



## A Success Story: Laboratory Testing for Suspected Acute Tick-Borne Infections

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### INTRODUCTION

Based on comparative benchmark data provided by our major reference laboratory, our laboratory was a significant outlier in our network with regard to *Babesia* and *Anaplasma* PCR testing. At the time that we started this project, payors were not reimbursing for most of this testing, and therefore this represented not only an area of likely overutilization, but also a major cost to our hospital (approximately \$200K annually). In addition to PCR testing, we were sending significant numbers of *Babesia* and *Anaplasma* serologic tests to our reference laboratory, the majority of which was unwarranted in our opinion.

### INTERVENTIONS USED IN OUR LABORATORY

Members of our lab team (including the Department Chair and the Medical Director of Microbiology) met with the Chief of Infectious Diseases at our hospital and jointly developed an algorithm for acute tick-borne testing that we agreed represented the optimal approach (see **Laboratory Testing for Suspected Acute Tick-borne Infections Module, Appendix B**). Based on this algorithm, we also achieved consensus that *Babesia* and *Anaplasma* PCR testing and *Babesia* and *Anaplasma* serologic testing were currently being overutilized, and therefore these assays represented the target for our project.

Our utilization project was presented to our Physician-Hospital Organization (PHO) and was accepted as a new quality and cost/trend metric for the PHO's "internal performance framework", which included many metrics that defined funds flow as part of our risk contracts with insurers. Therefore, there was significant focus on the success of this project at the institutional level.

The goal of our project was to decrease *Babesia* and *Anaplasma* PCR testing by 10%, and *Babesia* and *Anaplasma* serologic testing by 50% compared to the same time interval from the prior year. Because the severity of tick season is variable year to year (due to many variables including weather), we utilized total Lyme enzyme-linked immunosorbent (EIA) assays to "normalize" the target test volumes in order to account for seasonal variability.

Our specific interventions included: (1) an educational campaign where both lab and infectious disease physicians presented the optimal test algorithm to multiple physician groups who order the testing (including primary care and emergency department physicians), (2) a lab consultative ("gatekeeper") role where certain testing patterns triggered a phone call from a pathologist to the ordering physician in order to discuss optimal testing strategies, and (3) removing previously established bundled "test panels" from our computerized physician order entry system, and which we believed contributed to unnecessary overutilization. The threshold for a proactive consultative/gatekeeper phone call was any circumstance in which both thin-thick smears and *Babesia* PCR testing was ordered simultaneously, and any circumstance where either *Babesia* or *Anaplasma* serologic testing was ordered. The consultative/gatekeeper role was only conducted during normal business hours and allowed us to further educate physicians who may have missed the educational sessions, or who merely needed a "just in time" reminder of optimal test strategies.

### PROJECT RESULTS / IMPACTS

In the first year of this utilization project, we achieved an 18% absolute decrease in *Babesia* and *Anaplasma* PCR assays compared to the prior year, and a 26% decrease when normalized to Lyme EIA testing. Similarly, we achieved an 44% absolute decrease in *Babesia* and *Anaplasma* serologic tests compared to the prior year, and a 50% decrease when normalized to Lyme EIA testing. Similar results were achieved in the second year of the project.

### SUMMARY

This utilization project was deemed a tremendous success by our hospital, our PHO, and our medical staff. In collaboration with our clinical colleagues, we reduced unnecessary testing, realized considerable savings for the laboratory and hospital, and in doing so demonstrated the significant value that pathologists bring to the table when it comes to utilization management. Our educational efforts were also greatly appreciated by the ordering providers, particularly the consultative approach provided by pathologists.