

Nice effort! But how did it work? Education for WNV Prevention

And a quick repellent update

Emily Zielinski-Gutierrez, DrPH
Division of Vector-Borne Infectious
Diseases
Centers for Disease Control and
Prevention



“Each year, states spend scarce public health dollars and resources on WNV public education, yet little is known about the impact of these efforts.” Fox et al, 2006

Outline

- Types of evaluation
- What do we know about
 - Success in reaching people (process)
 - Success in achieving protective behavior (output)
 - Success in reducing infection (outcome/impact)
- Take Home Points
- My own public service announcements
 - Repellents
 - CDC website

Evaluation

- Impact evaluation a significant challenge
 - Collection of specimens/testing
 - Expensive, labor intensive
 - Need large numbers
 - Ethical, practical issues with untreated controls
 - Lack of direct ecological comparability
 - Lack of direct temporal comparability
- Process and outcome indicators
 - % heard/seen prevention message (process)
 - % using preventive behaviors (output or outcome)

What do we know?

- Review of peer reviewed and gray literature
 - Surveys that assessed exposure to education/intervention and reported behavior
 - Projects that assessed infection rates in various groups after exposure to education /intervention
- Could have assessed specific risk and protective associated with infection but not possible in the time available



Exposure to WNV Education

Which channels reach people?

How do respondents get WNV education?

- More often cited

- TV NEWS (88%^a, 96%^b, 63%^c)
- Newspaper (72%^a, 78%^b)
- Radio (44%^a, 63%^b)
- Word of mouth (65%^a)

- Less frequently cited

- Magazine (17%^a)
- Websites (16%^{ab})

