ABSTRACT #251

MARICOPA INTEGRATED HEALTH SYSTEM
Maricopa County Special Health Care District

Implementation of the sōna *Coccidioides* Antibody Lateral Flow Assay in the Clinical Laboratory Proves to Reduce Cost and Decrease Turnaround Time When Compared to Send out Immunodiffusion and Complement Fixation Testing

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ABSTRACT

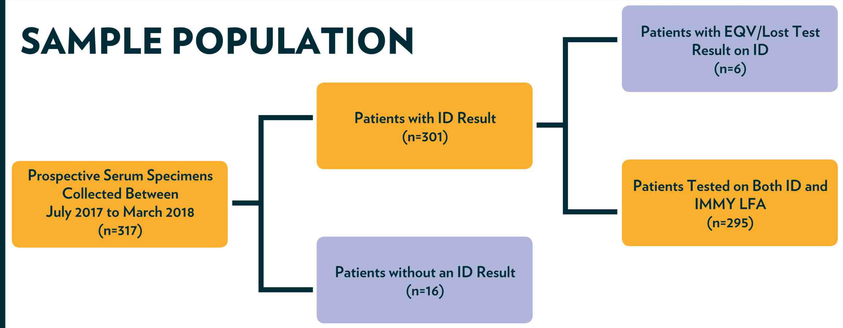
BACKGROUND
Coccidioidomycosis (Valley fever) is an airborne, invasive fungal infection endemic to Arizona, California, Mexico, and Central and South America. The dominant method of diagnosis is serology, which includes complement fixation (CF), immunodiffusion (ID), and enzyme immunoassay (EIA). These serological assays require highly trained personnel and are time consuming, with turnaround times (TAT) that range anywhere from 5 days to 2+ weeks. Due to costs of send outs and long TAT, Valley fever presents a diagnostic challenge to physicians and laboratorians. IMMY developed the sōna *Coccidioides* Antibody Lateral Flow Assay (LFA), a rapid and simple diagnostic assay that detects anti-*Coccidioides* antibodies in patient serum in 30 minutes.

METHODS
We tested the sōna *Coccidioides* Antibody LFA using 315 patient specimens and compared cost-analysis and TAT to a send out reference lab's ID and CF assays.

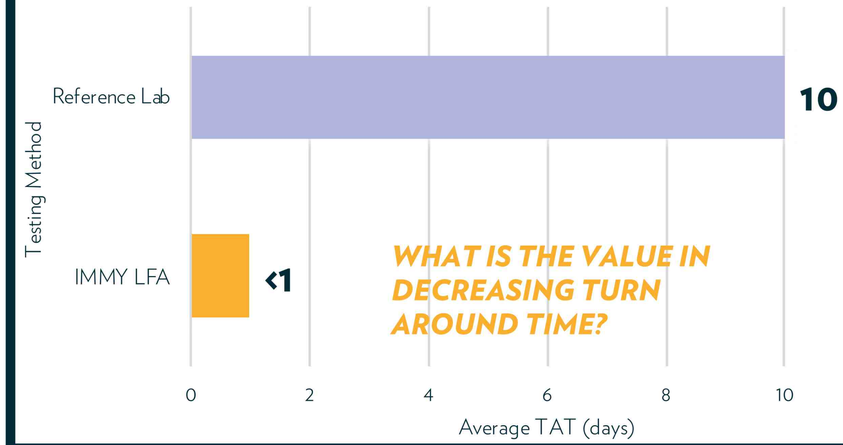
RESULTS
In this study, we found that after implementing the sōna *Coccidioides* Antibody LFA as a screening test, the cost of send-outs reduced by 84%, and the cost of all testing reduced by 68%. The TAT for send out testing averaged 5-10 days, whereas the sōna *Coccidioides* Antibody LFA averaged a total TAT of < 24 hours.

CONCLUSION
The sōna *Coccidioides* Antibody LFA offers a rapid, simple, and inexpensive method for accurately detecting antibodies against *Coccidioides spp.* in patient serum

SAMPLE POPULATION



Average Turnaround Time vs. Testing Method



ACKNOWLEDGMENT

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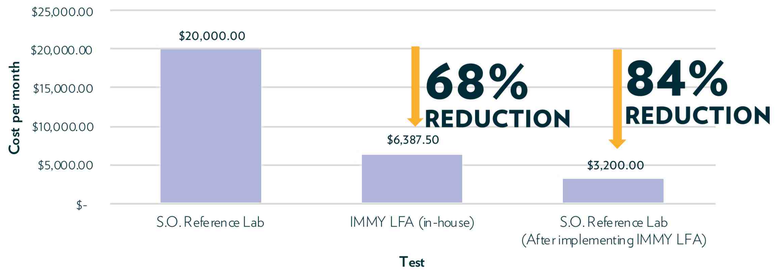
Table 1. Comparison of the Reference Lab ID and IMMY LFA for Detection of *Coccidioides* in Serum

		Serum (N=295)	
		Reference Lab ID (All Pts.)	
		Pos.	Neg.
IMMY LFA	Pos.	94	48
	Neg.	6	147
% Positive Agreement		94%	
% Negative Agreement		75%	
% Overall Agreement		82%	
PPV		66%	
NPV		96%	

After implementing the sōna *Coccidioides* Antibody LFA as a screening test, the cost of send-outs reduced by 84%, and the cost of all *Cocci* testing reduced by 68%.

Cost-Analysis of IMMY LFA vs. Send Out (S.O.) Reference Lab



CONCLUSIONS:

Rapid *Coccidioides* Antibody LFA offers a reliable screening approach for the detection of *Coccidioides spp*.

- **High Positive Percent Agreement and Negative Predictive Values**
- **Improved Time-to-Results from Days to MINUTES**
- **Decreased Number of send-outs to Reference Labs**
- **Reduced Overall Costs of *Coccidioides* Testing**