

Lessons learned from previous outbreaks: West Nile virus

Negar Elmieh, MPH, PhD

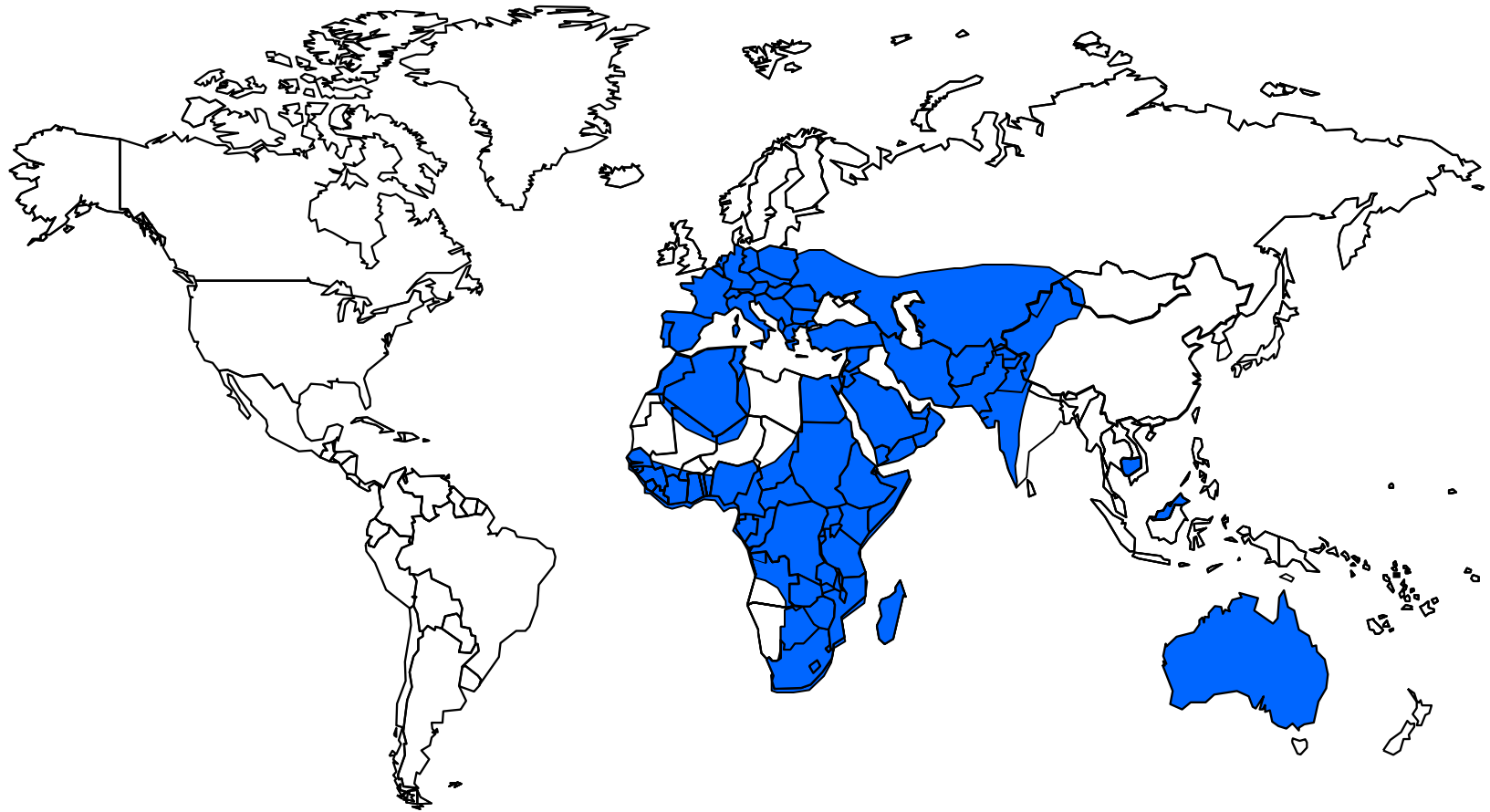


BC Centre for Disease Control

AFRICA



Geographic range: 1937-1990s



How does WNV work?

