

Using a Dashboard to Improve Tracking of Coccidioidomycosis (CM) in Urgent Care Patients, Maricopa County Arizona.

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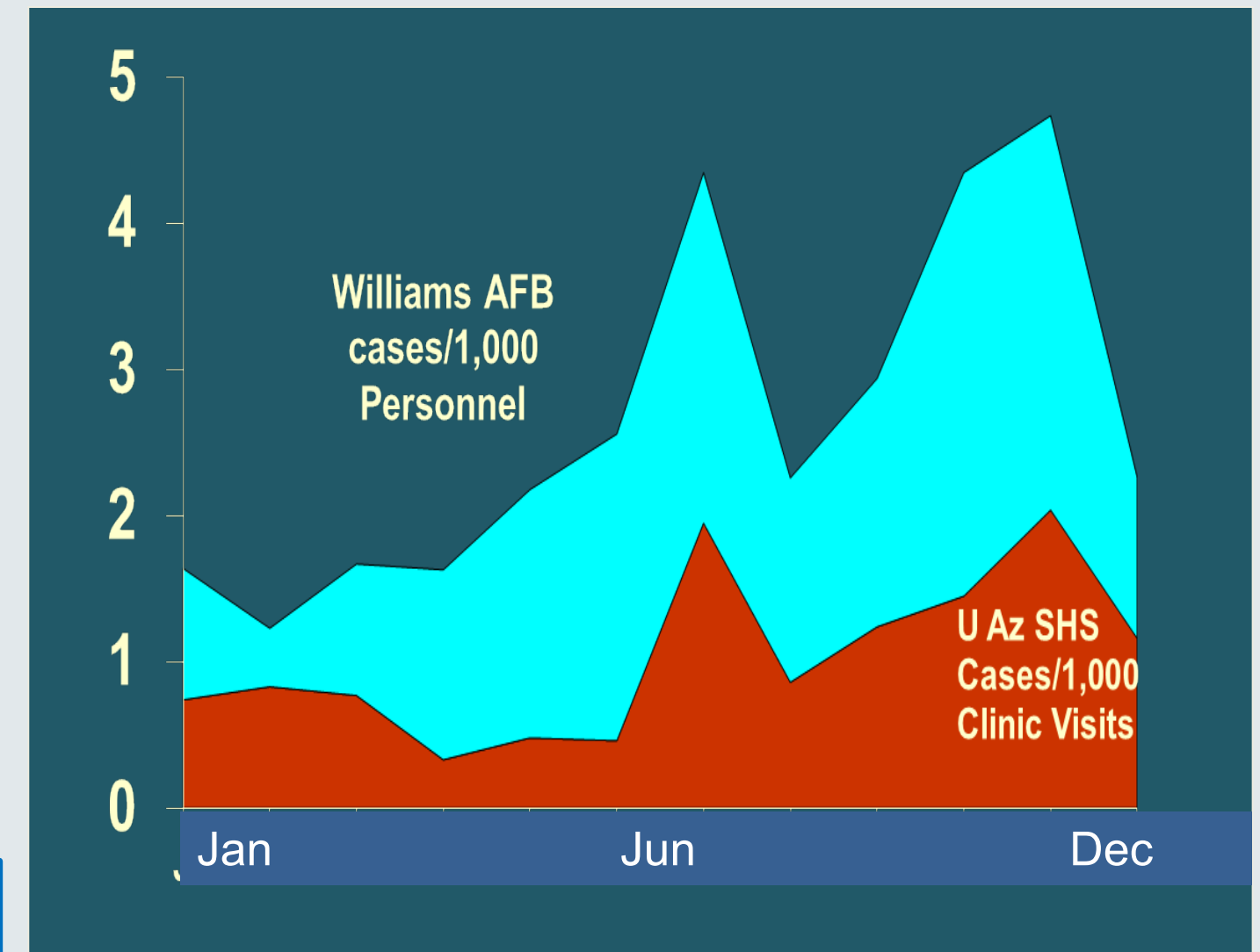
How often is community acquired pneumonia (CAP) due to CM?

