



Surveillance for Lyme Disease and Knowledge, Attitudes and Practices in Visitors and Employees, Greenbelt Park, Maryland, 2010

Zoonotic Disease Update
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MISSION

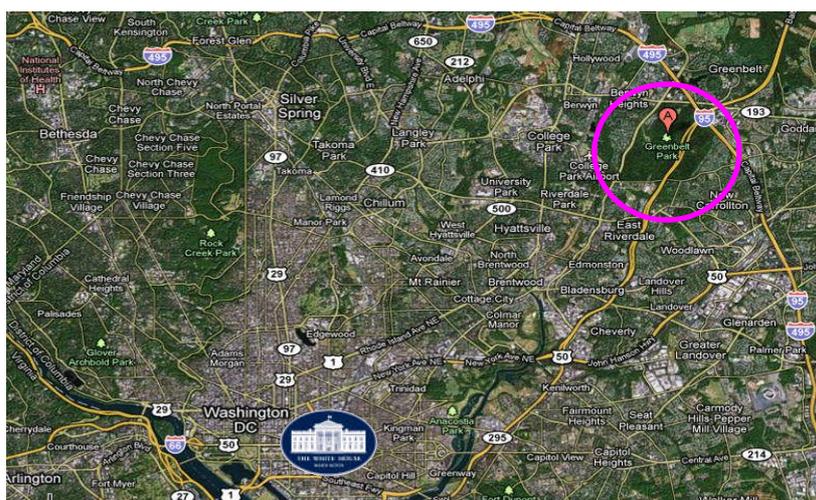
- To improve the health of Marylanders by reducing the transmission of infectious diseases, helping impacted persons live longer, healthier lives, and protecting individuals and communities from environmental health hazards
- We work in partnership with local health departments, providers, community based organizations, and public and private sector agencies to provide public health leadership in the prevention, control, monitoring, and treatment of infectious diseases and environmental health hazards.



Concern for Lyme Disease and Ticks in Greenbelt Park

- United States National Park Service (NPS) approached the Maryland Department of Health and Mental Hygiene (DHMH) to:
 - Address community concern
 - Aid in the expansion of the education campaign for employees and visitors
 - Determine additional measures the park should take to reduce risk of tickborne disease

Greenbelt Park





Measures Already In Place

- Confirmed presence of lone star and blacklegged ticks in Greenbelt (GREE)
- Prevention information shared with schools and other groups prior to visit
- Warnings posted:
 - Park website
 - Signs posted on bulletin boards
 - Lighted sign at entrance

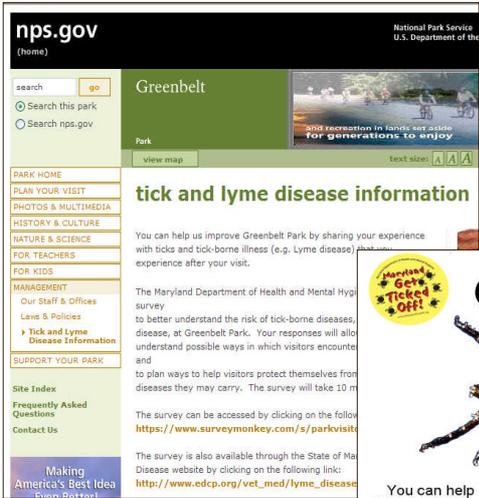


Lighted sign warning park visitors about ticks, Greenbelt Park, Summer 2010



Methods

- Surveyed Employees, Visitors, and Campers for:
 - Knowledge, attitudes, and practices (KAP) regarding tickborne disease and prevention
 - Self-reported tickborne disease after visit to GREE
- Made surveys available to visitors:
 - Rangers and campground hosts distributed surveys
 - Campground check-in, Ranger Station, Park Headquarters
 - Online survey
- Posted survey flyers throughout park:
 - Bulletin boards at picnic areas, trail heads, and campgrounds
 - Link to the online survey



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Greenbelt
Park

view map text size: A A A

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tick and lyme disease information

You can help us improve Greenbelt Park by sharing your experience with ticks and tick-borne illness (e.g. Lyme disease) after your visit.

