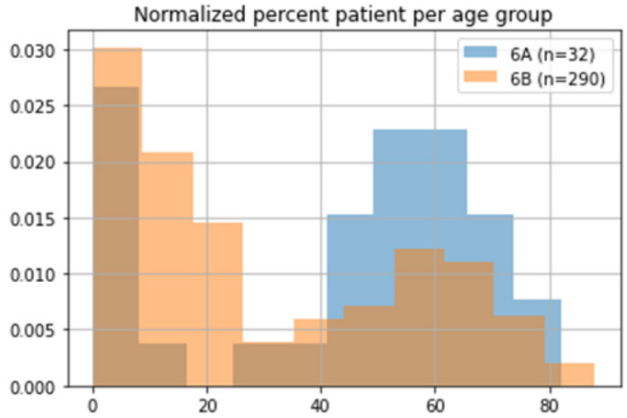
Methods. Karius Test™ (KT) developed and validated in Karius's CLIA certified/CAP accredited lab, detects mcfDNA from plasma. mcfDNA is extracted, NGS performed, human sequences removed and remaining sequences aligned to a curated pathogen database of > 1500 organisms. Organisms present above a statistical threshold are reported and quantified. For > 85% of tests the time to result reporting is the next day from sample receipt. KT results were reviewed from November-2018 to May-2021 for detections of HHV6A and HHV6B. The comparative incidence of HHV6A and HHVB detections, their age distributions and their quantitative viral concentration in molecules/μL (MPM) were assessed.

Results. KT detected 322 cases of HHV6; 10% (n=32) were HHV6A and 90% (n=290) HHV6B (Table 1). HHV6B had a higher relative abundance in children (with a distribution into adolescence) compared to adults (Figure 1). The average HHV6A MPM was 860 (range 27 - 10,472); the average HHV6B MPM was 3,361 (range 21 - 131,518).

Table 1. Summary of HHV-6 Detections

Virus variant	# of detections	MPM (RI < 10) mean/median	MPM range	Interquartile range	MPM SD
HHV6A	32	860 / 191	26.8 - 10,472	661.37	+/- 2,007
HHV6B	290	3,361 / 379	21 - 131,518	1,707.55	+/- 10,850

Figure 1. Distribution of HHV6A and HHV6B by Age Group



Conclusion. The distribution of the HHV6 variants detected through KT shows an overwhelming 9:1 predominance of HHV6B to HHV6A. The application of mcfDNA metagenomic sequencing for open-ended detection, variant determination and quantification of HHV6 provides more specific resolution than serological and PCR methods. KT may lend important insights into the association of specific HHV6 variants with clinical syndromes affecting vulnerable populations.

Disclosures. **Jose Alexander, MD, D(ABMM), FCCM, CIC, SM, MB(ASCP), BCMAS**, **Karius** (Employee) **Sivan Bercovici, PhD**, **Karius** (Employee) **Nicholas R. Degner, MD, MPH, MS**, **Karius Inc.** (Employee, Shareholder) **Ricardo Castillo-Galvan, MD MPH**, **Karius Inc.** (Consultant) **Aparna Arun, MD**, **Karius** (Employee) **Ann Macintyre, DO**, **Karius, Inc.** (Employee) **Bradley Perkins, MD**, **Karius, Inc.** (Employee) **Asim A. Ahmed, MD**, **Karius, Inc.** (Employee) **Matthew Smollin, PharmD**, **Karius, Inc.** (Employee)

674. Evaluation of the Access Bio CareStart™ Rapid SARS-CoV-2 Antigen Test in Asymptomatic Individuals Tested at a Community Mass-testing Program in Western Massachusetts

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Background. Point-of-care antigen-detecting rapid diagnostic tests (RDTs) to detect Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) represent a scalable tool for surveillance of active SARS-CoV-2 infections in the population. Data on the performance of these tests in real-world community settings will be paramount for their implementation to combat the COVID-19 pandemic.

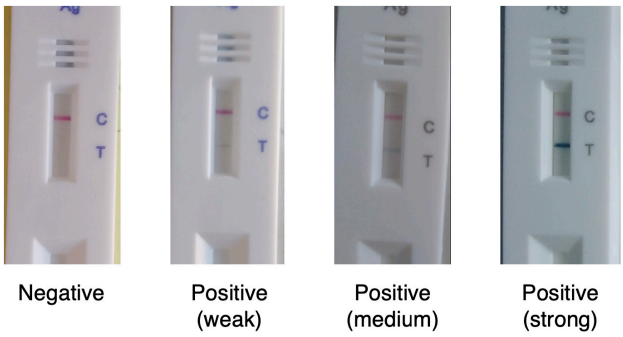
Methods. We evaluated the performance characteristics of the CareStart™ COVID-19 Antigen Test (CareStart) in a community testing site in Holyoke, Massachusetts. We compared CareStart to a SARS-CoV-2 reverse transcriptase quantitative polymerase chain reaction (RT-qPCR) reference, both using anterior nasal swab samples. We calculated the sensitivity, specificity, and the expected positive and negative predictive values at different SARS-CoV-2 prevalence estimates.

