Paramedic Chiefs of Canada

Chefs Paramédics du Canada

Session Facilitator

Michael McKeage, Director

Yukon Emergency Medical Services

EMS Ebola Working Group International Teleconference

October 30, 2014

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Facilitator:

Michael McKeage

Director

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Yukon Territory, Canada

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Previous Sessions

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- October 9,2014.

  Norman Seals, Assistant Chief, EMS, Dallas (Texas) Fire Department

- October16,2014.

  Dr. Jeff Clawson, International Academies of Emergency Dispatch

  Dr. Conrad Fivaz, International Academies of Emergency Dispatch

  Dr. John Lowe, Director doe Public Health Training and Exercise Programs for the Bio Preparedness University of Nebraska Medical Center

  Lloyd Rupp, Battalion Chief, Omaha Fire Department

- October 23,2014.

  Wade Miles Interim Director of EMS Operations Grady EMS Atlanta, GA
  Aaron Jamison Special Operations Team Captain Grady EMS Atlanta, GA
  Alexander P. Isakov, MD, MPH Associate Professor of Emergency Medicine Emory University School of Medicine and Director, Section of Prehospital Disaster Medicine Atlanta, GA

Visit www.paramedicchiefs.ca/eid
to view previous session recordings

Q&A Resource

Paramedic Chiefs of Canada
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Charlene Vacon, PhD, AEMT-CC

Research Advisor, Urgences-santé, Montréal QC

Vice-president, Quebec Alliance of Paramedic Professionals for Excellence (APPEX)

Research Ethics Board Member, IntegReview

First Responder, Saint-Lazare Fire Department

Leadership Development Committee Member, Paramedic Chiefs of Canada

Scholarly interests: systems research in prehospital services and the social history of paramedics in Canada

Charlene.vacon@urgences-sante.qc.ca

Paramedic Chiefs of Canada Ebola Working Group International Teleconference

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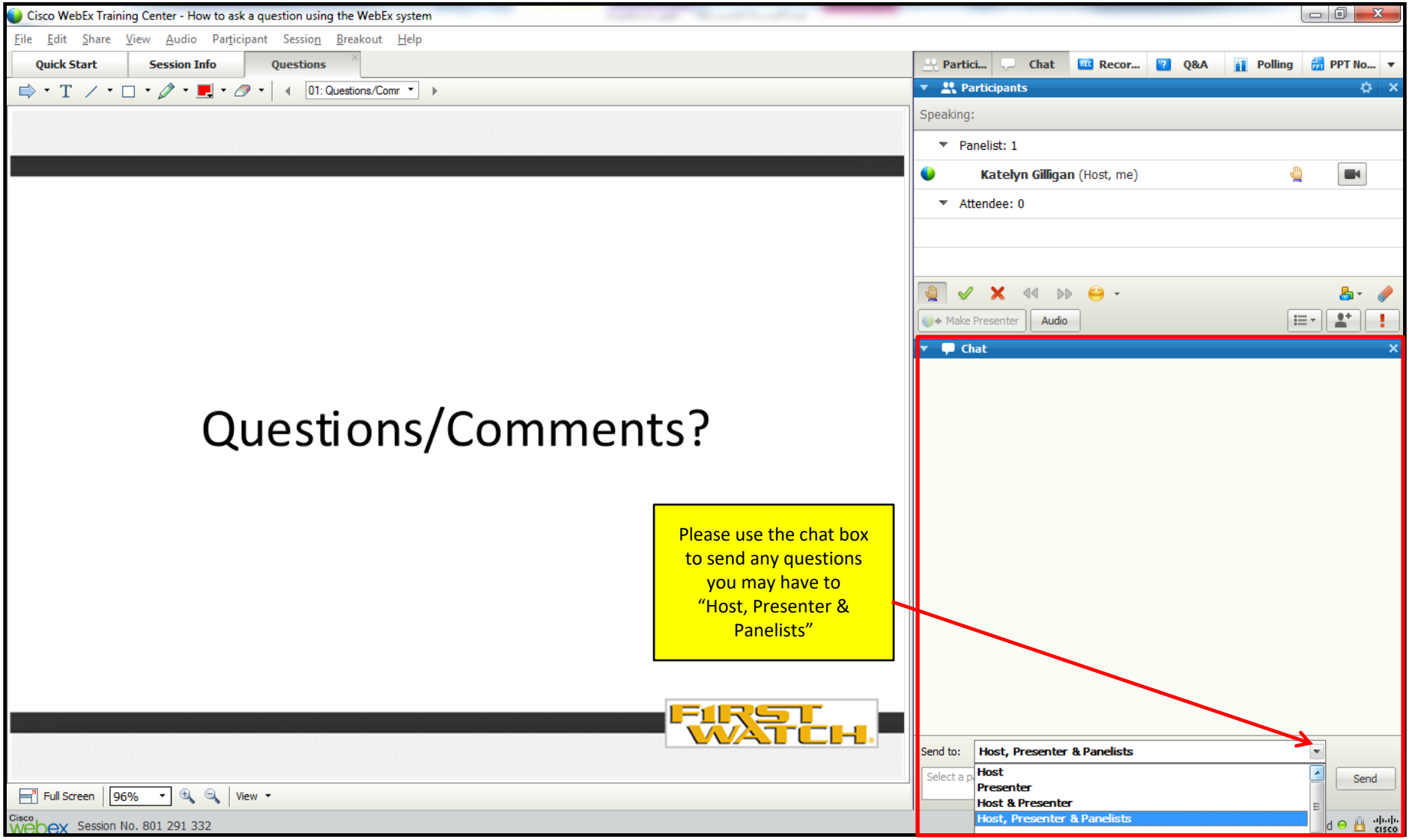

Agenda:

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- Overview/update of Ebola Activity worldwide
  - Dr. Alex Garza
- Receive FirstWatch SitRep on Ebola surveillance activity
  - Mr. Todd Stout
- Listen to guest speakers on select issues
  - Dr. Russell MacDonald
- Participate in an electronic Q&A session with the speaker
- Share solutions regarding specific challenges posed by Ebola

Your materials can be shared by sending them to **eid@ParamedicChiefs.ca** for posting on the Paramedic Chiefs of Canada website.

