Lyme Disease and Tick Borne Illnesses
Lyme disease is the leading vector borne disease in the United States. In Pennsylvania Lyme disease is present in all 67 counties. The State has led the nation in numbers of cases since the year 2000. In addition, other tick borne diseases have become increasingly prevalent. The state legislature authorized a Lyme Disease Task Force which published recommendations to the Department of Health in 2015. Although progress has been made, these recommendations can be added to others that address the disease evolution.

Prevention
In disease management, prevention is always better than cure. Educational efforts should be enhanced to increase the knowledge of personal protective measures that deal with proper outdoor clothing, tick avoidance, repellents, removal, and environmental risk factor reduction.

Additional studies need to be done on natural based tick repellents that appear to be effective to supplement the four currently approved repellents.

Further support for an effective safe human vaccine, as well as tick eradication programs, should be encouraged.

Diagnosis
Although there have been improvements in Lyme disease testing, there still remains a critical gap of a gold standard test for Lyme and other tick borne diseases that can accurately diagnose active disease in all stages and can prove or disprove ongoing active disease that requires treatment.

Enhanced efforts are needed to improve the public’s education to accurately identify the causative deer tick, the classical Lyme disease skin lesions and separate that from the inflammation caused by a tick bite.

Additional educational efforts should include co-infection with other tick-borne diseases.

Periodic continuing medical education on tick-borne diseases should be mandatory for all physicians and advanced practitioners to obtain licensure given the prevalence in this state.

Treatment
There are common drugs that are primarily generic that are effective for the treatment of Lyme and other tick-borne diseases. Thus far, resistance has not been a significant issue.

Enhanced educational efforts that increase knowledge of proper tick identification and likelihood of disease based on exposure time can lead to effective simple prophylaxis and/or timely treatment.

Current effective evidence based standardized treatment protocols for Lyme disease in its various stages are not well known or routinely followed by the medical community leading to unacceptable variability.

Drug shortages and pricing variability particularly for generic drugs are a national problem. Although there has been some recent legislation to address these issues, much remains to be done.
Governmental intervention is required to increase pricing competition and decrease pharmaceutical companies' abilities to stifle competition, streamline generic drug approval processes, encourage the development of new effective affordable antibiotics and set appropriate pricing caps on essential medications.

There remains controversy of the role if any of antibiotic treatment for persistent Lyme disease symptoms as well as the existence of a condition referred to as "Chronic Lyme disease." As previously mentioned development of a gold standard test and further research and education could put this controversy to rest.