Bird reservoir



0-100%
mortality

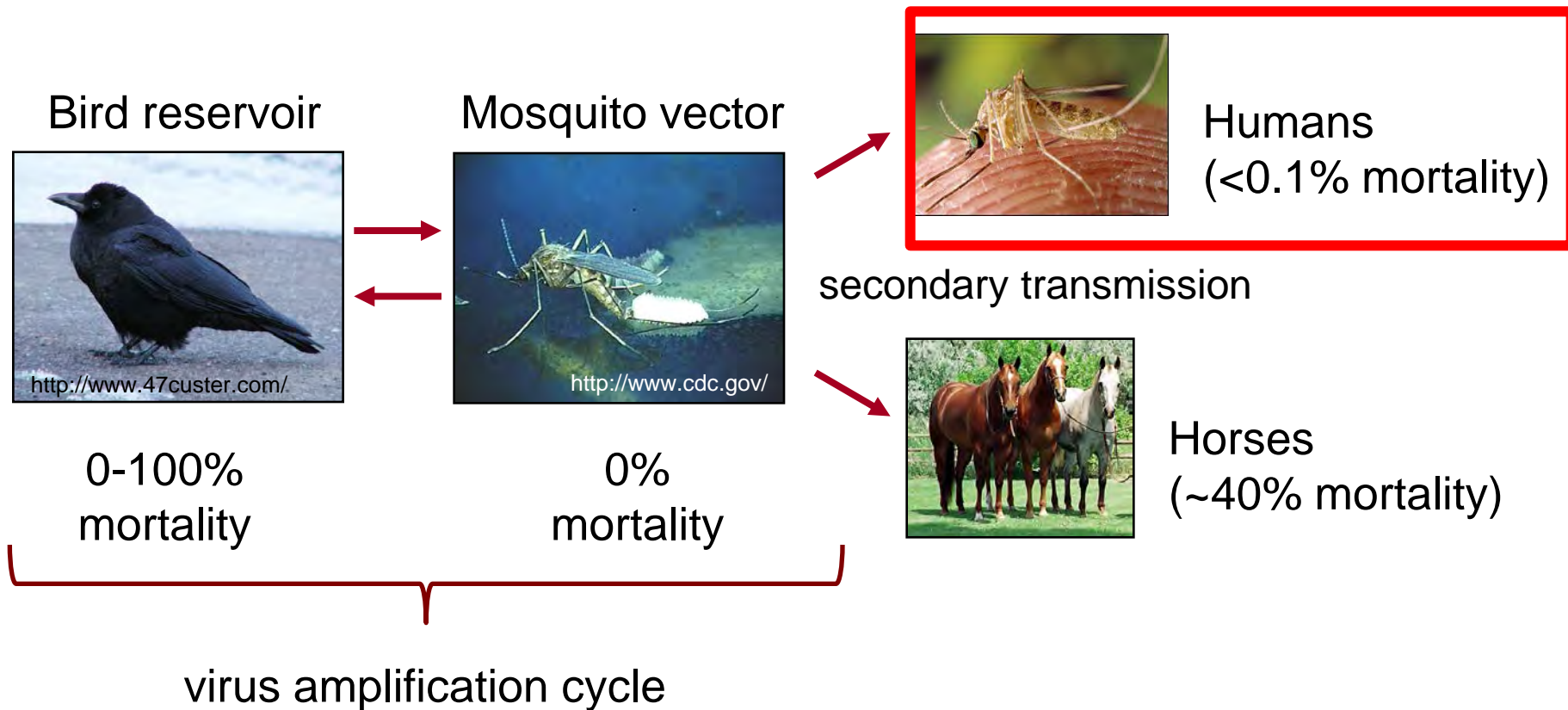
Mosquito vector



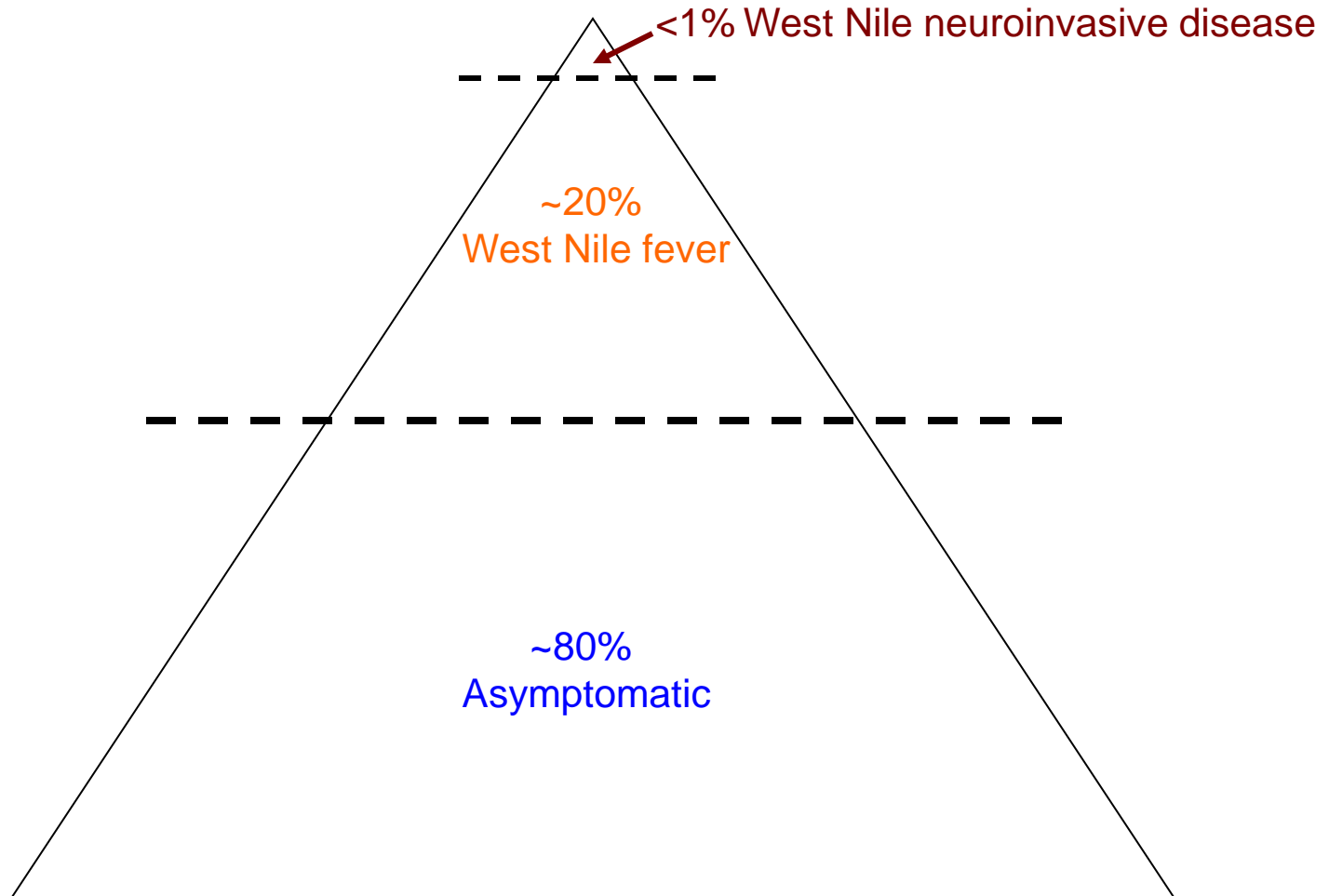
0%
mortality

virus amplification cycle

How does WNV work?



Human infection with WNV



WNV in North America



Price \$3.00

THE

Sept. 27, 1999

NEW YORKER



UNITED STATES \$3.00
CANADA/FOREIGN \$3.50



PRICE \$3.00

THE

APRIL 17, 2000

NEW YORKER



Year	# of reported human WNV cases
2002	414
2003	1481
2004	25
2006	151
2007	2215
2008	36
2009	13
2010	5
2011	101
2012	428
2013	115
2014	21
2015	80
2016	100

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What do we know now?

1. How to detect WNV?

- Human, mosquito, bird, horse (highly certain)



2. How to control WNV?

- Kill mosquitoes, not birds. (highly certain)
- How many mosquitoes? (highly uncertain)