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Ebola Overview:

Alex Garza, MD, MPH

Medical Director & Homeland Security Advisor, FirstWatch

Associate Dean for Public Health Practice, Associate Professor Epidemiology, St. Louis University

Former Assistant Secretary for Health Affairs & Chief Medical Officer for the US Department of Homeland Security

Former EMT, Paramedic, Flight Medic, Medical Director, Army Batt. Surgeon

agarza@firstwatch.net

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FirstWatch SitRep:

Todd Stout

- Ebola monitoring for EMS
- Overview / big picture
- Best practices
- Other information to share
- Q&A
- www.firstwatch.net/hi

tstout@firstwatch.net

FirstWatch Ebola Monitors
(we call them ‘triggers’)

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Surveillance Best Practices (so far):

- If symptoms, ask travel/contact, fever
  - Avoid similar positive & negative documentation
- 28 ePCR/RMS-based
  - Combination of impressions, temp, custom questions/surveys, free-text
- 16 ProQA/Paramount (EMD)
  - Emerging Infectious Disease (EID) Form
    - To be released this week
    - Codes, free text for travel or contact w/traveler
- 35 CAD-based
  - Combination of chief complaint, user-fields & free-text
- 1 Hospital Emergency Dept-based

Guest Speaker:

Paramedic Chiefs of Canada
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Russell D. MacDonald, MD MPH FRCPC

Associate Professor, Emergency Medicine,
Faculty of Medicine, University of Toronto
Medical Director and Chair, Quality Care Committee, Ornge Transport Medicine
Medical Advisor, Toronto Paramedic Services
Attending Staff, Emergency Services, Sunnybrook Health Sciences Centre
Toronto, Ontario, Canada

Ebola 101 for Emergency Medical Services

Dr. Russell D. MacDonald, MD MPH FRCPC
Associate Professor and Co-Director
Emergency Medicine Fellowship Programs
Faculty of Medicine, University of Toronto

Medical Director and Chair
Quality Care Committee
Ornge Transport Medicine

Medical Advisor
Toronto Paramedic Services

Attending Staff, Emergency Services
Sunnybrook Health Sciences Centre

Thank You

- Paramedic Chiefs of Canada
- Doug Socha and Michael McKeage
- Todd Stout

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Outline for “Ebola 101”

- background and history
- current outbreak status
- facts and truth about Ebola
- treatment
- modifications to paramedic practice
- modifications to paramedic operations
- risk assessment and perspective
- summary

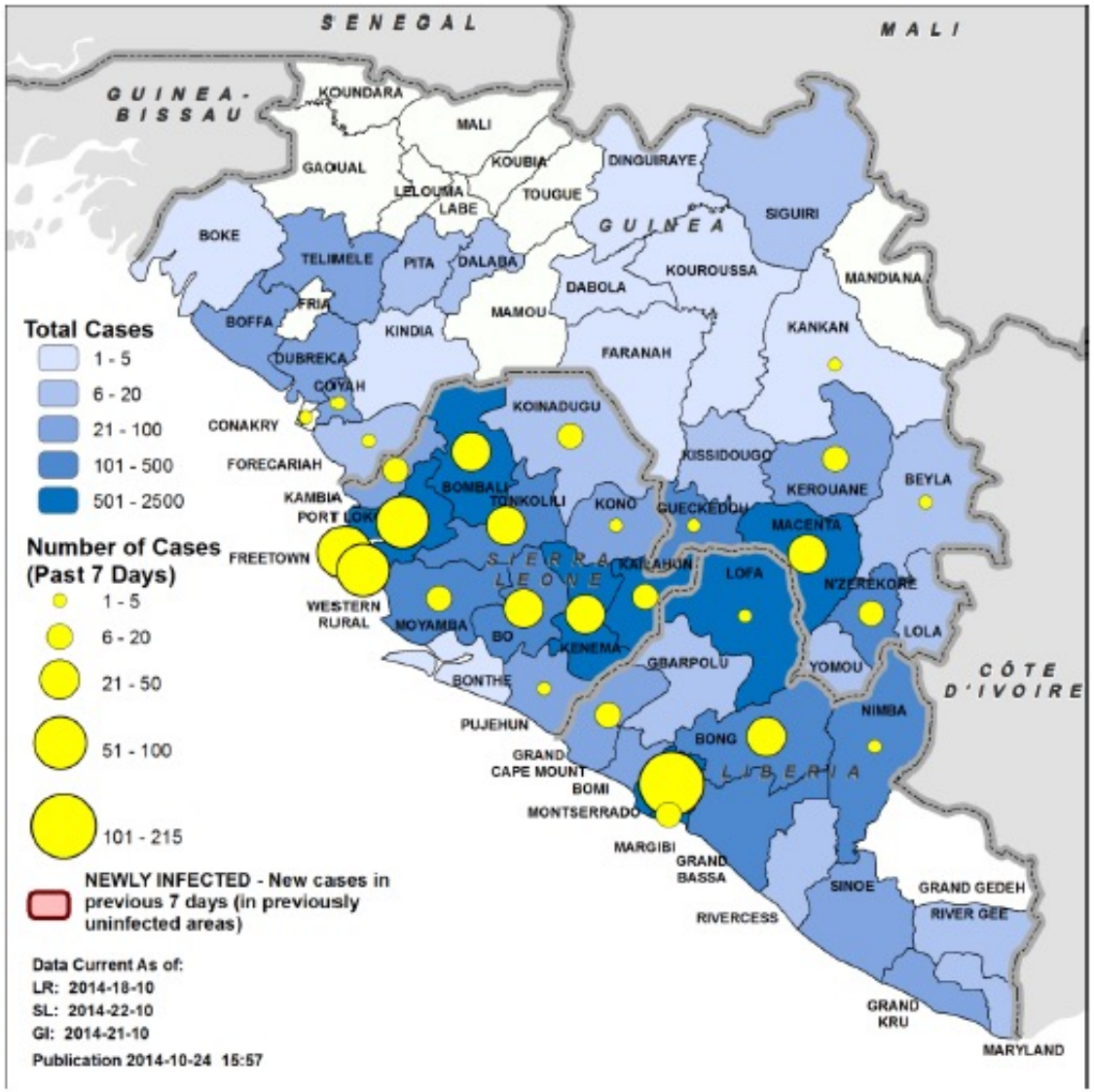
note: information current as of Oct 25, 2014