The Maryland Department of Health and Mental Hygiene survey to better understand the risk of tick-borne diseases, disease, at Greenbelt Park. Your responses will also understand possible ways in which visitors encounter and to plan ways to help visitors protect themselves from diseases they may carry. The survey will take 10 m

The survey can be accessed by clicking on the following link:
<https://www.surveymonkey.com/s/parkvisits>

The survey is also available through the State of Maryland website by clicking on the following link:
http://www.edcp.org/vet_med/lyme_disease

Making America's Best Idea Even Better!

Got Ticks?

Black Legged Tick, National Geographic

You can help us improve Greenbelt Park by sharing your experience with ticks and tick-borne illness (e.g. Lyme disease) that you experience after your visit.

Please pick up a survey at the Greenbelt Park Ranger Station, or complete the survey online once you go home at www.MarylandTickOff.org.

This effort by the Maryland Department of Health and Mental Hygiene, in partnership with Greenbelt Park, the National Park Service, and the Prince George's County Health Department, aims to improve the visitor experience at Greenbelt Park.

DHMH Website

NPS Website

Survey Flyer



Methods

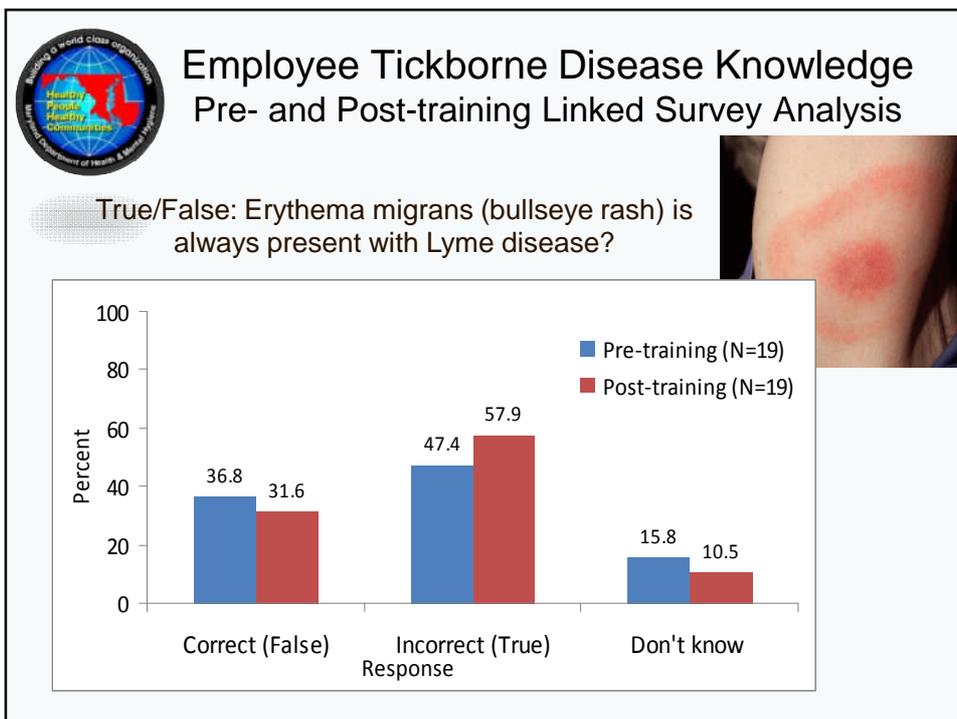
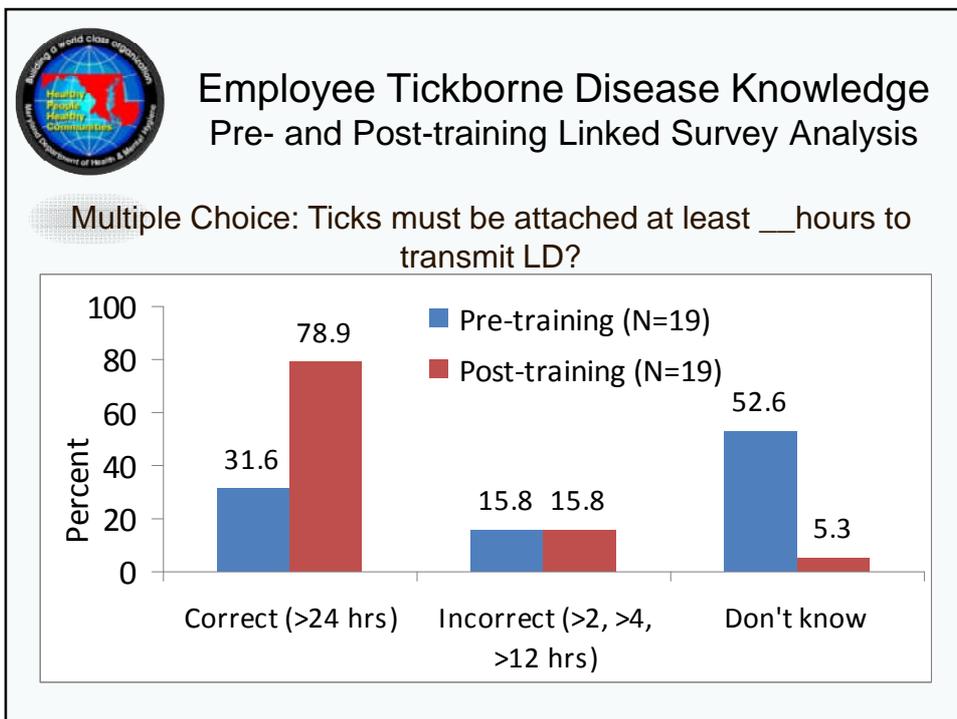
- Data were collected from July 2, 2010 through October 31, 2010
- All surveys were voluntary and anonymous
 - Employee surveys linked with a unique identifier
- Microsoft Excel 2007 and SAS v.9.2 were used for analysis
- The DHMH Institutional Review Board and National Park Service Research Permit System approved the study

