Table 3. Multivariable logistic regression analysis of predictive parameters for severe fever with thrombocytopenia syndrome and diagnostic performance of clinical scoring in differentiating severe fever with thrombocytopenia syndrome.

| Parameter                      | Odds Ratio (95% CI) | P-Value |
|--------------------------------|---------------------|---------|
| Elevated C reactive protein    | 4.84 (2.45-9.57)    | <0.001  |
| Neutropenia (<500/μL)          | 5.00 (1.28-19.42)   | 0.017   |
| Clinical features (≥ 3)        | 14.03 (3.31-60.69)  | <0.001  |

Conclusion. Structured granular medical data and machine learning approaches are an innovative tool that can be used in a retrospective setting for prediction of adverse outcomes in patients with prolonged febrile neutropenia. This study is the first important step toward clinical decision support based on predictive models in high-risk cancer patients.

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2188. Provider Education and Rapid Antigen Detection Test Use in Private and Academic Pediatric Clinics

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Background. Rapid antigen detection testing (RADT) is needed to differentiate Group A Streptococcal (GAS) pharyngitis from viral pharyngitis. Guidelines do not recommend RADT in patients with viral symptoms or in children <3 years old without GAS exposure. Reduction in unnecessary RADT use may impact inappropriate antibiotic use by decreasing prescriptions in children likely colonized with GAS. We examined the impact of guideline concordant education of appropriate RADT and antibiotic use in pharyngitis on providers’ (physician and APRN) use of RADT in an academic and private pediatric primary care clinic.

Methods. Retrospective chart review of 1,085 healthy children, age 1–5 years old, seen in clinics between September 2015 and March 2019 (355 pre- and 730 post-education; 211 academic and 874 private). Education occurred in 3/2017. Cases selected had either complaint of sore throat, RADT, or diagnosis of GAS pharyngitis or pharyngitis. Data collected included the presence of viral symptoms (e.g., cough, rhinorrhea), RADT/GAS culture results, diagnosis, and prescribed antibiotics. RADT was deemed unnecessary for all children <3 years old without GAS exposure, in patients with ≥2 viral symptoms, or in patients ≥3 years old without pharyngitis.

Results. Overall, RADT use decreased from pre to post intervention (72.1% vs. 50.4%, P ≤ 0.0001). Unnecessary RADT use decreased overall (50.4% vs. 38.1%, P ≤ 0.0001; academic: 38.1% vs. 28.1%, P ≤ 0.0001; private: 50.4% vs. 38.1%, P ≤ 0.0001). Unnecessary RADT use decreased for children <3 years old (28.1% vs. 7.4%, P ≤ 0.0001) and ≥2 viral symptoms (65.7% vs. 16.5%, P ≤ 0.0001).

Conclusion. Unnecessary RADT use decreased in the post-education period overall (34%), in children <3 years old (21%), and in patients with ≥2 viral symptoms (49%). Reductions were also seen in both academic (21%) and private (40%) clinics and in children <3 years old (21.7% vs. 7.4%, P ≤ 0.0001) and ≥2 viral symptoms (65.7% vs. 16.5%, P ≤ 0.0001).
number of titers sent to state lab increased over 13-fold from 2017 to 2018. The system facilitated laboratory follow-up resulting in 61% of samples sent as pairs (acute + convalescent), compared with 36% of samples paired in 2017 (Figure 3).

**Conclusion.** This multidisciplinary process led to improved case identification, improved testing efficiency and sustainable surveillance for RMSF. There was a marked increase in RMSF cases tested at our site, an increase in the number of samples tested and the percent of paired samples obtained during 2018. Beyond this relative improvement, the success rate in paired titers is now the highest in Arizona State, where approximately 40% of samples are paired. There is a need for practical and integrated systems to more accurately test and track cases of RMSF in highly endemic, rural areas. Working together across departments was crucial to address challenges and provide solutions, and led to the success of the model. This process provides a model framework for inter-departmental collaboration and develops a unique system to improve both patient care and education to healthcare workers and the community.

**Fig. 1 Model for Improved RMSF Surveillance**

**Fig. 2 RMSF Cases and Pairing at Site by Year**

**Fig. 3 Acute and Convalescent RMSF Titers**

**Disclosures. All authors:** No reported disclosures.

2189. Improving Surveillance of Rocky Mountain Spotted Fever (RMSF): Implementation of a Multidisciplinary Process

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**Background.** Several Arizona tribal lands are highly endemic for the potentially deadly tickborne disease Rocky Mountain spotted fever (RMSF). In 2017, state public health officials were concerned with the underreporting of RMSF in our rural American Indian (AI) community. Surveillance of RMSF using serologic methods requires two samples—a baseline (acute) titer and a second (convalescent) titer two to 4 weeks later. Patient return rates are low, leading to poor understanding of disease burden. Our hospital serves a predominately AI population that is spread across a large geographic area, with limited access to reliable transportation.

**Methods.** We established a model (Figure 1) for improved RMSF surveillance with a multidisciplinary team comprising clinicians, pharmacists, laboratorians, community health representatives (CHRs), environmental health, clinical care coordinators (CCCs), and public health nurses. The success and sustainability of the system depends on multiple departments sharing the workload.

**Results.** As a result of the model, we identified 22 cases of RMSF in 2018, including one death (Figure 2). Testing in the community increased over 9-fold and the total proportion of tests sent increased from 0.1–1.9 to antibiotic susceptibility results was 2.4 days (IQR 1.5–3.3).

**Conclusion.** This multidisciplinary process led to improved case identification, improved testing efficiency and sustainable surveillance for RMSF. There was a marked increase in RMSF cases tested at our site, an increase in the number of samples tested and the percent of paired samples obtained during 2018. Beyond this relative improvement, the success rate in paired titers is now the highest in Arizona State, where approximately 40% of samples are paired. There is a need for practical and integrated systems to more accurately test and track cases of RMSF in highly endemic, rural areas. Working together across departments was crucial to address challenges and provide solutions, and led to the success of the model. This process provides a model framework for inter-departmental collaboration and develops a unique system to improve both patient care and education to healthcare workers and the community.

**Fig. 1 Model for Improved RMSF Surveillance**

**Fig. 2 RMSF Cases and Pairing at Site by Year**

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