Ebola Hemorrhagic Fever

- first appeared in Sudan and Democratic Republic of Congo in 1976
  - latter occurred in a village near Ebola River, from which disease takes its name

History of Outbreaks

Current Outbreak



Status in West Africa

Guinea
1553 cases / 926 deaths

Liberia
4665 cases / 2705 deaths

Sierra Leone
3896 cases / 1281 deaths

Totals
10114 cases / 4912 deaths

Mortality: 48.6%

Health care workers
450 cases / 244 deaths

Current Outbreak

- imported cases (current)
  - Nigeria*: 20 cases / 8 deaths
  - Senegal**: 1 case / 0 death
  - Mali: 1 case / 1 death
  - Spain: 2 cases / 0 deaths
  - USA: 4 cases / 1 death

*declared Ebola-free Oct 19th

**declared Ebola-free Oct 17th

Unrelated Outbreak

- Democratic Republic of Congo
  - unrelated to outbreak in West Africa
  - 67 cases / 49 deaths
  - 1121 contacts: 1116 completed 21-day follow-up
    - considered free of disease
  - last reported case discharged from hospital October 10th
  - if no new cases, outbreak will be declared over November 21st

Ebola Out of Africa

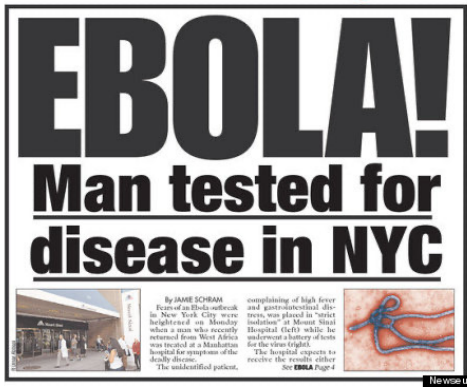
- 1st imported case in North America confirmed in Dallas, Texas on Sept 30, 2014
  - patient left Liberia Sept 19th
    - not symptomatic in transit
  - became ill Sept 24th
  - went to hospital Sept 26th: discharged
  - back via EMS 2 days later: admitted
  - patient died Oct 8th

Ebola Out of Africa

- 1st imported case in North America confirmed in Dallas, Texas on Sept 30, 2014
  - two nurses infected: breaks in PPE?
    - 1 discharged from hospital: disease-free
    - 1 in hospital, doing well
  - contact tracing (Texas):
    - 176 possible contacts, 109 closely monitored
    - 67 completed 21-day follow-up: not infected
  - contact tracing (Ohio):
    - 153 airline passengers and crew undergoing follow-up
    - all considered low risk

Ebola Out of Africa

- 2nd imported case in North America confirmed in New York City on Oct 23, 2014
  - doctor returned from Guinea on Oct 17th
  - asymptomatic on arrival
  - reported fever Oct 23rd
  - transported to hospital via EMS
  - tested positive Oct 23rd
  - 3 close contacts quarantined



- hospital staff calling in sick
- New York and New Jersey enact quarantine for those in direct contact with Ebola patients
- US considering quarantine for anyone returning from West Africa