Small Arizona prospective studies:

- n=55, 29% (16%-44%)*
- n=35, 17% (7%-34%)**

Rates vary at different times of the year:***

*Valdivia 2006; **Kim 2009 ***Hugenholtz 1957; Kerrick 1985



The Problem: Lack of Testing

Arizona CAP patients tested for coccidioidomycosis (CM)

- Medical Clinics (2003-4): * 2%-13%
- Emergency Departments (2014): ** 2.8%
- Urgent Care Clinics (2019): *** 7.9%

Southern California outpatient CAP (2011): ¥ 6.0%

Failure to diagnose CM has consequences[§]

- Overuse of antibacterial drugs
- Additional diagnostic tests and procedures
- Otherwise unnecessary hospitalization

*Chang 2008; **Khan 2018; ***Pu 2023; ¥Tartof 2018

§ Donovan 2019; Pu 2021

Systems Solution to improve CM testing

2015: UArizona physicians affiliated with Banner Health.

2018: Banner established a clinical practice for recognition and management of CM in ambulatory patients.

2020: Banner Urgent Care Services (BUCS) identified as infrequently testing CAP patients for CM. Starting in 2020, clinicians were reminded to do this when first hired and at quarterly medical updates.

Reminder slide used
quarterly and at onboarding

Valley Fever Protocol for BUCS 2023

Patient 18yrs or older
diagnosed with
PNA/suspected PNA when
evaluated by Provider

- Order Cocci Serologies – (Coccidioides Screen with flex to CF Titer when indicated (RL) CPT 1061)
- Verify PCP follow-up*

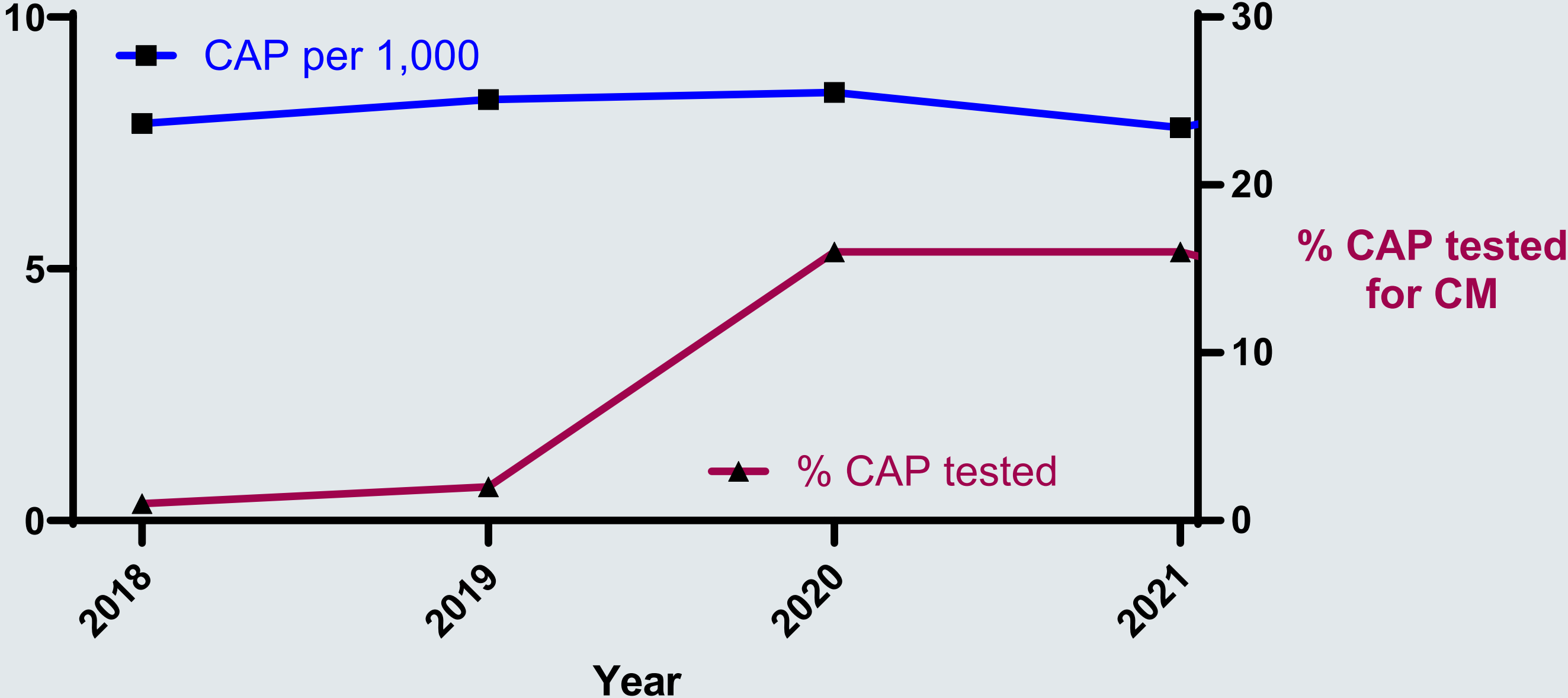
Cocci serologies results
positive/indeterminant
when results reviewed by
Provider

- Contact Patient to review results
- Add VF diagnosis to patient's **chronic** medical history
- Verify PCP follow-up*
- Do not start antifungal treatment in UC

*If Patient doesn't have a Primary Care Provider, use the Referral AMB order to request PCP follow up through BMG.

