

West Nile Virus – Awareness (May 25, 2008)

Introduction

Background

West Nile Virus (WNV) was first discovered in North America in 1999 when an outbreak of encephalitis resulted in 62 deaths in New York City¹. WNV is related to the viruses that cause Dengue Fever, Yellow Fever and St. Louis encephalitis and is spread by mosquitoes that have ingested blood from infected birds. People with a chronic disease or weakened immune system are at a greater risk for serious health outcomes due to WNV, and the overall risk for negative effects from WNV increases with age².

Current federal/provincial/territorial and local prevention activities include raising public health awareness about the need to avoid mosquito bites and implementing measures to protect blood and tissue donations. As well, public health units in Ontario are involved in a province-wide WNV prevention strategy to help assess the risk of WNV. This strategy is accomplished by trapping mosquitoes so that they can be counted, identified and tested to see if they are carrying the virus. As well, health units are accepting the submission of dead avian specimens for WNV testing.

Rapid Risk Factor Surveillance System

The data presented in this report was obtained and analyzed from the Rapid Risk Factor Surveillance System (RRFSS). RRFSS is an on-going cross-sectional telephone survey occurring in various public health units across Ontario that provides timely and relevant local health unit data. A random sample of adults (aged 18+) in Leeds, Grenville and Lanark counties is interviewed monthly regarding risk behaviours, knowledge, attitudes and awareness about topics important to public health. The RRFSS survey is conducted by the Institute for Social Research (ISR) at York University, on behalf of the Leeds, Grenville & Lanark District Health Unit. Data collected in the RRFSS survey is used to support community awareness programmes, health unit programme planning and evaluation, media campaigns, public policy development and evidence-based research as mandated by the Mandatory Health Programs and Services Guidelines.

Objectives and Methodology

1. To monitor public knowledge, attitude and behaviour regarding West Nile Virus.
2. To inform Health Unit West Nile Virus education and awareness activities.

Data from RRFSS were analyzed using standard data analysis protocols. All analysis was produced using SPSS v.15.0 software (Chicago, IL) and MS Excel software (Redmond, WA). Results are weighted to adjust for household size and inequality in selection probability. Estimates are presented with 95% Confidence Intervals (C.I.) which indicate that there is a 95% probability that the true value of the variable measure (proportion) is contained within the interval. When the data is presented in a chart or table, an "E" indicates that the estimate may be released, but has a high coefficient of variation (C.V.) and must, therefore, be interpreted with caution due to a high sampling variability (C.V between 16.6 and 33.3). A "--" indicates the estimate is suppressed due to small cell size/high sampling variability (C.V greater than 33.3).

Data pertaining to the West Nile Virus Awareness module were collected from June 2007 to November 2007. There were a total of 503 weighted respondents. However, response rates varied between questions in the module.

Results

The mean age of respondents to this module was 50.3 years (S.D. = 16.2), with a range of 77.8 years (min = 18.4, max = 96.2). In terms of gender, 45.7% (95% C.I.: 41.0, 50.4) of respondents were male and 54.3% (95% C.I.: 50.0, 58.6) were female.

Question 1: *Have you heard about West Nile Virus?*

	Frequency (n=503)	Percent	95% C.I.
Yes	497	98.6	97.6, 99.6
No	7	--	--

Table 1: 98.6% of respondents ($n = 497$) in Leeds, Grenville and Lanark counties stated that they have heard about WNV.