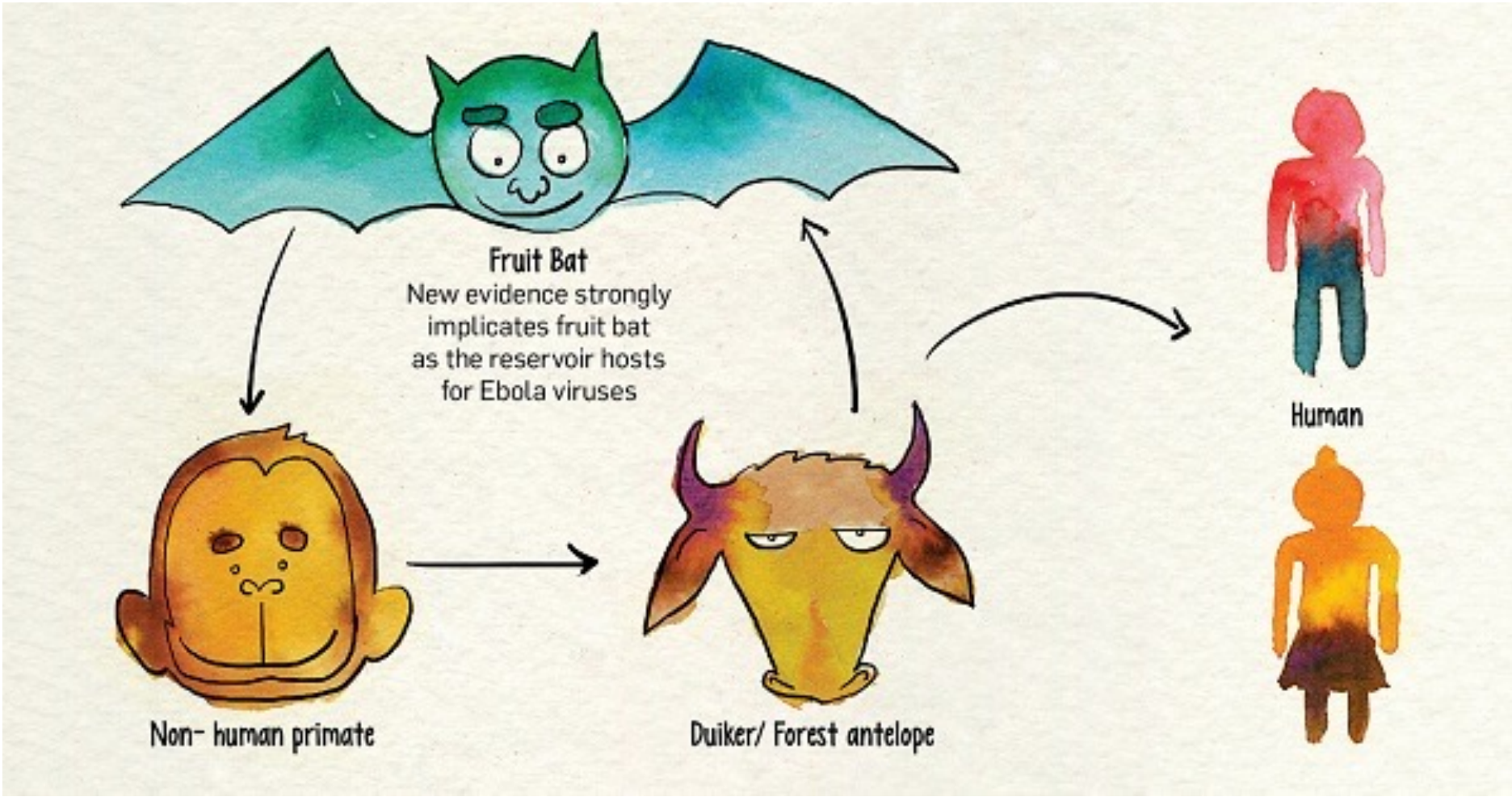
Ebola Out of Africa

- 2nd imported case in North America confirmed in New York City on Oct 23, 2014
  - *"The chance of contracting virus next to nil"*
    - Health Commissioner Mary Bassett
  - *"There is no cause for alarm…Ebola is an extremely hard disease to contact. There is no reason for New Yorkers to change their daily routines"*
    - Mayor Bill de Blasio
  - *"The goal…is to make sure people don't panic."*
    - City Councilman Mark Levine

“Ebola 101” – The Facts

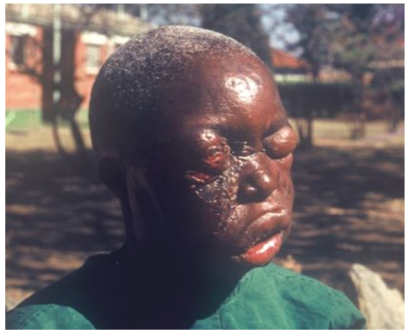
- many different hemorrhagic fevers:
  - Crimean-Congo, Lassa, Marburg, Rift Valley, Omsk
- caused by 5 related families of viruses
- depend on animals as host
- humans are not natural reservoirs
  - humans get infected when contacting infected animal host or human-to-human transmission
- cause sporadic, unpredictable outbreaks
- requires contact with infected blood or body fluid to transmit disease
  - not airborne or droplet spread