Periodic Reminders began in 2020

CAP per 1,000
BUCS patients



Pu et al. 2023

Systems Solution to improve CM testing

- 2015: UArizona physicians affiliated with Banner Health.
- 2018: Banner established a clinical practice for recognition and management of CM in ambulatory patients.
- 2020: Banner Urgent Care Services (BUCS) identified as infrequently testing CAP patients for CM (7.9%). Starting in 2020, clinicians were reminded to do this when first hired and at quarterly medical updates.
- 2023: To improve further, a CM dashboard was constructed, and this is the basis for the current presentation.

Methods

Setting: BUCS in Maricopa County, Arizona

BUCS has 56 clinics, 144-236 clinicians (NPs=50%; PAs=35%; MD/DOs=15%)
45 clinics are in Maricopa County.

Patients

All patient clinic visits, 2018-2023, with subset analyses for patients with CAP (ICD10=J18.*) or erythema nodosum (EN, L52).

Data from a Microsoft Power BI dashboard, repopulated daily

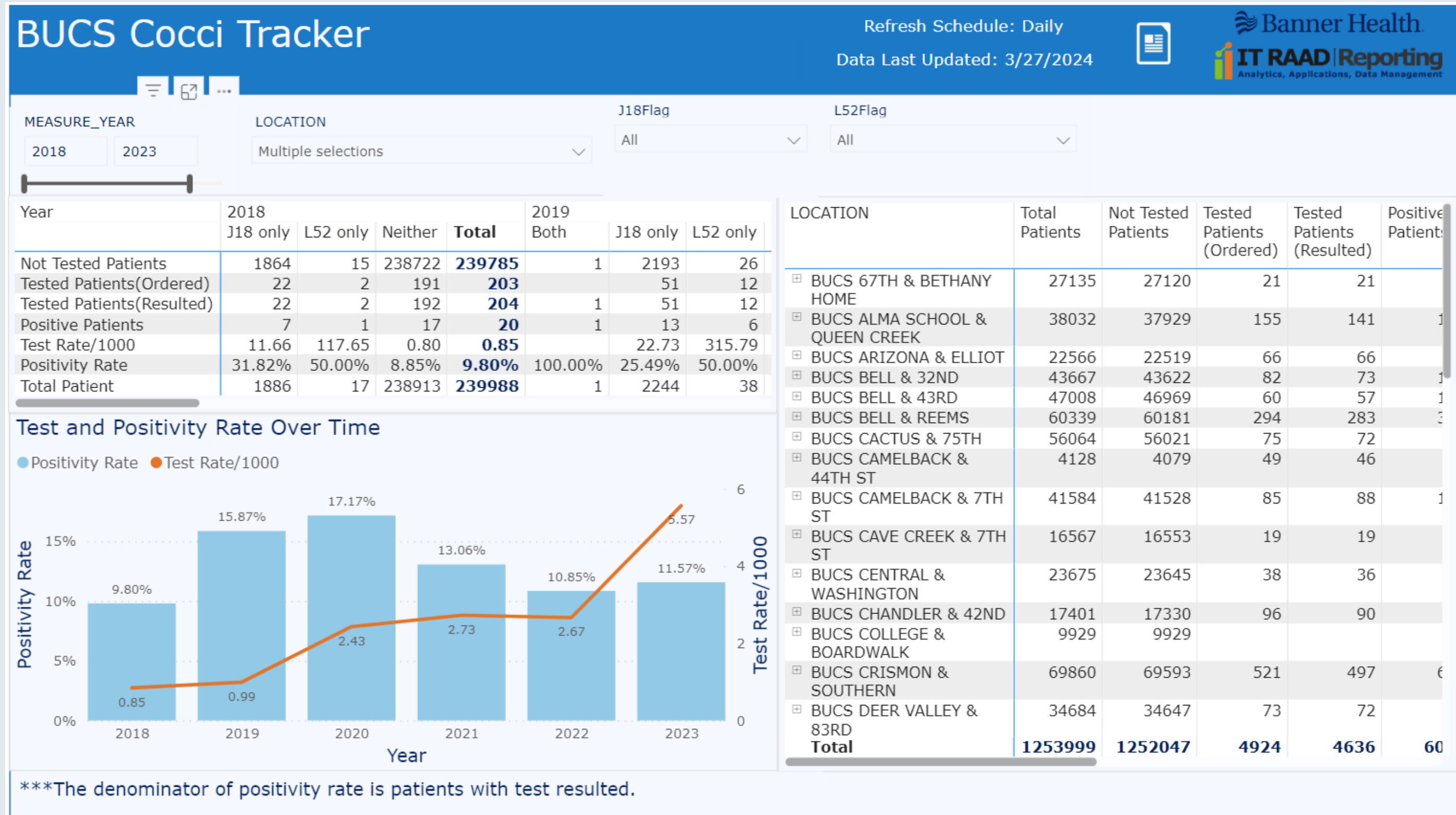
Frequencies of patient visits, occurrence of CAP or EN, CM testing, and results.