Results. We performed 666 total tests on 591 unique individuals. 573 (86%) were asymptomatic. There were 52 positive tests by RT-qPCR. The sensitivity of CareStart was 49.0% (95% Confidence Interval (CI): 34.8 – 63.4) and specificity was 99.5% (95% CI: 98.5 – 99.9). Among positive RT-qPCR tests, the median cycle threshold (Ct) was significantly lower in samples that tested positive on CareStart. Using a Ct less than or equal to 30 as a benchmark for positivity increased the sensitivity of the test to 64.9% (95% CI: 47.5 – 79.8).

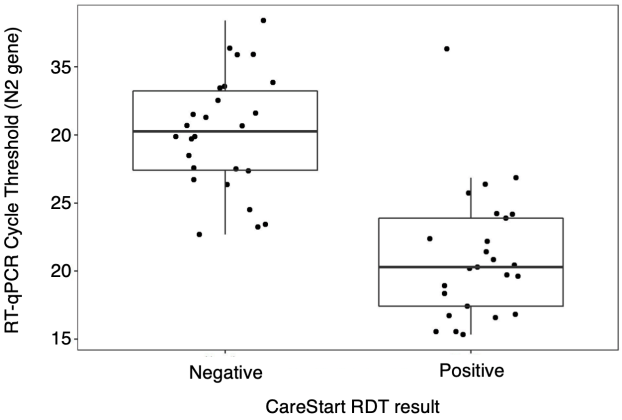
	n	Total tests	Performance Characteristic	Estimate (%)	95% Confidence Interval
Rapid Test Results					
Positive	25	51	Sensitivity	49.0%	(34.8% - 63.4%)
Negative	577	580	Specificity	99.5%	(98.5% - 99.9%)

Performance characteristics of CareStart test results benchmarked against the RT-qPCR gold standard (excluding undetermined results).

Performance characteristics of CareStart test results benchmarked against the RT-qPCR gold standard (excluding undetermined results).



Examples of images of CareStart rapid test showing variable band intensities.



N2 gene RT-qPCR Cycle threshold (Ct) values corresponding to positive and negative CareStart rapid antigen test results for all RT-qPCR positive samples (n=52).

Conclusion. Our study shows that CareStart has a high specificity and moderate sensitivity. The utility of RDTs, such as CareStart, in mass implementation should prioritize use cases in which a higher specificity is more important, such as triage tests to rule-in active infections in community surveillance programs.

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

675. Crimean-Congo Hemorrhagic Fever Beyond Ribavirin: A Systematic Review

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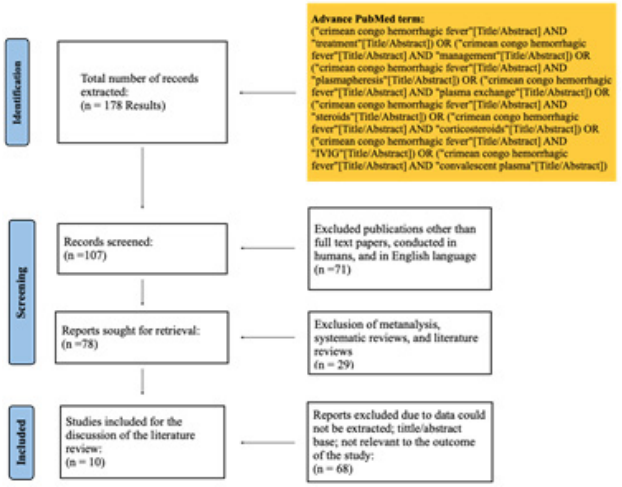
Session: P-31. Diagnostics: Virology

Background. The Crimean-Congo Hemorrhagic Fever (CCHF) is a tick-borne virus infection that has been reported in about 30 countries worldwide. Clinical presentation is divided into three phases: pre-hemorrhagic, hemorrhagic, and convalescence. Ribavirin is standard of care treatment for acute infection and prophylaxis. However, the use of other treatments beyond ribavirin is largely unknown.

Methods. We conducted a systematic review using MOOSE protocol. The inclusion and exclusion criteria are seen in the Prisma diagram. For Bias Analysis we use a Robin-1 tool.

Literature review algorithm



Results. We gathered a total of 10 studies, which included 4 therapeutic plasma exchange (TPE), 2 corticosteroids, 2 IVIG, and 1 with convalescent plasma (CP).