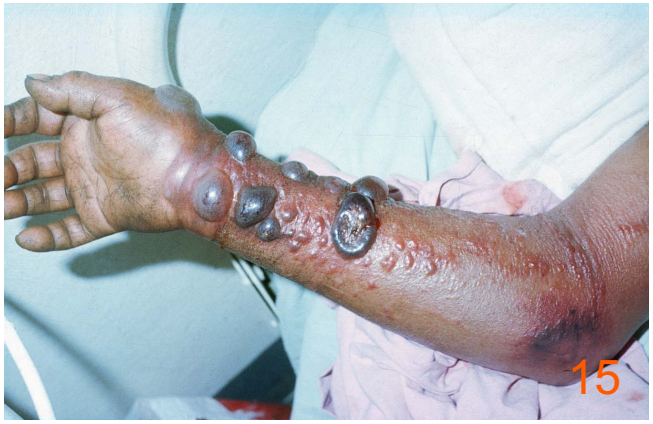
Transmission



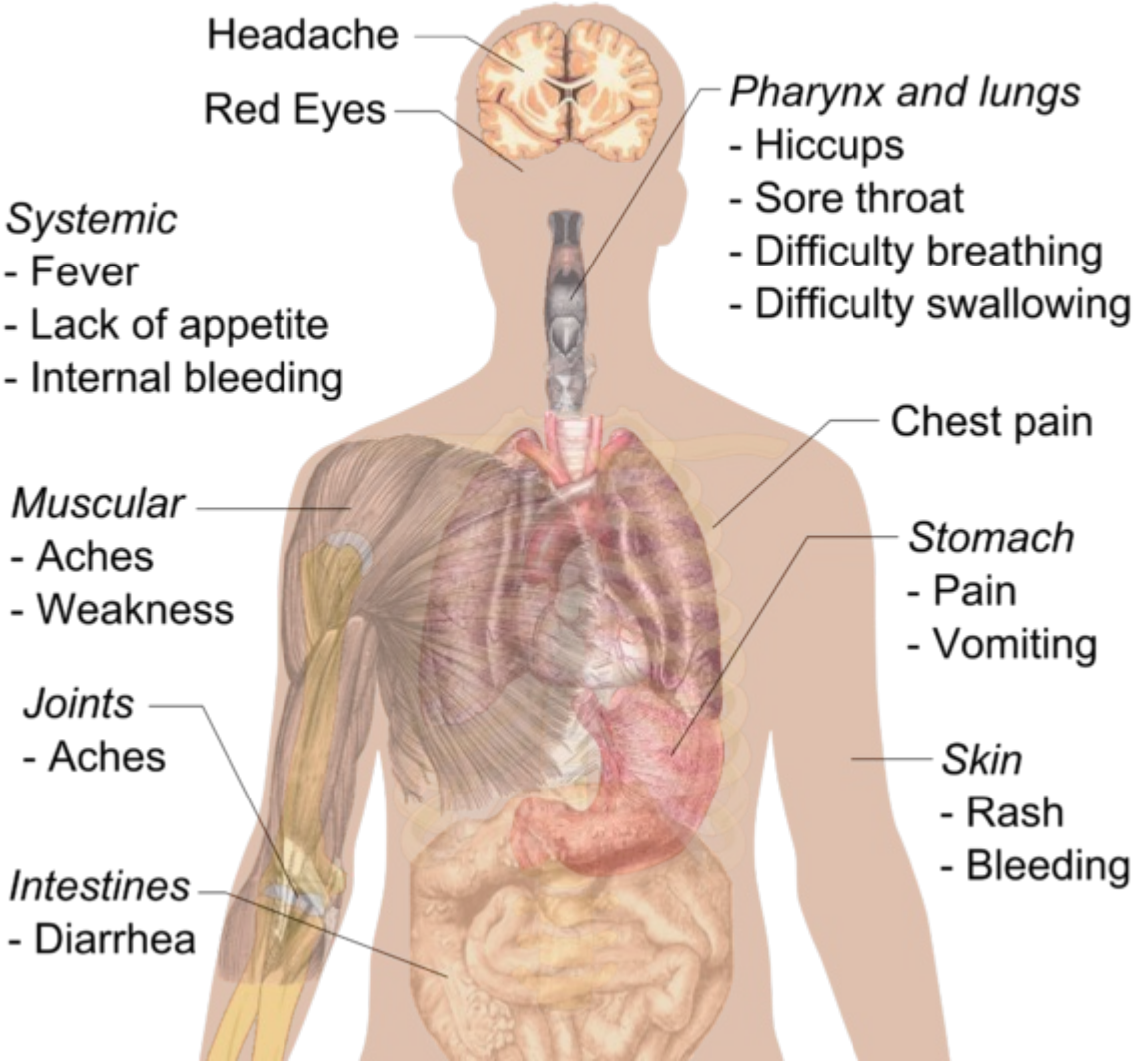
Transmission

- natural reservoir: fruit bats
- fruit bats infect primates
- transmission to humans: handling hosts
- 2 to 21 day incubation period
- humans not infectious until symptomatic
- human-to-human transmission: infected blood and body fluid





Signs and Symptoms



Treatment

- no known cure
- supportive care
  - rehydration
  - nutrition
  - support of end-organ function
- numerous experimental therapies
  - immune therapies
  - drug therapies
  - vaccines

- prevention is key to avoiding illness

Prevention

- reduce wildlife-to-human transmission
- reduce human-to-human transmission

- identify and caution with at-risk patient

- avoid contact with blood and body fluid
- avoid aerosol-generating procedures

- use appropriate PPE!

Modifications to Paramedic Practice

- "routine care" per protocol / directive
- limit or avoid
  - aerosol-generating procedures
    - placing or removing advanced airways
      - bipap, KingLT, LMA, ETT, and others
    - suctioning airway
    - nebulized or MDI medications

Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J. Aerosol Generating Procedures and Risk of Transmission of Acute Respiratory Infections to Healthcare Workers: A Systematic Review. PLoS ONE 2012;7(4): e35797. doi:10.1371/journal.pone.0035797o

Modifications to Paramedic Practice

- limit or avoid
  - invasive procedures
    - needle thoracostomy
    - placing lines, tubes, or drains
    - CPR
  - sharps
    - no “routine” fingersticks, needles, or catheters
  - exposure to body fluids or secretions
    - put a mask on the patient
    - wear impermeable PPE
    - wrap the patient in something
    - empty fluid containers prior to transport

Modifications to Paramedic Practice

- what about cardiorespiratory arrest?
  - known or suspected Ebola:
    - if end-stage or terminal disease, chance of meaningful resuscitation may be ~nil
  - Public Health Agency of Canada:
    - "*Patients with late stage (Ebola) who experience unwitnessed cardiac arrest have minimal expectation of survival, and therefore not initiating resuscitation efforts is appropriate to avoid unnecessary risk to healthcare staff*"
    - *"Staff must not take shortcuts in donning appropriate PPE"*

Modifications to Paramedic Practice

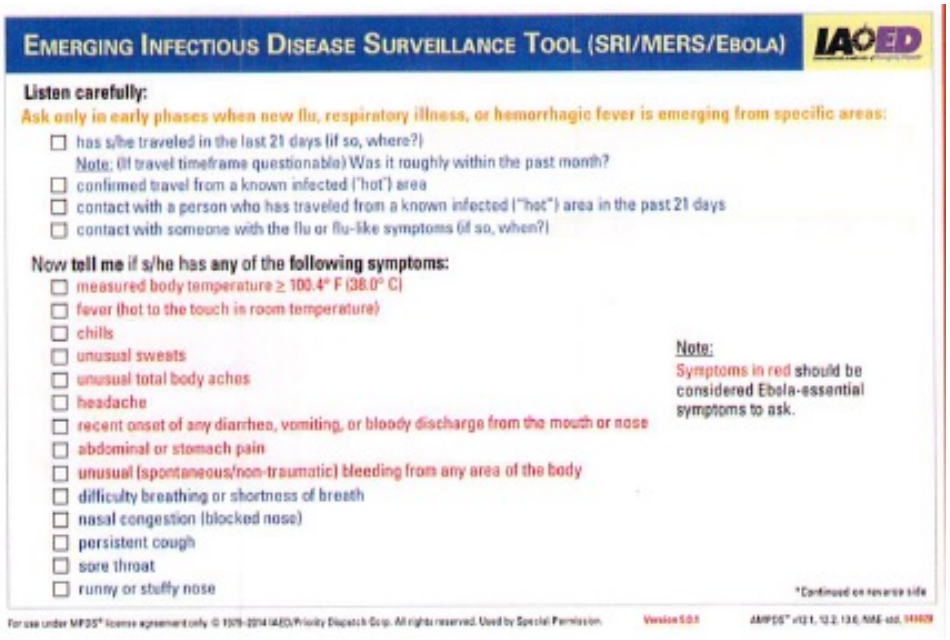
- what about cardiorespiratory arrest?
  - Ebola status unknown:
    - termination of resuscitation rules still apply
  - remember Public Health Agency of Canada:
    - *“Staff must not take shortcuts in donning appropriate PPE”*