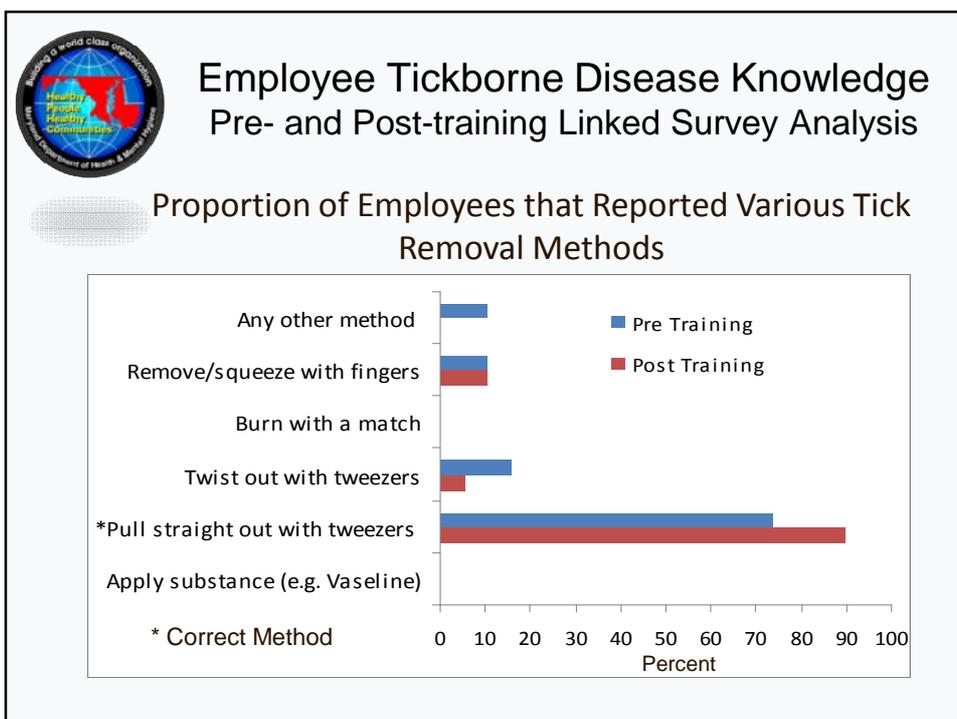
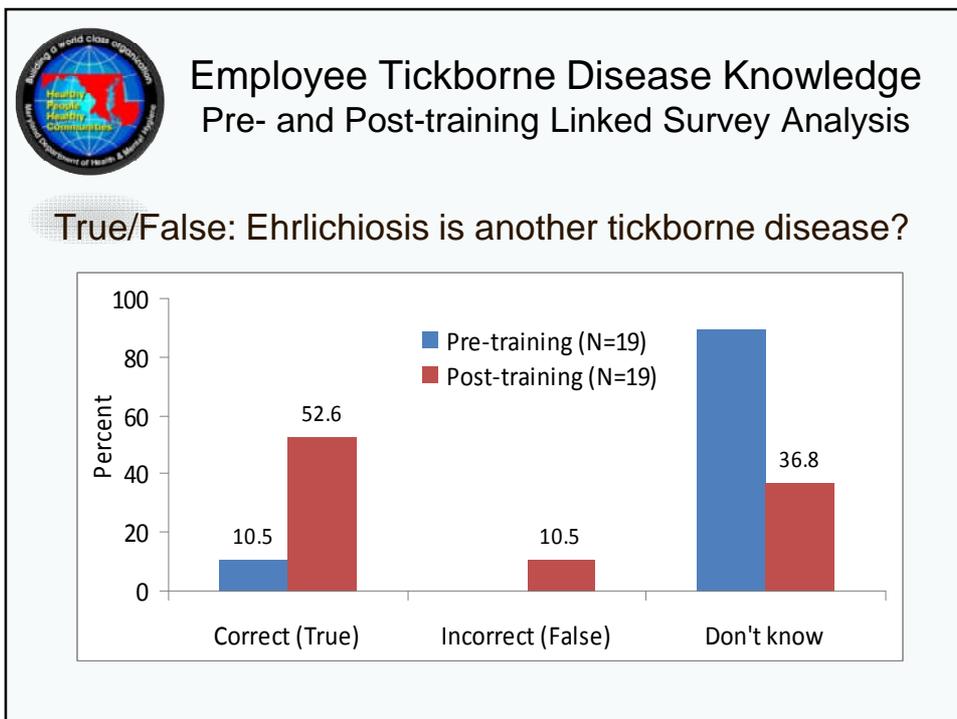
Ellen Stromdahl, Department of Defense (right), trained (from left) DHMH, NPS, and Greenbelt Park staff about ticks and tick habitat in Greenbelt Park, 2010