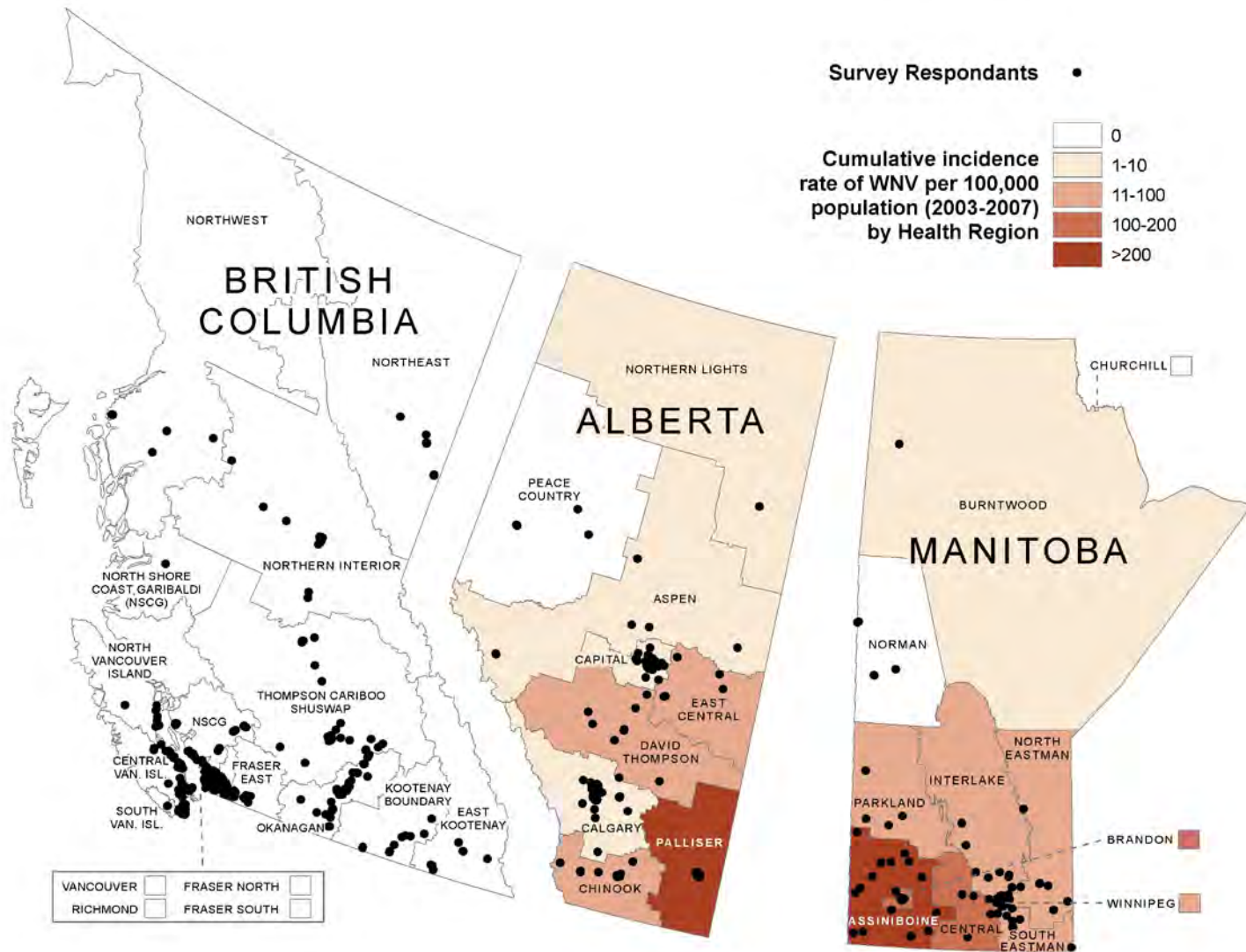


3. What are people doing to protect themselves from WNV?

- Effective use of protective measures (highly uncertain)

?

WNV in study provinces



Five recommended measures

Use insect repellent with DEET	35%
Avoid outdoors during peak mosquito hours	29%
Use screens on windows/doors	87%
Eliminate standing water	63%
Wear long sleeved shirts and pants	42%

98% engaged in at least one behaviour

Findings

1. Misconceptions about WNV
 - Approximately 70% either didn't know or incorrectly believed that there was an effective treatment for WNV
 - 48% couldn't identify the age group at an increased risk
2. Barriers to action
 - Respondents used insect repellents with DEET despite reporting health and/or environmental concerns.
3. Specific cues to action
 - Receiving timely specific information led to risk reduction behaviour.
4. Context matters

In terms of risk communication

1. Important to understand unique associations and misconceptions
2. Individuals will engage in actions:
 - if they receive timely information and understand the benefits
 - despite perceived risks and potential adverse effects
3. Perceptions and actions varied based on disease context
4. Need tailored and innovative messages which are community specific

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