Monthly counts of confirmed CM cases reported to Maricopa County Department of Public Health.

Testing rates and results

All BUCS patients

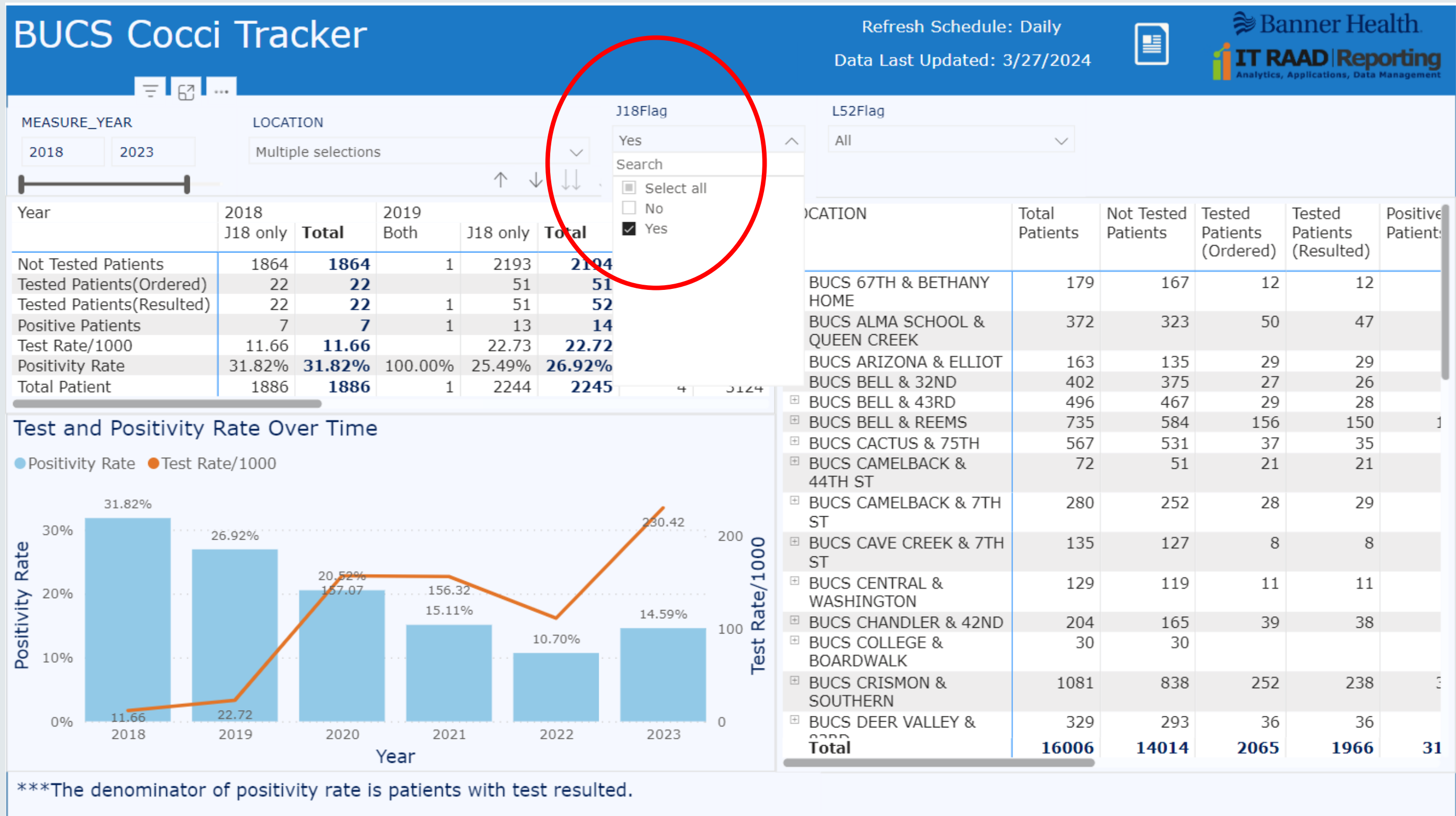
Red graph is test Rate per 1,000
Blue bars are % of CM tests Pos.