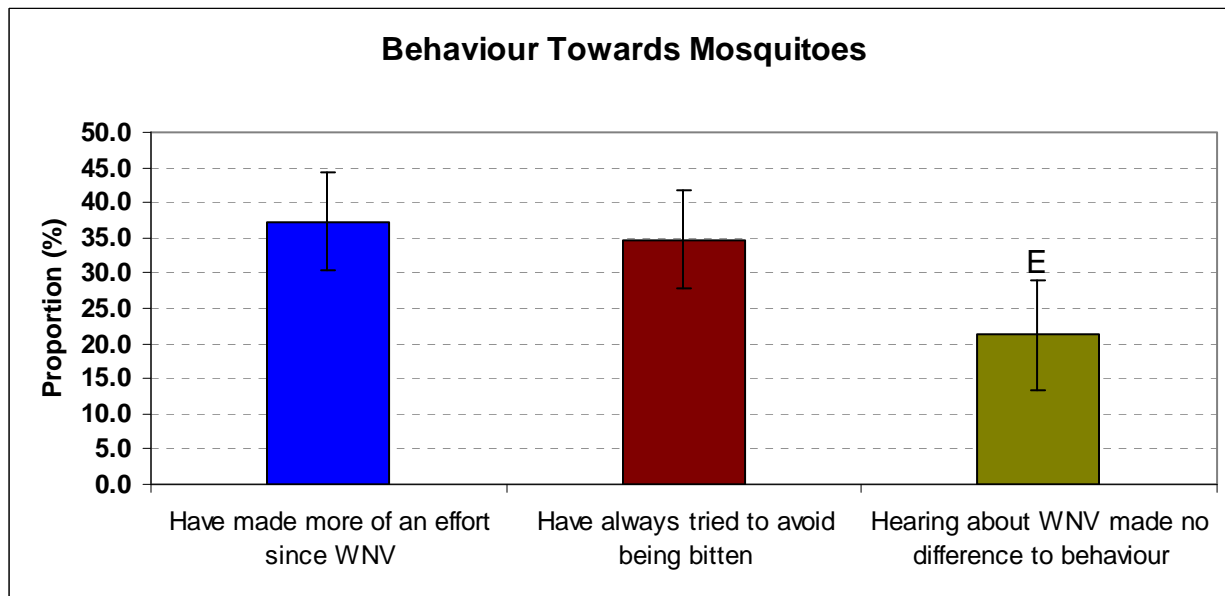
Question 2: *West Nile can infect people. Can you tell me how West Nile Virus is passed to people?*

	Frequency (n=497)	Percent	95% C.I.
Yes - by mosquito bites	422	85.0	81.6, 88.4
No – I don't know	46	--	--
Other	29	--	--

Table 2: 85.0% of respondents ($n = 422$) stated that they knew that WNV is passed to people by mosquitoes. Some of the comments made by those who responded to the *Other* category were:

- Birds/dead birds
- Not washing hands
- Physical contact with/breathing on another person
- Saliva

Questions 3: Since hearing about West Nile Virus, which of the following best statements BEST describes your behaviour towards mosquitoes?



Notes: 'E' indicates caution in interpreting this proportion due to large C.V. Sample size for this question was 497 respondents. However, responses to the *Don't know* and *I don't avoid mosquitoes as they are not a problem for me* response categories were excluded due to small cell sizes or large C.V values.

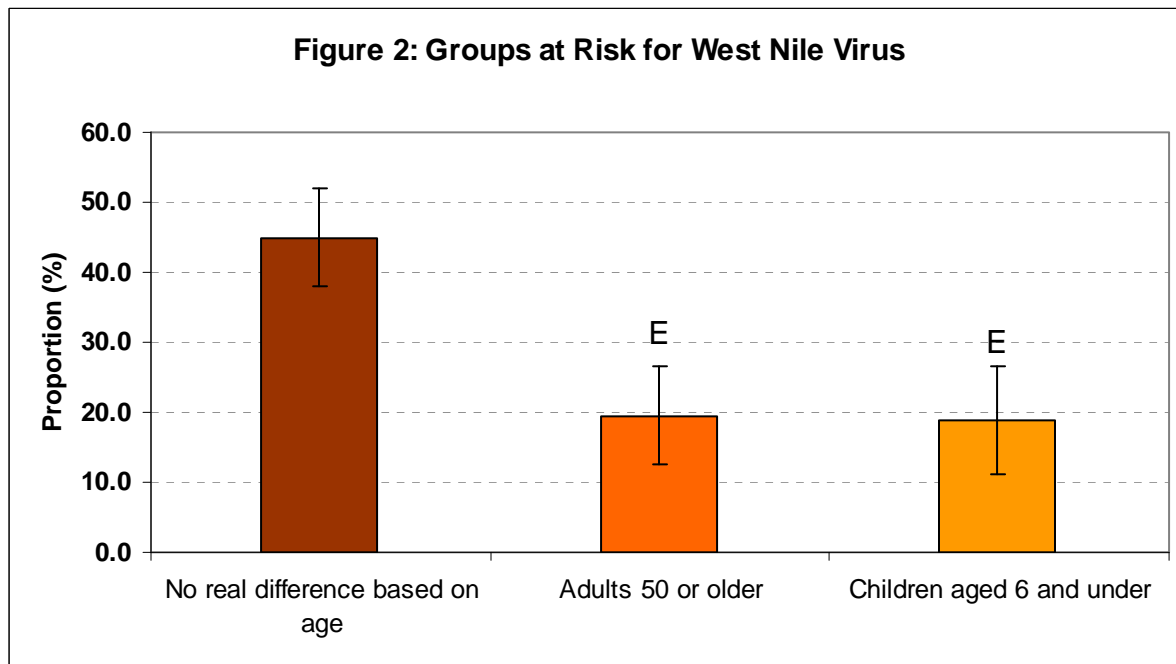
Figure 1: 37.3% (95% C.I.: 30.3, 44.3) of respondents in Leeds, Grenville and Lanark counties report that they are making more of an effort to avoid exposure to mosquitoes since having heard about WNV. However, only 21.2% (95% C.I.: 13.4, 29.0)E of respondents report that they have not changed their behaviour.