Erin Jones, DHMH (center left) trained DHMH, Greenbelt Park, NPS, and Prince George's County Health Department staff for survey administration in Greenbelt Park, 2010

Characteristics of GREE Employees	Percent
Percent pre-training surveys completed (n=32)	100
Percent post-training surveys completed (n=19)	59
Percent Male	81
Percent >45 years old	42
Percent worked at GREE for >10 years	52
Percent worked outdoors >20 hours per wk	68
Percent reported previous LD (n=5)	16
Percent reported previous LD while employed at GREE (n=4)	80
Percent used >1 repellent-based preventive measure per week	81
Percent used >1 clothing-based preventive measure per week	88





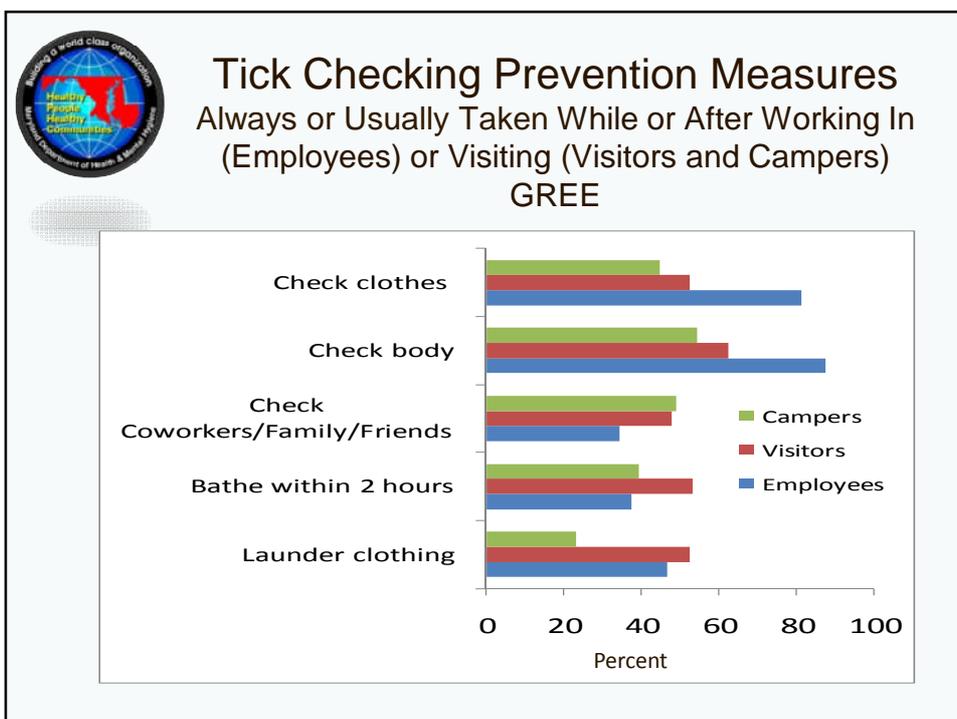
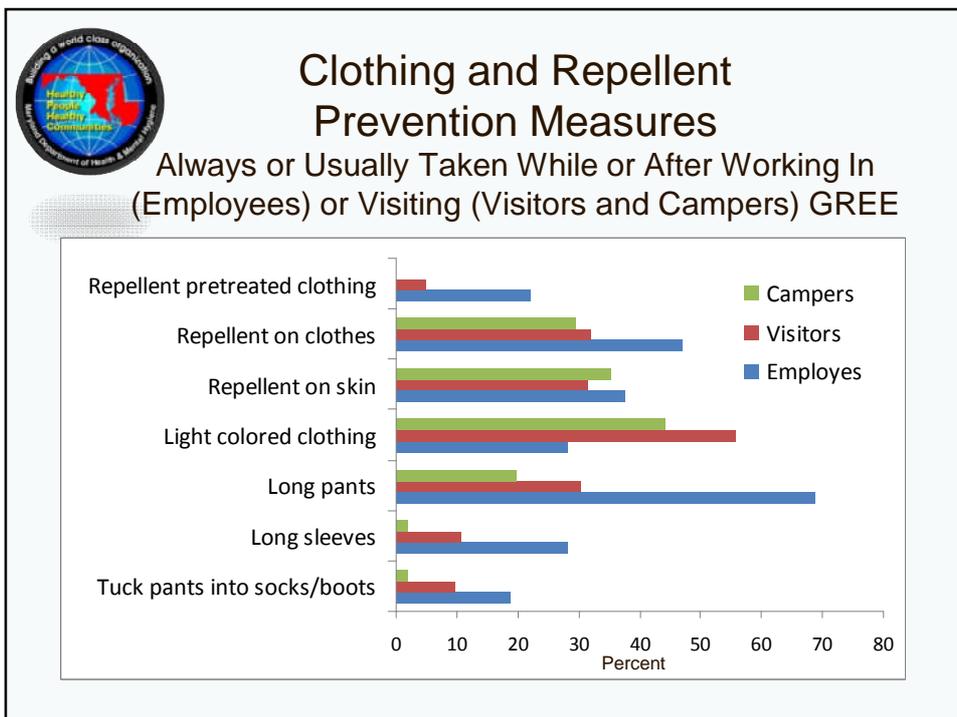