Modifications to Paramedic Operations

- before getting the call: plan and prepare
  - infection control and prevention review
  - regular PPE education
  - N95 respirator fit-testing
  - sufficient PPE supplies
  - immunizations
  - medical protocol modifications
  - established interagency procedures
    - fire, police, public transit
    - hospital system, public health officials
    - media
  - interfacility transports?
  - consider IMS command and control structure

Modifications to Paramedic Operations

- getting to the call: identify and notify
  - communication center / dispatch
    - call screening to identify of at-risk patients
    - pre-arrival crew notification



EMERGING INFECTIOUS DISEASE SURVEILLANCE TOOL (SRI/MERS/EBOLA) IAED

Listen carefully:

Ask only in early phases when new flu, respiratory illness, or hemorrhagic fever is emerging from specific areas:

- ☐ has s/he traveled in the last 21 days (if so, where?)
  Note: (If travel timeframe questionable) Was it roughly within the past month?
- ☐ confirmed travel from a known infected ("hot") area
- ☐ contact with a person who has traveled from a known infected ("hot") area in the past 21 days
- ☐ contact with someone with the flu or flu-like symptoms (if so, when?)

Now **tell me** if s/he has **any** of the **following symptoms:**

- ☐ measured body temperature ≥ 100.4° F (38.0° C)
- ☐ fever (hot to the touch in room temperature)
- ☐ chills
- ☐ unusual sweats
- ☐ unusual total body aches
- ☐ headache
- ☐ recent onset of any diarrhea, vomiting, or bloody discharge from the mouth or nose
- ☐ abdominal or stomach pain
- ☐ unusual (spontaneous/non-traumatic) bleeding from any area of the body
- ☐ difficulty breathing or shortness of breath
- ☐ nasal congestion (blocked nose)
- ☐ persistent cough
- ☐ sore throat
- ☐ runny or stuffy nose

Note: Symptoms in red should be considered Ebola-essential symptoms to ask.

*Continued on reverse side

Version 5.0.1

Recent Travel: YES
**** Suspected Infectious Disease ****
M 65 SUDDEN HEADACHE NEW COUGH
[18C04] Sudden onset of severe pain

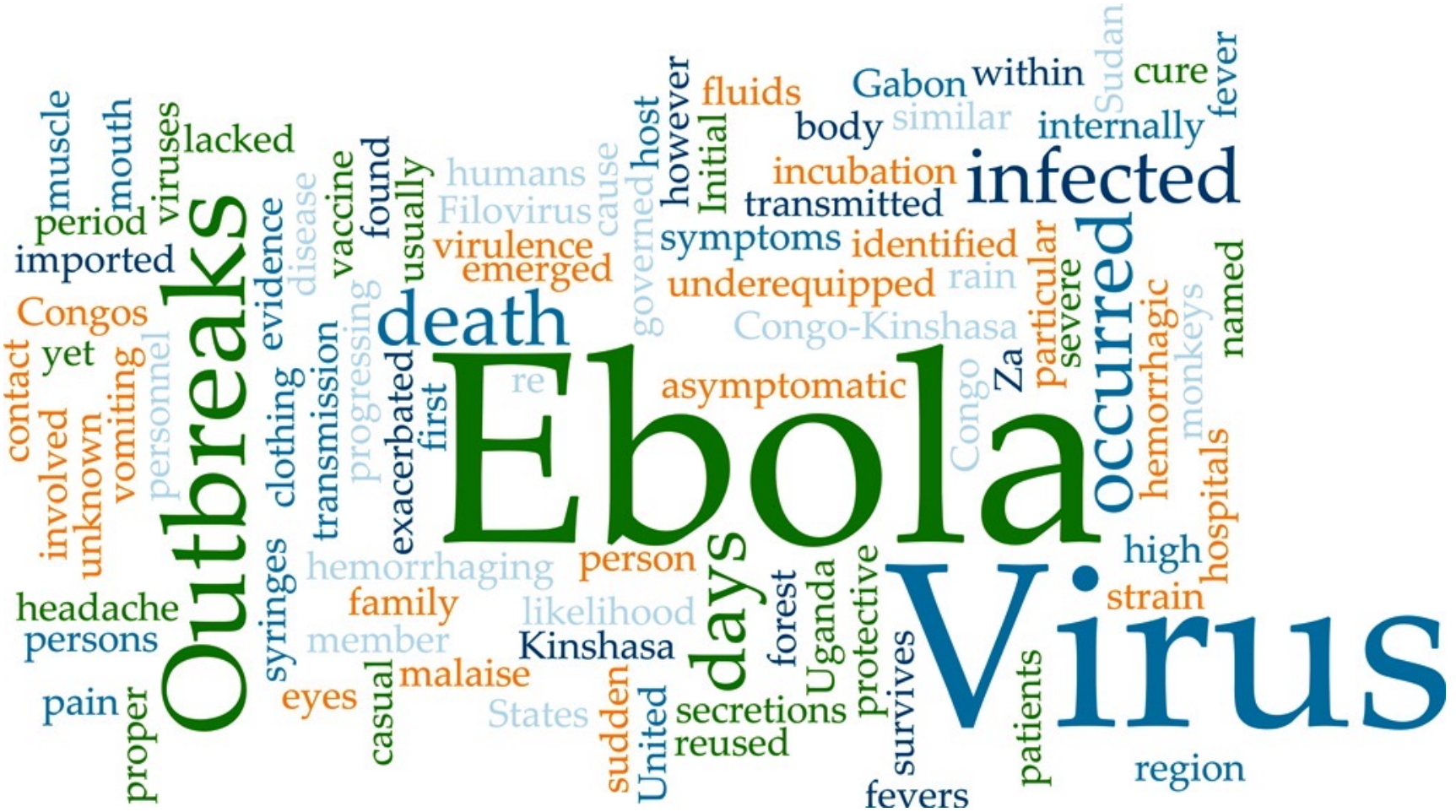
Modifications to Paramedic Operations

- responding to the call: identify and protect
  - identify at-risk patient
  - appropriate PPE use
  - minimize extent and number of patient contacts
  - patient treatment modifications