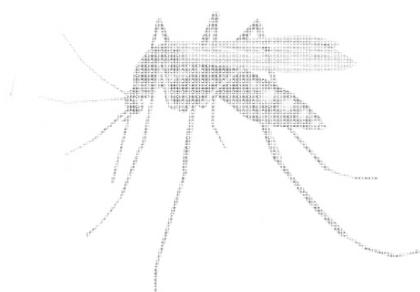
- Highly variable results

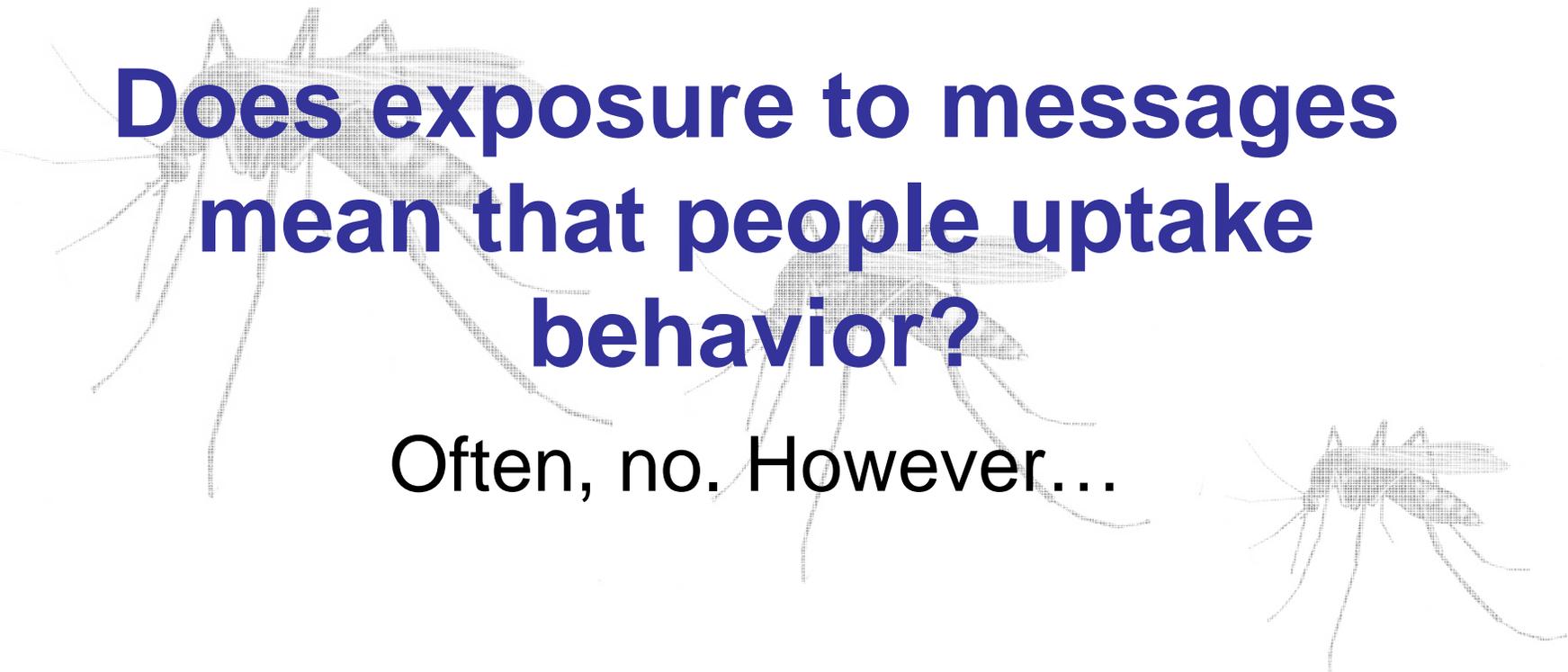
- Brochures
- Radio and TV PSAs

a= Averett et al. 2005, b= LaBeaud et al. 2006, c= Aquino et al 2004

Variations in Exposure to WNV Message Channels

- People over 50 more likely to get info from newspapers; less from Internet ^c
- Spanish speaking population less likely to know prevention information, report exposure to campaign elements^a
- Urban vs. Rural (more radio) ^a





Does exposure to messages mean that people uptake behavior?

Often, no. However...

Are some methods of communication more effective?

- Yes, at least in Kansas, according to Fox *et al* (2006):
 - Those who saw WNV info on the **internet** were 3 times more likely to have taken protective actions
 - Small but motivated segment of the population
 - Those who heard about WNV via **word-of-mouth** were twice as likely to protect themselves
 - Those who saw WNV info in newspaper were 81% more likely to take protective action than those who had not seen in newspaper
 - Our target people for prevention!

Some constructs are associated with prevention behaviors

- People who perceived “barriers to prevention” (saw DEET as dangerous, regularly participate in outdoor activities during peak mosquito hours) were 46-50% less likely to report taking prevention steps
- People who reported seeing “cues to action” (behavior of relatives, info sources) were roughly 3 times MORE LIKELY to engage in prevention behaviors

How about those door hangers?

- Small study (50 respondents) of neighborhood flyer distribution in a Tucson WNV “hot spot” found:
 - 86% saw flyers, 70% read them
 - However all respondents had heard about WNV from other sources also
 - 66% of those who received flyers reported taking preventive actions
 - However, no significant difference in preventive actions between those who saw flyers and those who did not

Walker and Hayden, personal communication

What about mailings?

- Small study of transplant patients mailed a targeted brochure from their transplant center with risk information, pre/post test:
 - Risk perception increased
 - Ever use of repellent increased (58 to 63%, $p < .04$)
 - No difference in repellent use among those receiving samples of repellent compared to those who did not, but additional analysis of third round of survey is ongoing
 - Use of protective clothing increased (39.7% to 51.8% $p = .000$)
 - Avoidance of being outdoors during peak biting hours increased (62.7% to 78.6% $p < .001$)

Zielinski-Gutierrez and Levi, ICEID 2008 and in development

Are health care providers giving prevention messages?

- Not so much: A rapid qualitative assessment of providers' anticipatory guidance suggested that providers knew little about repellent and felt they didn't have time to discuss with most patients
- Providers did request to have passive information available for patient access



Take Home Points

- Media outreach and interviews matter
 - Can we build media relationships to get out accurate messages, especially as WNV dwindles in media attention?
 - Media can fuel the word of mouth
- People who land on your website are highly motivated
 - Get the website right—take advantage of information seeking to push prevention messages
 - Evaluation of websites can be targeted, relatively less expensive

Evaluation of Education Has Been Limited

- Evaluation takes dollars we often do not have
 - Good evaluation may cost more than a campaign
- Staff time and sometimes expertise to conduct eval limited
- Poor evaluation isn't necessarily better than no evaluation
 - Lack of significant results due to a small sample or poor design can bias future interest in an area
- Qualitative evaluation is important but we need quantitative approaches too
 - Complementary approaches

How are these working?

- Evaluation of school-based programs
 - Do these change parent behavior?
- Evaluation of partnership with industry and retailers
 - Can point of sale displays increase sales, increase use?
- Evaluation of civic programs
 - What effect does local outreach have?

