

Integrated Tick Management – How Do We Pay For It?



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Why are there not more funding initiatives for TBD IPM?

A. It has not yet been demonstrated to be effective

B. Better tools are needed

C. A strong case has not yet been made based on the cost-savings associated with effective prevention

D. All the above

Introduction & Conclusion

- Tick-borne diseases in humans are increasing in numbers and distribution in the U.S.
- Safe and effective prevention tools are badly needed
- Effective prevention requires cooperation and collaboration involving multiple partners
- Greater emphasis must be placed on a national prevention strategy AND on the cost savings associated with disease prevention



Before we ask the question of where the funding will come from, we first need to know how much it will cost?

“The estimated cost of discovery, development, and registration to bring a new pesticide active ingredient to the marketplace exceeds \$180 million (and...8 to 10 years), not including the capital cost associated with building and operating highly specialized production facilities.”

Source: The Pesticide Marketplace. Purdue University. Purdue Extension PPP-71. September 2006

“These days, the development of just one new vaccine requires a capital investment ranging from \$500 million for the least complex to \$1 billion or more for the most complex, including construction of facilities for manufacture.”

Source: Plotkin et al. Establishing a global vaccine-development fund. N Engl J Med 2015; 373:297-300 July 23, 2015 DOI: 10.1056/NEJMp1506820

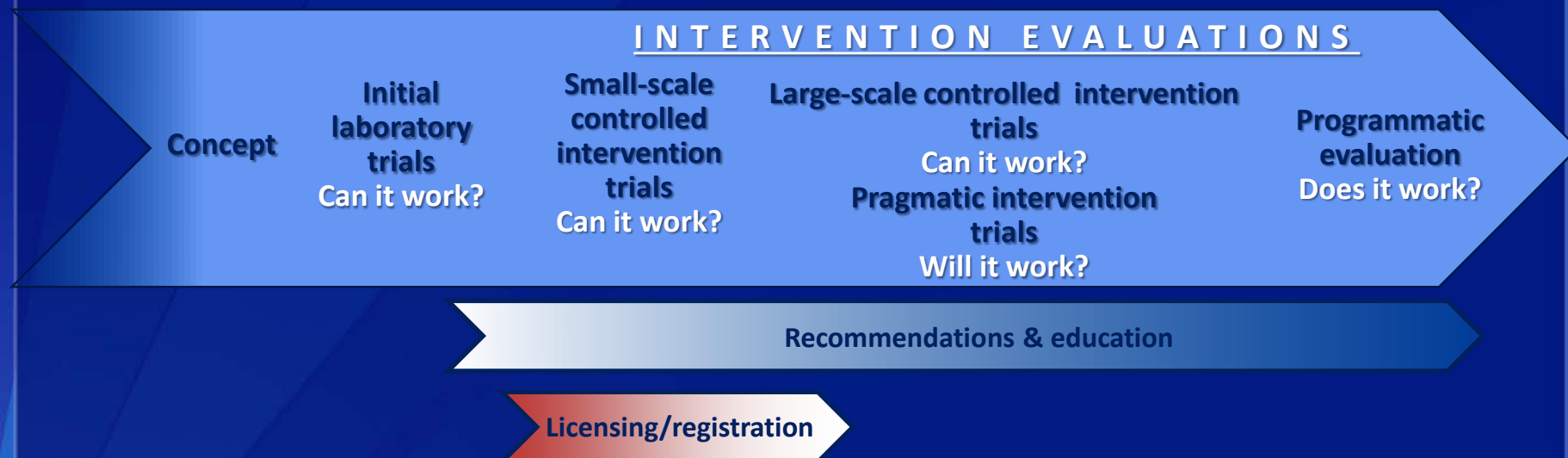
Lyme disease control toolbox



Personal Protection Measures	Treatment/ Vaccination in Humans	Landscape/ Vegetation Management	Killing of Host-Seeking Ticks	Rodent-Targeted Approaches	Deer-Targeted Approaches
Avoidance of tick habitat	Antibiotic prophylaxis after tick bite	Xeroscaping / Hardscaping	Synthetic chemical acaricide	Topical acaricide bait box	Topical acaricide feeding station
Physically protective clothing	Human vaccine	Keep grass short, remove weeds	Natural product-based acaricide	Oral vaccine	Deer reduction
Regular tick checks & Prompt removal		Remove leaf litter and brush	Fungal acaricide	Oral antibiotic bait	Deer fencing
Synthetic chemical repellent		Remove rodent harborage		Oral tick growth regulator	Oral tick growth regulator
Natural product-based repellent		Avoid plants that attract deer			Anti-tick vaccine for deer
Permethrin-treated clothing		Move play structures to low risk areas			
Natural product-based acaricidal soap/lotion					

Note: Yellow text denotes intervention that is not currently available but under development

Development and evaluation of tick-borne disease prevention tools



What is the cost of post-market evaluation and what is the fallout if the product “doesn’t work”?!

Development and evaluation of tick-borne disease prevention tools

Question: How much does it cost?

Answer: Its complicated!

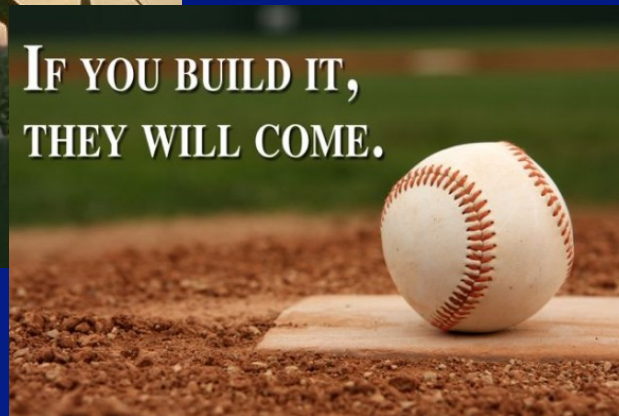
Question: How do we pay for it?

Funding for Lyme and TBD Prevention

– *Field of Dreams* approach...



IF YOU BUILD IT,
THEY WILL COME.



A Field of Dreams approach...



If you build it they will come...

- Detailed knowledge of the burden of illness (numbers of cases and cost to patients and society)
- Effective disease prevention tool or tools
- Effective communication of the cost savings associated with prevention
- A well-thought out national prevention plan

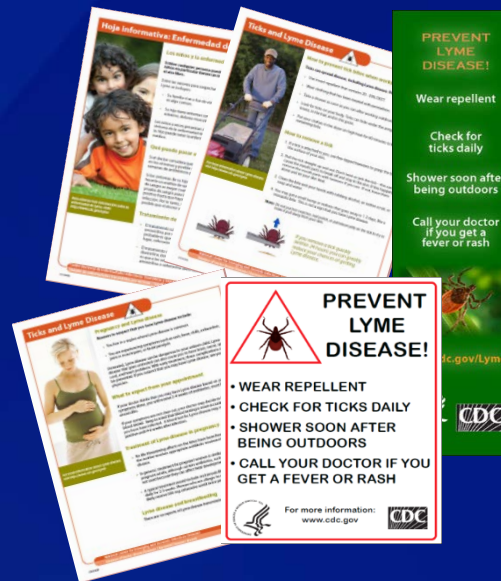
Conclusion



It's a terrible thing to see and to have no vision. Helen Keller

There is great power in a soundly formulated and clearly articulated vision!

Thank you for your time and interest!



Acknowledgments: Numerous staff of CDC's Division of Vector-Borne Diseases

The findings and conclusions in this report have not been formally disseminated by the Centers for Disease Control and Prevention and should not be construed to represent any agency determination or policy