Modifications to Paramedic Operations

- after the call: careful clean-up
  - dispose of PPE and other items at receiving hospital
  - vehicle cleaning and decontamination
  - paramedic follow-up and monitoring
  - critical incident stress debriefing
  - post-exposure management

Risk Assessment



Risk Assessment

Risk Assessment

Risk Assessment

- “infectious”: invasion of a host by disease-producing organism
- “contagious”: disease transmitted from person to person

- not all infections are contagious
  - malaria: infectious but not contagious
  - chickenpox: infectious and contagious
  - SARS: infectious and highly contagious

- Ebola is very infectious but only moderately contagious

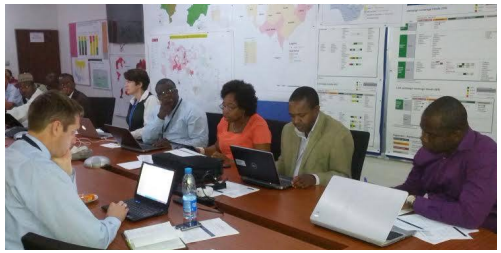
Risk Assessment

- consider Nigeria
  - Lagos: Africa's largest city
    - commercial, shipping, and transportation hub
    - >21 million people
  - index patient identified in Lagos on July 20th
    - he died July 25th
  - within a week, 19 more cases identified
  - last cases identified Sept 5th
  - declared Ebola-free on Oct 20th

Fasina FO, Shittu A, Lazarus D, et al. Transmission dynamics and control of Ebola virus disease outbreak in Nigeria, July to September 2014. Eurosurveillance 2014;19(40). Available at http://eurosurveillance.org/images/dynamic/EE/V19N40/art20920.pdf

Risk Assessment

- why no epidemic or outbreak in Nigeria?



- activated national Emergency Operations Centre
  - experience in outbreak containment
    - polio outbreak in 2012

- rapid national public health response: lots of "boots on the ground"
  - 18,500 in-person follow-up visits
    - found remaining cases amongst contacts
  - information to 26,500 households

- keys to success
  - fast, thorough contact tracing
  - ongoing monitoring of all contacts
  - rapid isolation of all potentially infectious

Risk Assessment

- consider this:
  - US index case lived with family in small residence while symptomatic for 5 days
  - EMS crew transporting US index case are disease-free, despite using basic PPE
  - 7 people (including index case) who contracted Ebola in Africa spent a cumulative >80 days in hospital

Risk Assessment

- consider this:
  - Ebola-positive health care worker flew on commercial airline while symptomatic
  - lab technician who handled Ebola specimens went on a cruise
  - Ebola-positive doctor jogged, took subway, ate at restaurants

Risk Assessment

- consider this:
  - despite all the cases, exposures, contacts, and lapses in PPE, there is still:
    - no community spread
    - no community outbreak
    - no pandemic
    - only 2 cases of secondary transmission since August

Putting It In Perspective

- why an Ebola pandemic in North America is unlikely:
  - animal reservoir found exclusively in Africa
  - people do not eat bush meat or rub / wash dead bodies at funerals
  - not airborne spread
  - infection is lethal short time after ill
  - health-seeking behaviour when ill
  - robust health care system
  - >40 outbreaks yet historical death toll <6000

Putting It In Perspective

"Ebola is relatively easy to contain as long as you isolate any suspected cases and maintain good clinical practices to prevent onward transmission."

