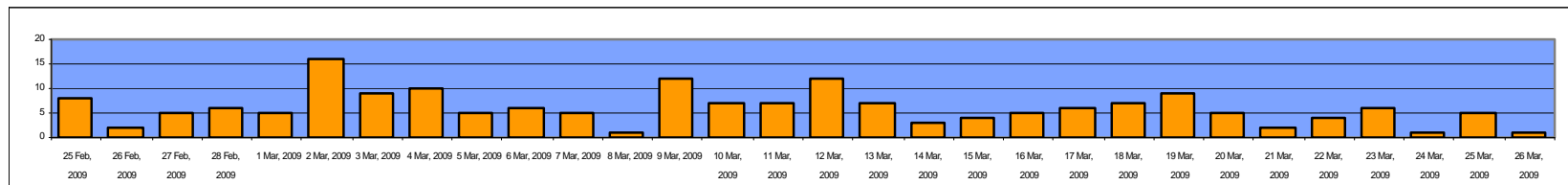
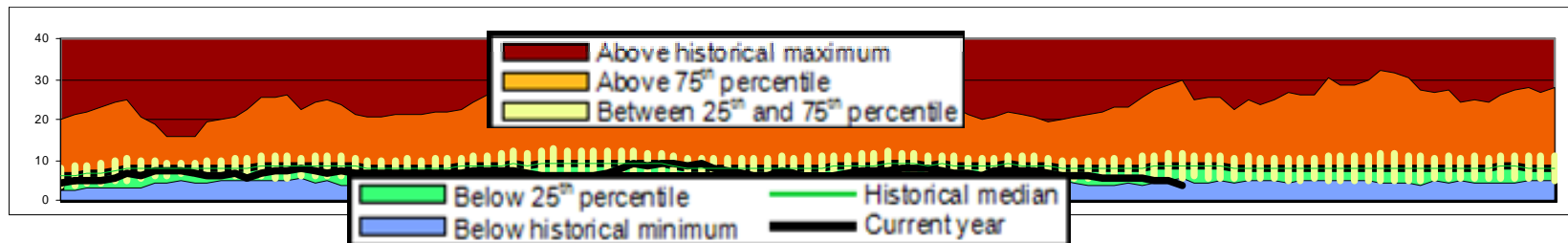
Infectious Enteric Illness Surveillance Pilot Project v1.8

Area: CLNTLHA 161 - Vancouver - City Centre Current to : 26 Mar 2009

003-009, 558 - All Enterics as Percentage of All



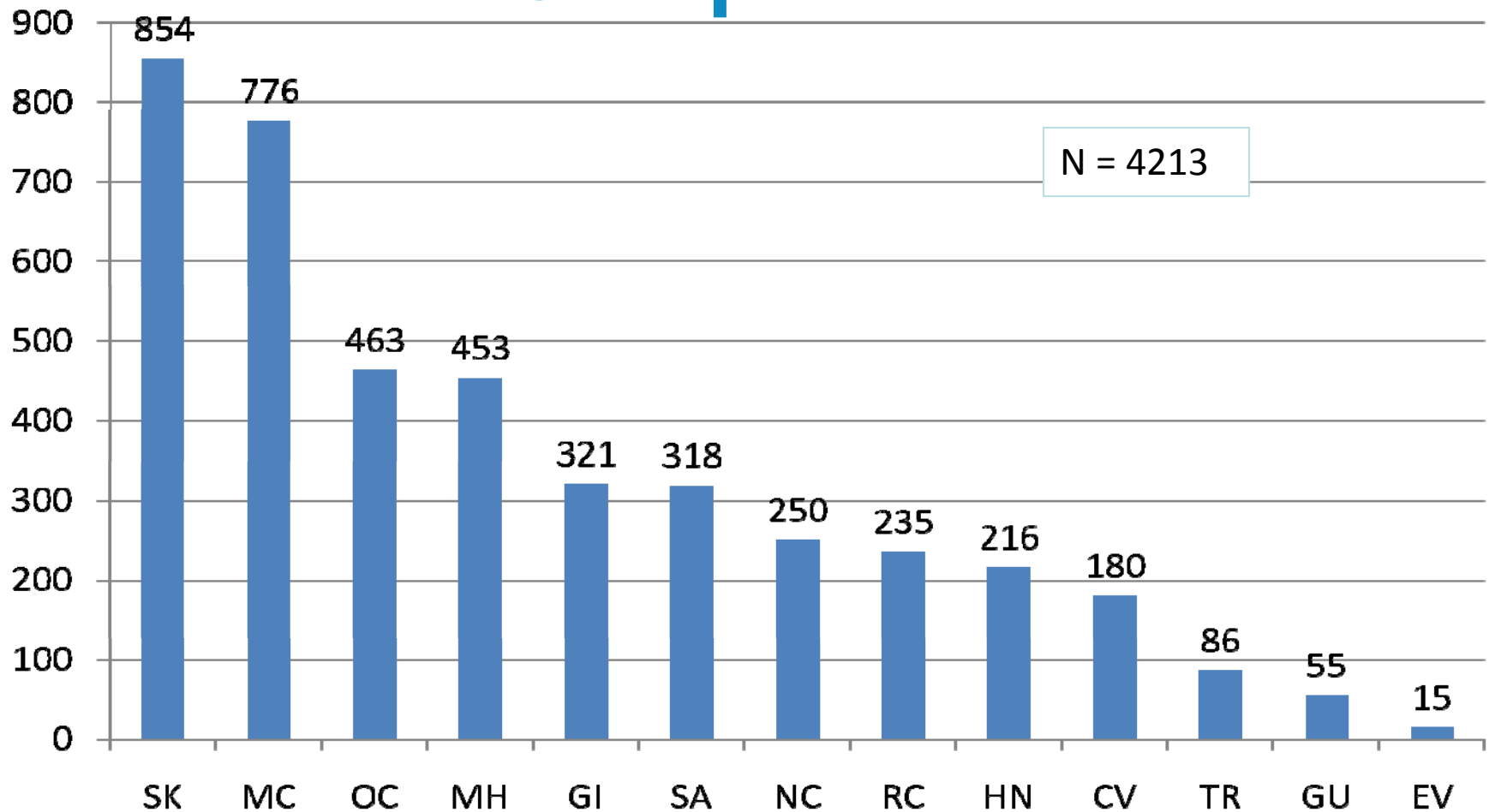
Number of Services (Area Population is 104,586)



