



**Extreme IPC .....  
Absolutely!**

## **H1N1 Outbreak in the Alberta Blood and Marrow Transplant Program**

Karen Pauling-Shepard  
Infection Control Practitioner  
Calgary Zone  
2010 September 17



## TBCC BMT Clinic



## Calgary BMT Stakeholders



- FMC Unit 57/TBCC BMT clinic
- Apheresis Unit
- Infection Prevention Control
- HLA Tissue Typing Lab
- HPC Processing Lab
- Calgary Lab Services/Provincial Laboratory
- Canadian Blood Services One Match Program
- Alberta Children's Hospital
- Communicable Disease Unit

## TBCC BMT Team



- 12 Administrative Support (9.2 FTE)
- 9 Couriers (40 trips/year)
- 3 Data Managers (3.0 FTE)
- 2 Pharmacists (1.0 FTE)
- 1 Porter (0.6 FTE)
- 2 Psychologists (2.0 FTE)
- 1 Radiation Therapist (1.0 FTE)
- 1 Radiation Oncologist (0.5 FTE)
- 1 Registered Dietitian (0.5 FTE)
- 26 Registered Nurses (18.1 FTE)
- 2 Research Staff (2.0 FTE)
- 1 Social Workers (1.0 FTE)
- 10 Transplant Physicians

## Clinical Indications for Autologous Stem Cell Transplant



- Multiple Myeloma
- Amyloidosis
- Lymphoma
  - Indolent NHL
  - Aggressive NHL
  - Hodgkin's

## Clinical Indications for Allogeneic Stem Cell Transplant



- Leukemia
  - AML, CML, ALL, CLL
- Lymphoma
  - NHL
- Myelodysplastic Syndrome (MDS)
- Aplastic Anemia

## Why BMT patients are at risk for infections



- Frequent encounters with health care facilities:
  - Prior hospital admissions
  - Invasive procedures/devices
- Immunodeficient from:
  - Disease (primary, secondary, or relapsed) and/or
  - Chemotherapy, immunosuppressive drugs
  - Stem Cell Transplant
  - Co-morbid diseases

## Ways to prevent infections



- Hand Hygiene
- Routine/Standard Practices
- Patient accommodation
  - Protective Environment (in-patient)
- Triage for communicable illnesses
  - Upper respiratory viral illness
  - Diarrhea
  - Rashes

## Ways to prevent infections



- Transmission-based isolation precautions
  - Inpatient
  - Outpatient - Isolation with/without walls
- Environmental/Equipment Cleaning and Disinfection
- Education to BMT stake holders, patient, family/visitors
- Vaccinations for health care workers and patient families/care givers

## Alberta Blood and Marrow Transplant Program



Vaccinations – routine (12 months post SCT)

- Diphtheria, Tetanus, Pertussis
- Haemophilus Influenza type B
- Hepatitis B
- Pneumococcal
- Meningococcal
- MMR\*\*
- Varicella\*\*
- **Influenza\***
- Polio

\* 6 months \*\* 24 months

## H1N1 Outbreak in the BMT Clinic “The Perfect Storm”



2009 July 14-28

- 7 BMT outpatients with lab confirmed H1N1
- > 3 patient family caregivers with ILI
- 5 HCW with ILI, 3/5 with lab confirmed H1N1

## Communication Challenges



- **Pandemic with novel infectious disease**
- **Outbreak in a high risk patient population**
- **Evolving recommendations for patient management**
- **Brand new provincial health care model**
- **Summer holidays**

## Communication Strategies



- Declaration of H1N1 Outbreak, activation of (customized) Respiratory Outbreak Protocol
- Recruitment of BMT Stakeholders to participate in Outbreak Control measures
- Daily outbreak meetings to review clinical issues with patients, BMT team concerns, process, environmental, pandemic issues
- Daily communiqués to Administration(s)

## Communication Strategies

- Notification of TBCC Clinical Stakeholders
  - Pharmacy
  - Medical Oncology
  - Radiation Oncology
  - Medical Day Care Clinic
  - Outpatient Clinic
  - Radiation Therapy Areas
  - Hostel, BMT family housing
  - Cross Cancer Institute, Associated Cancer Centres
  - Volunteers
  - Support Services

## Communication Strategies

- Approved AHS H1N1 signage throughout TBCC and FMC
- H1N1 Education sessions for HCW
- AHS Communications-Approved Patient letters
- Phone calls to patients/families for follow-up screening and appointment changes

## H1N1 Outbreak in the BMT Clinic “The Perfect Storm”

- After two H1N1 Influenza incubation periods with no new cases, outbreak declared over on 2009 August 04
- Most BMT patients continued to shed H1N1 virus for several weeks-months
- Infectious disease containment measures for inpatient and outpatient BMT areas continue