Dr. David Heymann
Professor, London School
of Health and Hygiene

Putting It In Perspective

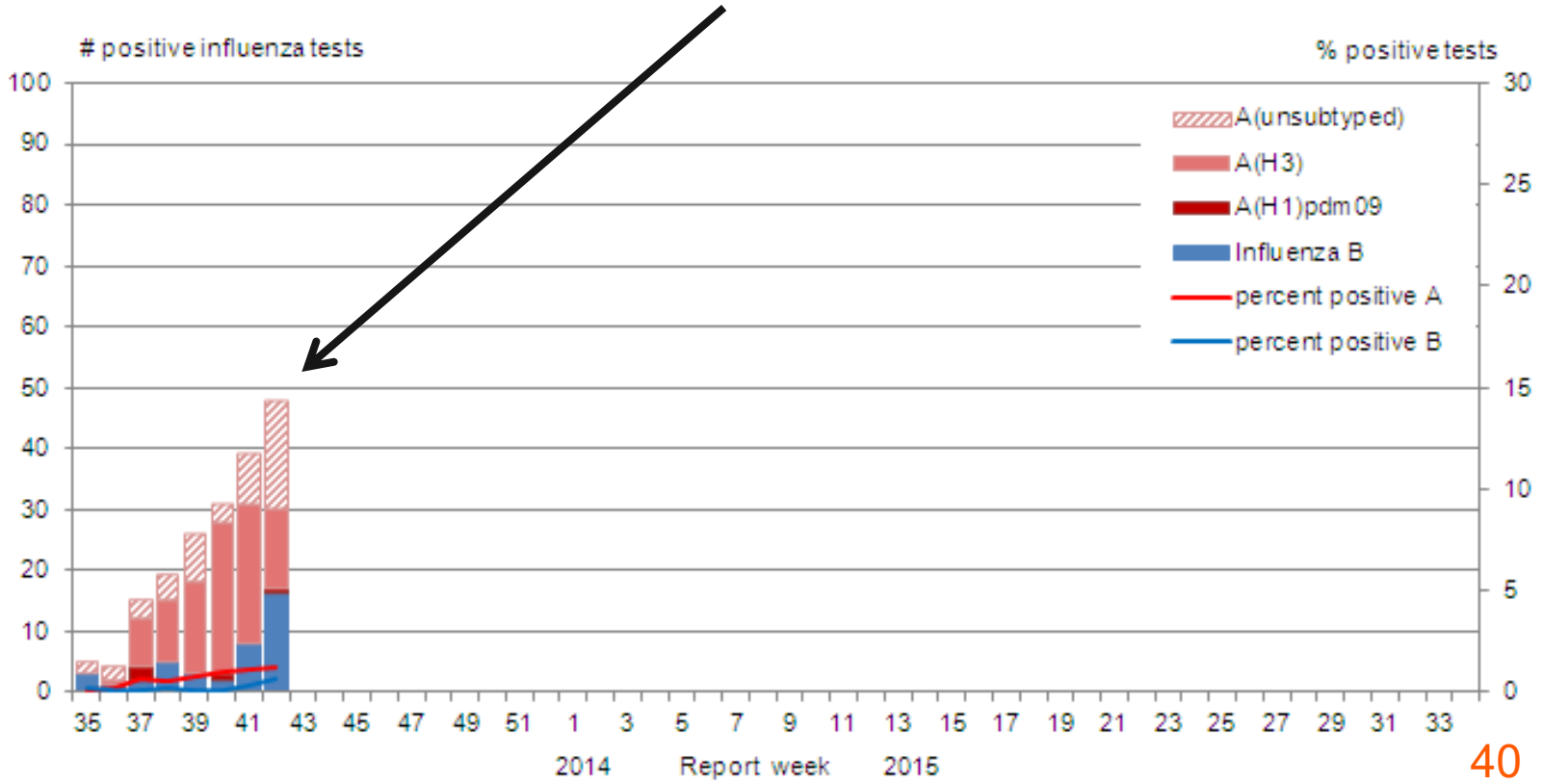
- causes of death (per year) in Canada:
  - hospital-acquired infections: ~10,000 deaths
    - 4th leading cause of death
    - 30-50% are preventable
  - influenza and pneumonia: ~5,750 deaths
  - unintentional injuries: ~9,500 deaths
  - suicides: ~3,600 deaths
  - firearms: ~800 deaths

Putting It In Perspective

- infectious disease burden in Canada:
  - tuberculosis: ~1,600 new cases / year
    - ~5 out our every 100,000 Canadians have TB
  - HIV: ~3,200 new cases / year
    - ~6-7 out of every 100,000 Canadians are HIV-positive
  - hepatitis B: ~2,000 new cases / year
    - ~1-2 out of every 100,000 Canadians are hepatitis B positive
  - hepatitis C: ~11,000 new cases / year
    - ~2 out of every 100,000 Canadians are hepatitis C positive
  - MRSA: 20-30% of people are carriers

Putting It In Perspective

- infectious disease burden in Canada:
  - remember influenza?
  - flu season has just begun…



Final Thoughts on Ebola

- it poses a risk, albeit very small
- public and provider fear is tangible
- greater risks exist
- mitigation and prevention are key

- remember SARS?
- remember HIV / AIDS in the 1990s?


Facts about Ebola
You can't get Ebola through air
You can't get Ebola through water
You can't get Ebola through food

QUIZ: DO YOU HAVE EBOLA?

Have you touched the vomit, blood, sweat, saliva, urine, or feces of someone who might have Ebola?

NO

You do not have Ebola.

KEEP CALM AND LEARN THE FACTS

Summary

- background and history
- current outbreak status
- facts and truth about Ebola
- treatment
- modifications to paramedic practice
- modifications to paramedic operations
- risk assessment and perspective

Discussion & Questions

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rmacdon7@toronto.ca

Paramedic Chiefs of Canada

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Situation Report (SitRep) Format:

- Your Name & Organization
- Impact of Ebola on:
  - Call Volumes
  - Staffing/Performance
  - Health Facility Services
- Innovation of the week (big or small) for:
  - Your service
  - Your staff
  - Your healthcare facilities
- Most important lesson learned this week
- Topics / Issues for today's roundtable or for future discussion.

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Next call information

- Thursdays
  - 10am PDT, 11am MDT, 12pm CDT, 1pm EDT, 2pm ADT
  - Online: http://firstwatch.webex.com/training
    - Password: **ebolaems**
  - ***Same*** Conference Call Info:
    - Dial: +1 (877) 668-4490 or +1 (408) 792-6300
    - Conference / Session Code: 806 421 582#
    - *(If you connect online first before calling, it's better)*

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Name, **Agency Name**, and **# of people** joining from your location.
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Emerging Infectious Disease (EID) Resource Page

- **If you have information you'd like us to include on the EID Resources page, please send your email to: eid@paramedicchiefs.ca**

- **Please also include (for example):**
  - **Document Submission Date:** October 16, 2014
  - **Document Title:** CDC Key Messages – Ebola Virus Disease
  - **Document Description:** The Department of Health and Human Services' Centers for Disease Control and Prevention (CDC) and Office of the Assistant Secretary for Preparedness and Response (ASPR) continues to work with other U.S. government agencies, the World Health Organization (WHO), and other domestic and international partners in an international response to the current Ebola outbreak in West Africa. The attached document summarizes key messages about the outbreak and the response and *is current through October 16, 2014*. It will be updated as new information becomes available and distributed regularly.

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2015 Annual Conference
Niagara Falls, Ontario, Canada
June 3rd – 5th

Thank You

www.paramedicchiefs.ca/eid
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