Emergency Room Data

- 6 Emergency Rooms
 - All have different information systems
- Analysis of “Chief Complaint” data by PHSU
 - Of limited value
- St. Paul’s Hospital
 - Discharge diagnosis collected in real time
 - Useful for public health

SPH Homeless Presenting Complaint

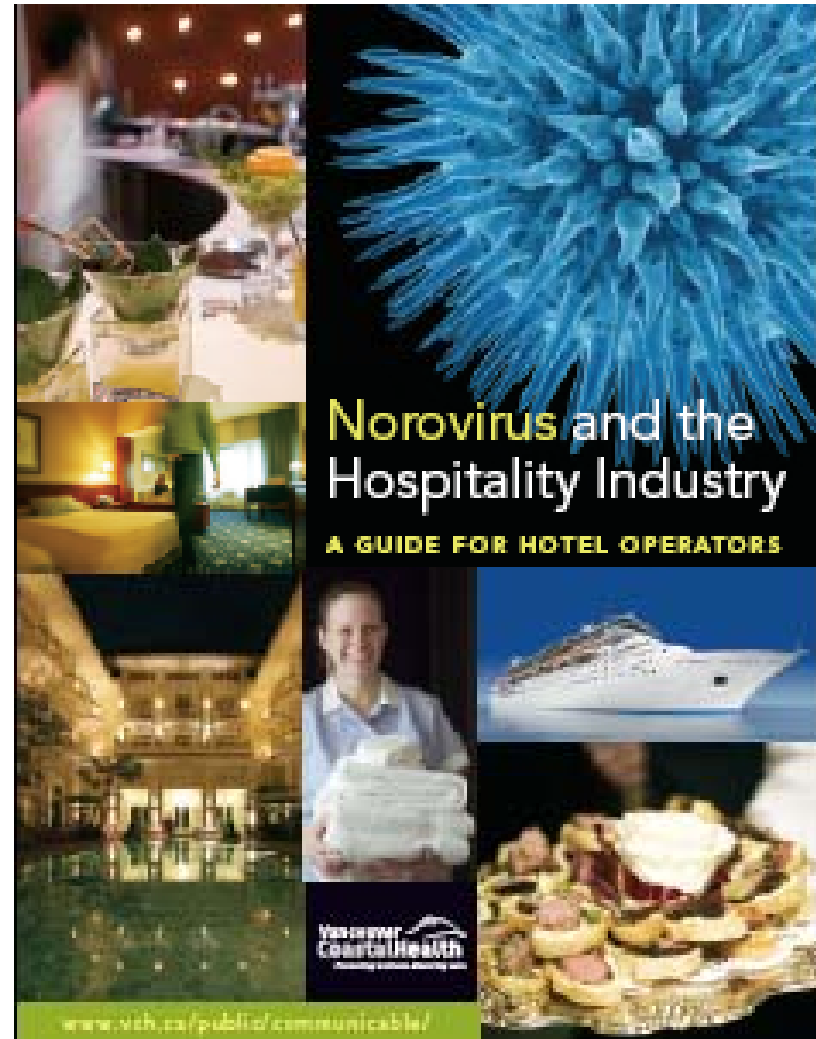


Data Enhancements

- VANOC Polyclinic/Venue Medical Services data
 - Clinical information system – ATOS Origin
 - Daily data transfer to VCH for analysis
 - Diagnostic codes – not syndromes