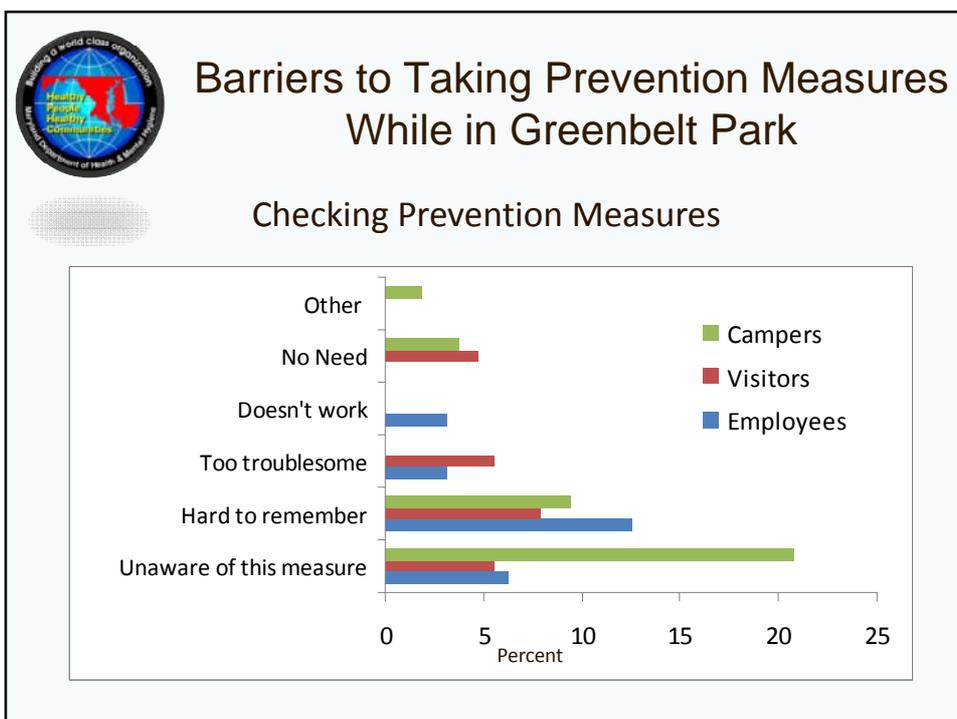
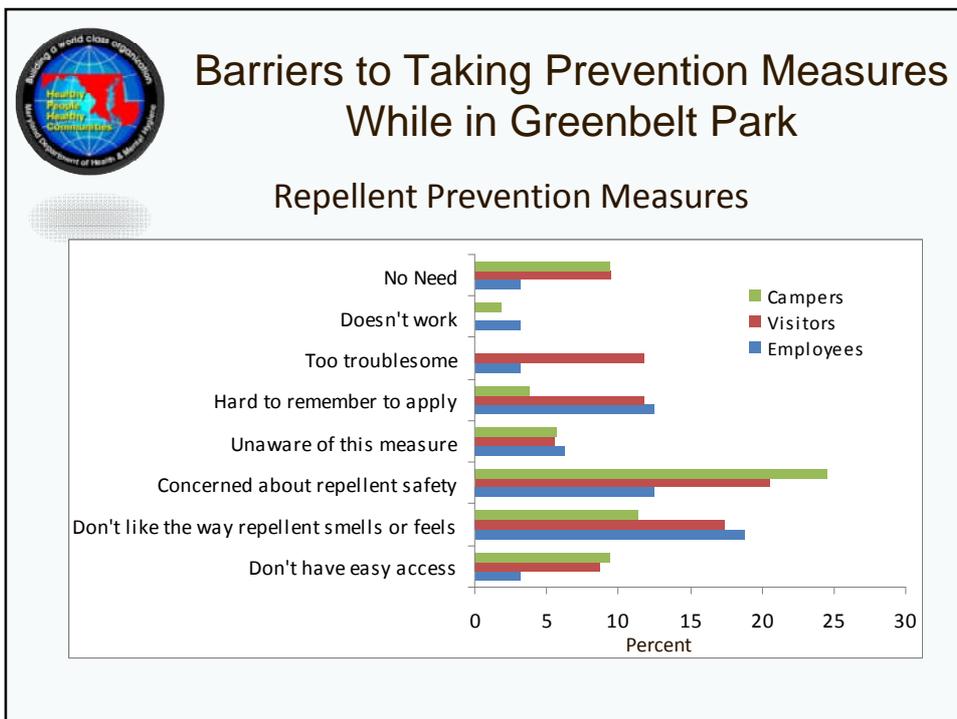
Visitors and Campers