Testing rates and results

CAP only

Percent Positive
30%
0%



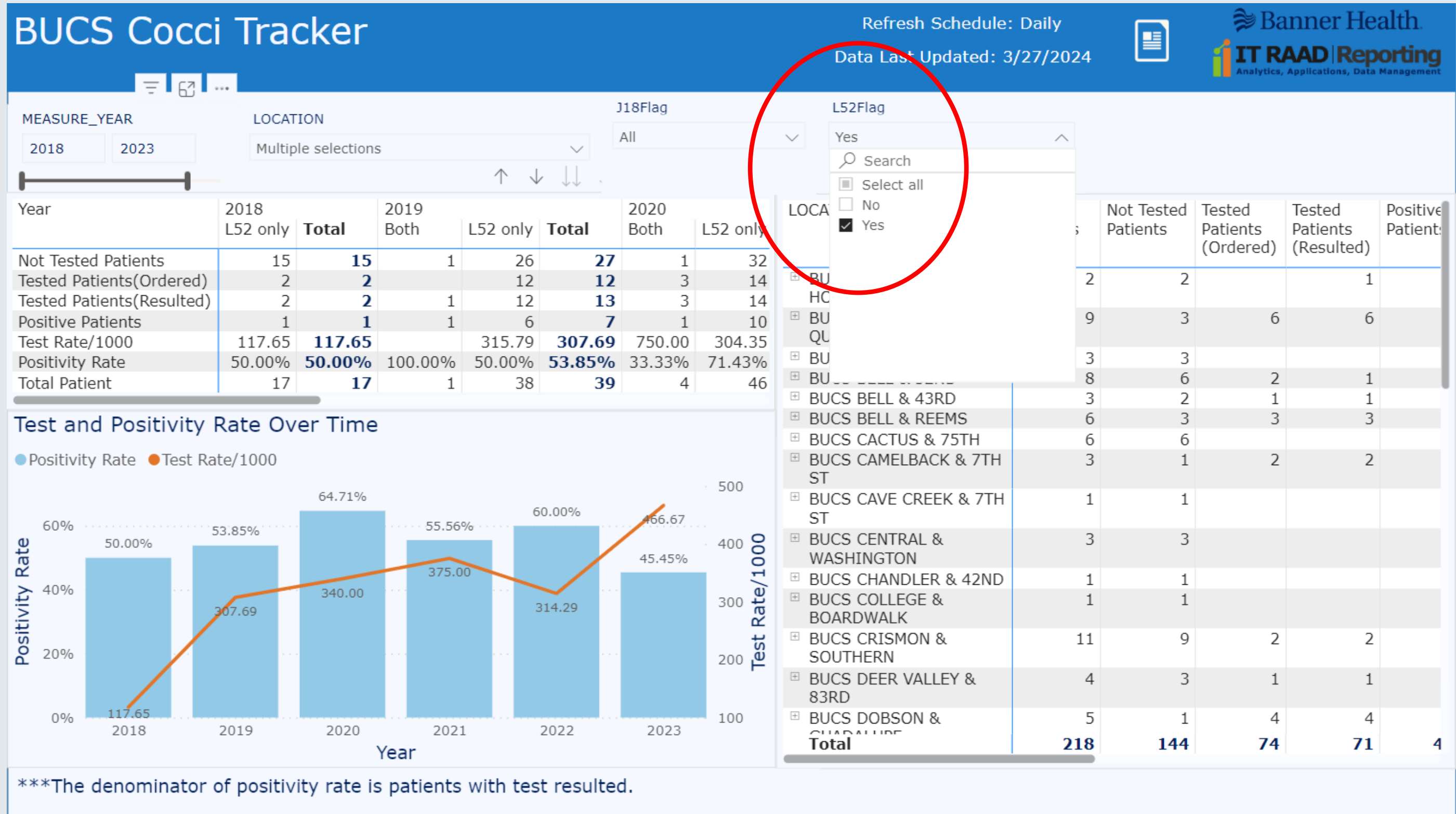
Testing rates and results

