Imported Cases of Chikungunya Among Canadian Travellers

Michael Drebot, PhD, ARMCCM
Chief, Viral Zoonoses & Director of Science Technology and Core Services

National Microbiology Laboratory, Public Health Agency of Canada, Winnipeg, Manitoba
The **Canadian Science Centre for Human and Animal Health** is a high-security bio-containment facility housing two Government of Canada infectious disease laboratories; (National Microbiology Laboratory – BSL 2, 3, 4), & National Centre for Foreign Animal Diseases (L2,3,4)
Canadian Suspect CHIK Cases Sent to National Microbiology Laboratory (Viral Zoonoses, WHOCC)

- Travel History and Clinical Criteria / Symptoms (?)
- Hospitals, etc, - Samples → Provincial Public Health Laboratories → National Laboratory

Map of Canada showing the flow from PHLs to NML, Winnipeg, MB.
Diagnostics

- **Hemagglutination Inhibition** (HI) serology was used to identify Chikungunya antibody in patient sera (differentiates CHIK from EEE & WEE, 320 titres vs 10,20)

- CDC IgM / IgG ELISAs and plaque reduction neutralization tests being applied as well

- Conventional and real time RT-PCR was performed on selected sera using primers specific for NSP, etc. genes of virus
Importation of Chikungunya Virus from Indian Ocean: Canadian Cases During Outbreak 2005-2007

Total Chikungunya Cases = 33 Canadians (7 provinces)

2005-1 case (Quebec)

2006-20 cases (BC-1, AB-1, SK-1, MB-2, Ontario-11, PQ-4)

2007-14 cases (AB-2, MB-2, Ontario-6, PQ-3, NS-1)

Travel History Included: Reunion Island, Mauritius, India, Madagascar, Sri Lanka, Cote d’Ivoire

Clinical symptoms/disease: fever, myalgia, arthralgia & rash
TOTAL PROBABLE - CONFIRMED CANADIAN CHIKUNGUNYA CASES BY YEAR

(56 Cases 2005 – 2010)

YEAR

# of CASES

2005: 1
2006: 20
2007: 14
2008: 6
2009: 7
2010: 8

Map showing the distribution of cases across provinces and territories in Canada.
Results

• Imported cases (56) were identified among travellers from 8 Canadian provinces from 2005 – 2010

• Travel to: Reunion Island, Mauritius, India, Madagascar, Sri Lanka, Indonesia, Cote d’Ivoire, etc.

• Clinical symptoms included fever, rash and severe joint pain

• HI titres ranged from 40 to 2560 using CHIKV antigen (mouse brain) with seroconversions documented in a number of cases. Minimal cross reaction to WEE and EEE antigens was observed

• A number of the suspect cases also had antibody to flaviviruses such as dengue.
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