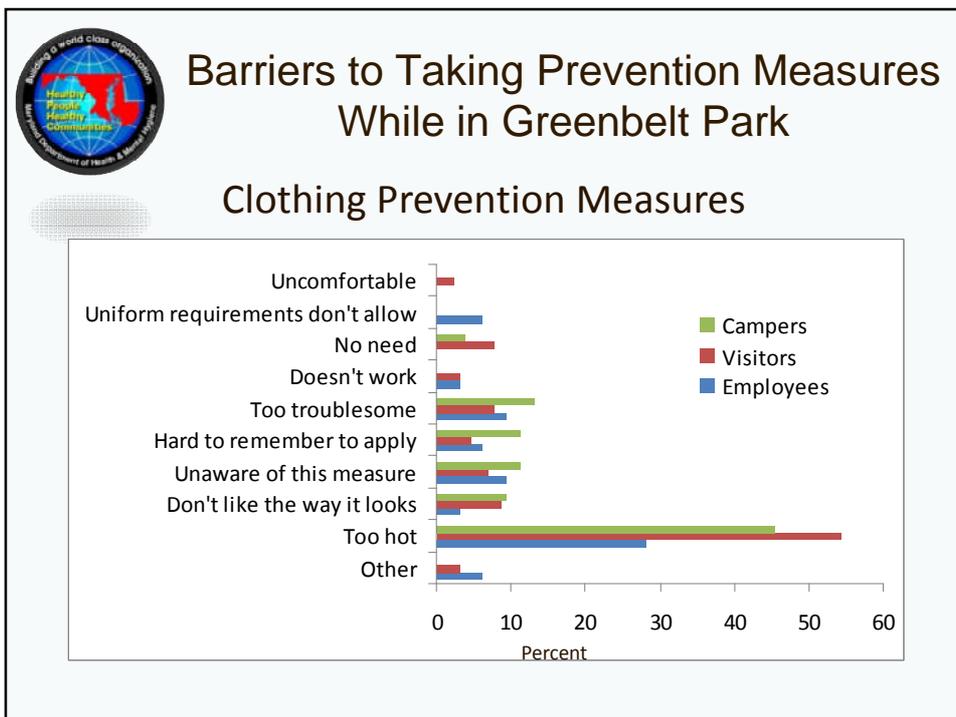
- Visitors:
 - 127 responded (Jul through Oct, 2010)
 - 62% completed postage-paid paper surveys post visit
 - 38% completed online surveys post visit
 - Paper surveys were available throughout the park, included link to online survey
- Campers:
 - 53 completed on-site survey
 - 5 occasions, July and August 2010
 - 9 (17%) completed the follow-up survey one month after GREE visit

Characteristics of GREE Visitors and Campers, n=180

	Value
Percent Male	53
Percent > 45 years old	26
Percent spent < half of the day in GREE	60
Percent reported previous LD	8
Number reported LD after visiting GREE	0
Percent responded on day of departure (Visitors only, n=81)	37
Percent responded >30 days after departure (Visitors only, n=81)	17
Percent used >1 repellent-based preventive measure per week	47
Percent used >1 clothing-based preventive measure per week	78







Prior Lyme Disease and Use of Prevention Measures

- Prior self reported LD was not significantly associated with taking prevention methods in Visitors and Employees

Prevention Measure	P value (Chi sq.)	
	Employees	Visitors
Applying repellent	0.35	0.76
Wearing protective clothing	0.55	0.12
Performing tick checks	1.00	0.28



Conclusions

- No new tickborne disease reported by visitors or campers
 - Limited number of visitor and camper surveys completed one month after the visit
- Visitors and Employees with previous LD diagnosis were no more likely to implement personal protective measures
 - Reassessment of best Lyme disease prevention strategies is warranted
 - Limited number of respondents who reported prior LD
- Limited understanding of risk factors
 - Few LD diagnosis reported



Conclusions

- Increased understanding of LD knowledge, misconceptions, and prevention measures
 - Reinforcement of prevention messages is warranted for employees
- NPS, with DHMH involvement, implemented an educational wayside panel and podcast for visitors regarding Lyme and other tickborne disease prevention



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