Questions 4: This summer do you feel that you are at risk for becoming ill because of West Nile Virus?

	Frequency (n=497)	Percent	95% C.I.
Yes	32	--	--
No	461	92.9	90.6, 95.2
Don't know	4	--	--

Table 3: 92.9% of respondents (n = 461) in Leeds, Grenville and Lanark counties stated that they have felt that they were not at risk for becoming ill due to WNV.

Questions 5: Which ONE of the following groups do you think is MOST at risk of becoming seriously ill from the West Nile Virus?



Notes: 'E' indicates caution in interpreting this proportion due to large C.V. Sample size for this question was 497 respondents. However, responses to the *Don't know* and *Children Between 7 and 18* and *Young Adults Between 19 and 49* response categories were excluded due to small cell sizes or large C.V values.

Figure 2: 45.0% (95% C.I.: 38.5, 51.5) of respondents in Leeds, Grenville and Lanark counties report that they thought that there was no real difference between age groups in terms of the risk of WNV. Almost equal proportions of respondents felt that children aged 6 and under and older adults were more at risk of a serious illness from WNV.

Discussion

Almost 99% of the sampled population has heard of WNV and 85% understood that WNV is transmitted by mosquito bites. These statistics suggest that media messages and education programs and information are reaching their target populations. However, only 37% of the sampled population reported that they are making an effort to avoid exposure to mosquitoes since hearing about WNV and 21% stated that they are not changing their behaviour at all. This may suggest that this segment of the population is not being exposed to mosquitoes due to their living environments (e.g. Apartment living) or that they are already taking precautions to prevent mosquito exposure (e.g. DEET). However, there may also be an element of cognitive dissonance between the knowledge of WNV and the health risks presented by WNV by individual exposure to mosquitoes. This last point is supported somewhat by the fact that 93% of respondents felt that they are not at risk for becoming seriously ill due to WNV.



Summary of Key Findings

Some key findings in the study were:

1. Almost 99% of respondents in Leeds, Grenville and Lanark counties reported having heard about WNV before.
2. 85% of respondents know that WNV is passed to people by mosquito bites.
3. Only 37% of respondents reported that they are making more of an effort to avoid exposure to mosquitoes since hearing about WNV.
4. 93% of respondents feel that they are not at risk for becoming ill due to WNV.
5. Just under 20% of respondents knew that the age group most at risk for becoming seriously ill due to WNV were older adults.

Strengths & Weaknesses:

The data provided in this analysis demonstrates a timely and local perspective of the knowledge and perspectives by families in Leeds, Grenville and Lanark for WNV awareness.

A larger sample size would have allowed strong statistical inferences to be made.

References:

1. Public Health Agency of Canada. Management of patients with West Nile virus: Guidelines for healthcare providers. CCDR 2005; 31S4: 1-10
2. Public Health Agency of Canada. West Nile virus – Protect yourself. [Online]. 2006 [Cited 2008 May 27] Available from: URL: <http://www.phac-aspc.gc.ca/wn-no/index-eng.php>

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