Creative Evaluation Opportunities

- Partner with local colleges/universities
- Targeted surveys
 - Senior centers, senior housing
- Time-location sampling
 - Not as tight as mail or RDD but may be opportunity to focus on higher risk, outdoorsy folks
 - Park users, Market shoppers, farmworkers
- Proxy measures
 - Repellent sales

Current CDC Repellent Recommendations

- Mosquitoes:
 - DEET
 - Picaridin
 - Oil of lemon eucalyptus
 - IR3535
- Ticks:
 - DEET
- Permethrin, on clothing



www.CoxAndForkum.com

HOW DO I CHOOSE AN INSECT REPELLENT?



1-2 hours



2-4 hours



5-8 hours

ON SKIN

MOSQUITOES

Protection varies by species of mosquito.

Most mosquitoes that transmit diseases in the US bite from dusk-dawn.

TICKS

Other factors affecting efficacy include: individual chemistry, sweat, numbers of bugs. Apply creams and lotions 15 to 20 minutes before going outdoors.

Choose the appropriate repellent for the length of time you'll be outdoors. Reapply according to product instructions.

<10% DEET
<10% picaridin
<10% IR3535

~15% DEET
~15% picaridin/KBR 3023
~30% oil of lemon eucalyptus/PMD
~15% IR3535

~20%-50% DEET

Generally, repellent with 20 – 50% DEET is recommended to protect against tick bites.

In areas where both mosquitoes and ticks are a concern, repellents with 20 – 50% DEET may offer best, well-rounded protection.

The American Academy of Pediatrics has recommended that repellents containing up to 30% DEET can be used on children over 2 months of age.

The repellents shown here meet CDC's standard of having EPA registration and strong performance in peer-reviewed, scientific studies. They reflect products currently available in the U.S.

ON CLOTHING AND GEAR

Permethrin



Permethrin treatment of clothing and equipment can provide protection against mosquitoes and ticks through multiple washings. Follow label instructions.

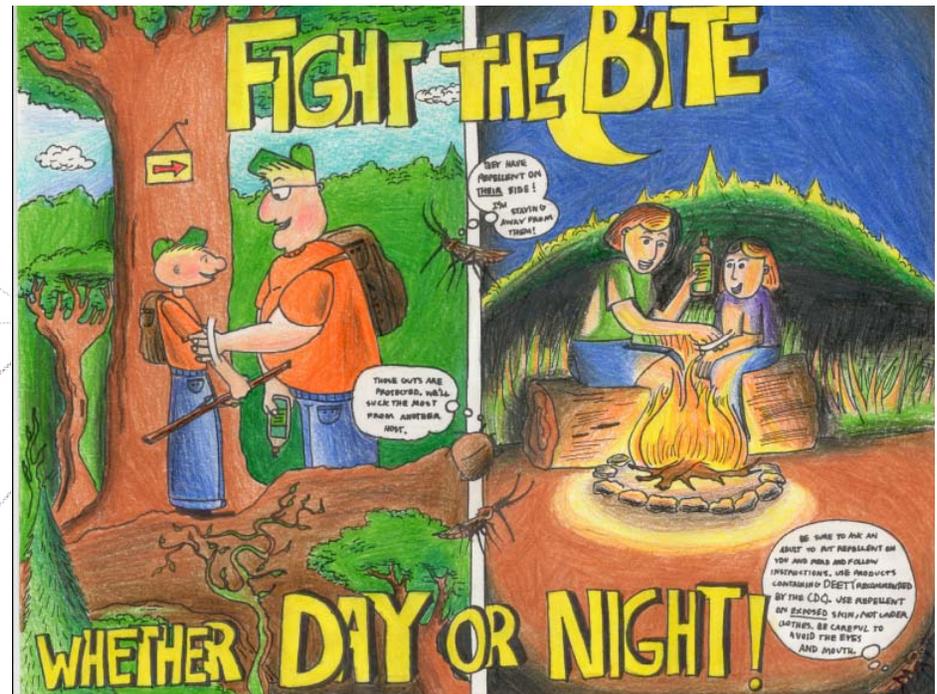


Questions?

Fight The Bite 2009 Contest Begins!

If you're a 5th or
6th grader you're invited to enter
this fun contest.

Click to go to the contest site



www.fightthebitecontest.org