TPE in one study showed decreased mortality rate and increased efficacy in patients with severe CCHF. While the other study reported pulmonary embolism related to the use of TPE. Nevertheless, the patients had good outcome in the end. Two case reports used TPE plus ribavirin and supportive measures. Both were discharged home and recovered without sequela. Corticosteroids were found to be beneficial in one study were the case fatality rate was lower with the addition of corticosteroids to ribavirin in severely ill patients (p=0.0014). In a case series of six patients, who received the combination in early stages of the disease had good clinical outcomes with improved survival. IVIG was shown to increase platelet counts in two studies. In the first study, platelet count increased above 150,000/mL in 8.5 +/- 2.5 days. While in the other study the normalization of platelets was seen in 4 - 4.8 days, with no significant difference (P = 0.49). In addition, there was a decrease in the duration of symptoms but there was no statistically significant difference in mortality rates (P = 0.171). CP treatment showed a survival rate of 86% in treated patients. CP was more useful in high-risk patients, defined as having a viral load of 10^8 copies/mL or more. The main limitations of the studies were the sample size and heterogenicity among the outcomes of the studies.

Conclusion. TPE, CP, IVIG, and corticosteroids were effective in improving the clinical outcomes of the patients. The use of these treatments beyond ribavirin should be explored in future studies.

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

676. Impact of Stratified Testing Algorithm Utilizing Rapid Testing and Polymerase Chain Reaction (PCR) Tests for Viral Infections

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Background. In 2017, the multiplex respiratory viral panel (RVP) test was the only test available for patients (pts) with respiratory symptoms in our emergency department (ED). In 2018, the more rapid influenza/respiratory syncytial virus (Flu/RSV) test was incorporated in a stratified testing algorithm (STA) – depending on clinical features and physician discretion, pts underwent either Flu/RSV or RVP. We analyzed the STA impact by comparing data between winters of 2017 and 2018.

Methods. In a retrospective, single-center cohort study in suburban NY, admitted pts ≥18 years diagnosed with viral infections (by either test) were included. We excluded pts diagnosed at another hospital, admitted to intensive care or observation (< 24 hours) units and pts with missing data. Data was collected through electronic medical chart review.

Primary outcomes were clinical evaluation time [time between triage and test order]; laboratory-turnaround (lta) time (between order and result); ED length of stay [EDLOS] (between admit order and bed assignment). Secondary outcomes included isolation time (between result to start of isolation precautions), treatment time (between result to influenza treatment). Outcome differences were assessed using Chi-Square and Mann-Whitney rank sum tests for categorical and continuous variables, respectively.

Results. 734 pts were included in the study [368 in 2017; 366 in 2018]. Median age was 75 years and 55.9% were female. After implementing the STA, EDLOS was significantly lower [**Table 1**], with no significant differences in other parameters. Lta times were slightly higher after implementation [25 minutes (2017) v/s 29 minutes (2018)].

Table 1. Differences in clinical and laboratory turnaround times among patients admitted with viral infections in winters of 2017 and 2018

Time Interval	Winter of 2017			Winter of 2018			P Value
	N	Median (minutes)	IQR	N	Median (minutes)	IQR	
Clinical evaluation time	368	48	26.5-118.5	366	45	26-101	0.499
Laboratory turnaround time	368	25	15-44	366	29	18-47	**0.027**
EDLOS	368	651	253-1132	366	335.5	151-896	**<0.001**
Time to isolation#	259	149	113-205	212	149.5	111.5-200	0.942
Time to treatment*	166	159.5	114-278	110	149.5	107-259	0.356

Key: EDLOS=emergency department length of stay; IQR=inter-quartile range. Footnote: #: Time to isolation was calculated only for the subset of patients with viral infections that required institution of isolation precautions. The documented analysis was performed only in these patient subsets. *: Time to treatment was calculated only for the subset of patients with Influenza infections that required antiviral therapy. The documented analysis was performed only in these patient subsets.

Conclusion. A stratified diagnostic algorithm may have reduced EDLOS, but without significant differences in other outcomes. A higher lta time might have been due to testing constraints, heterogeneous pt populations or other confounders. Prospective studies will help assess the real-world impact of such algorithms.

Disclosures. **Prashant Malhotra, MBBS, MD,FACP, FIDSA**, **Gilead Sciences** (Scientific Research Study Investigator, Other Financial or Material Support, Site PI for a industry funded multi center research study)

677. Compliance and Performance Characteristics of Subject Collected Versus Health-care Worker Collected Nasal Swabs for Respiratory Viral Surveillance

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Session: P-31. Diagnostics: Virology

Background. Self-collection of mid-nasal swabs (SCNS) at home is a convenient alternative to health-care worker-collected nasal swabs (HCWC) for determining the pathogen-specific epidemiology of influenza-like illness (ILI). We evaluated the