Data Enhancements

- Hotels
 - VANOC Medical Services at Olympic Family Hotels
 - Links with other hotels



Data Enhancements

- Illicit Drug Overdoses
 - BC Coroner
 - Insite (Supervised injection site)
 - BC Ambulance
 - St. Paul's Hospital

Data Enhancements

- BC Nurse Line
 - 811
 - All codes coded by nature of call, location
 - Provide phone number in Olympic Visitors' Guide

Data Enhancements

- Injury Surveillance
 - BC Injury Research and Prevention Unit
 - ER data
 - BC Ambulance data
 - Poison Control
 - Vancouver Police Department
 - *Injury surveillance system a key public health legacy*

Communication Links

- **VCH**
 - Physicians
 - Hospitality industry
 - Aboriginal communities
 - Non-governmental organizations
- **External Stakeholders**
 - Other Regional Health Authorities – Medical Health Officers
 - Provincial Health Service Authority, including BCCDC
 - Public Health Agency of Canada
 - Health Canada
 - Canadian Forces Medical Services
 - Neighbouring States

Prevention Initiatives – Games Time

- Public Health Nurses in Polyclinics
 - Communicable disease testing and follow-up
 - Rapid flu tests, enteric testing, Point-of-care HIV
- Cluster and outbreak investigation
 - Public health inspectors in Villages
 - Laboratory linkages for expedited testing

Health Protection

- Food Safety and Quality
 - HACCP-based inspection back to suppliers
 - Daily venue inspections during Games
 - Enhanced pre-Games inspection of all VCH food service establishments
- Water Quality
 - Enhanced monitoring and reporting of bacteriological, chemical and physical parameters during Games
- Air Quality
 - Air Quality Health Index

Public Health Reports

- Produced monthly
 - Broad electronic distribution
- Planning activities, issue identification, surveillance data, health protection reports

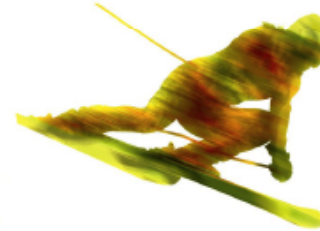
Air Quality Health Index: A New Way to Think About Air Pollution

The BC Ministry of Environment has piloted a new Air Quality Health Index (AQHI) in communities around the province. Soon to go "national", the AQHI is designed to help people understand what air quality means to their health. The index includes:

- A number from 1 – 10+ (the higher the number the poorer the air quality);
- The level of health risk associated with the index (low, moderate, high or very high health risk);
- Customized health messages for the general population and for "at risk" populations.

The AQHI is calculated based on the relative risks of pollutants known to harm human health, including ozone (O₃), fine particulate matter and nitrogen dioxide (NO₂).

During the Olympic and Paralympic Winter Games in 2010, the AQHI for all games venues will be reported in VCH's daily Olympic/Paralympic Health Watch.



be your best.
be tobacco free.



Building Capacity

As part of continuing program enhancements, the Public Health Surveillance Unit, together with the Communicable Disease Control and Environmental Health Divisions, will be offering a series of in-house courses for frontline staff. The courses will develop capacity in conducting public health investigations and responding to public health concerns.

In a further effort to build capacity within VCH, our staff will take part in workshops to be offered by the Canadian Field Epidemiology Program (CFEP) in November, 2008.

CFEP representatives met recently with senior VCH staff to determine the scope of workshops to be offered. These will be tailored to include VCH perspectives on planning and preparations for the Winter Olympic and Paralympic Games in 2010.

The proposed workshops include Mass Gathering Surveillance, Rapid Assessment in Complex Emergencies, Forensic Epidemiology and Concepts in Spatial Epidemiology in Field Investigations.

Updating Physicians

VCH will provide family physicians with information about the medical programmes in place to support the 2010 Olympic/Paralympic Games using the VCH Physicians' Update, a quarterly newsletter from Medical Health Officers throughout the region to physicians in their areas.

Public Health Reports

- Produce daily during the Games
 - Surveillance report – All reported data
 - Air and water quality
 - Weather
 - Inspection reports
 - Health promotion activities and awareness
- Distribute to IOC, partners and the public
- Post to the web