EN only

Percent Positive

60%

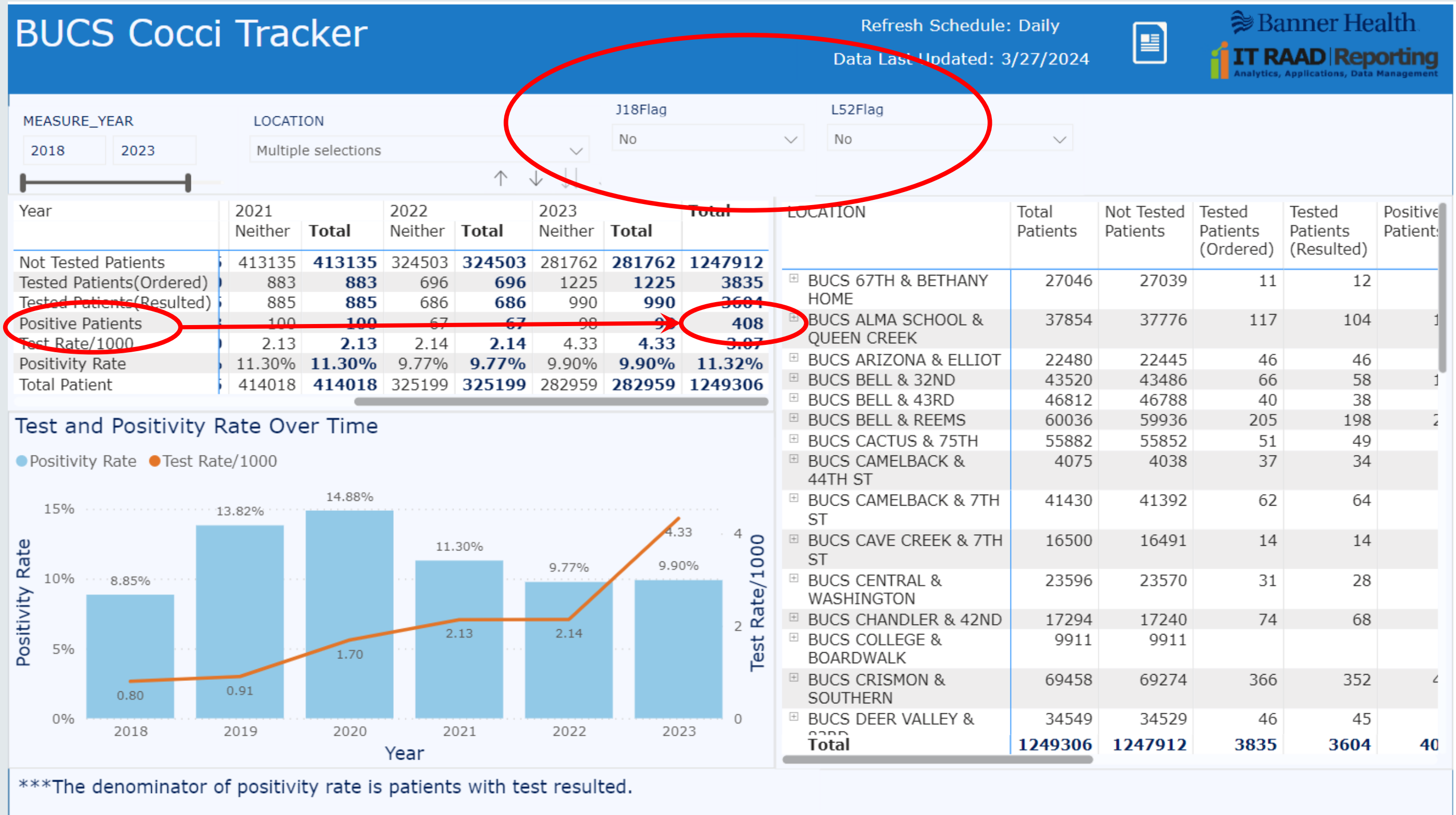
0%



Testing rates and results

No EN
No CAP
>50% of all CM

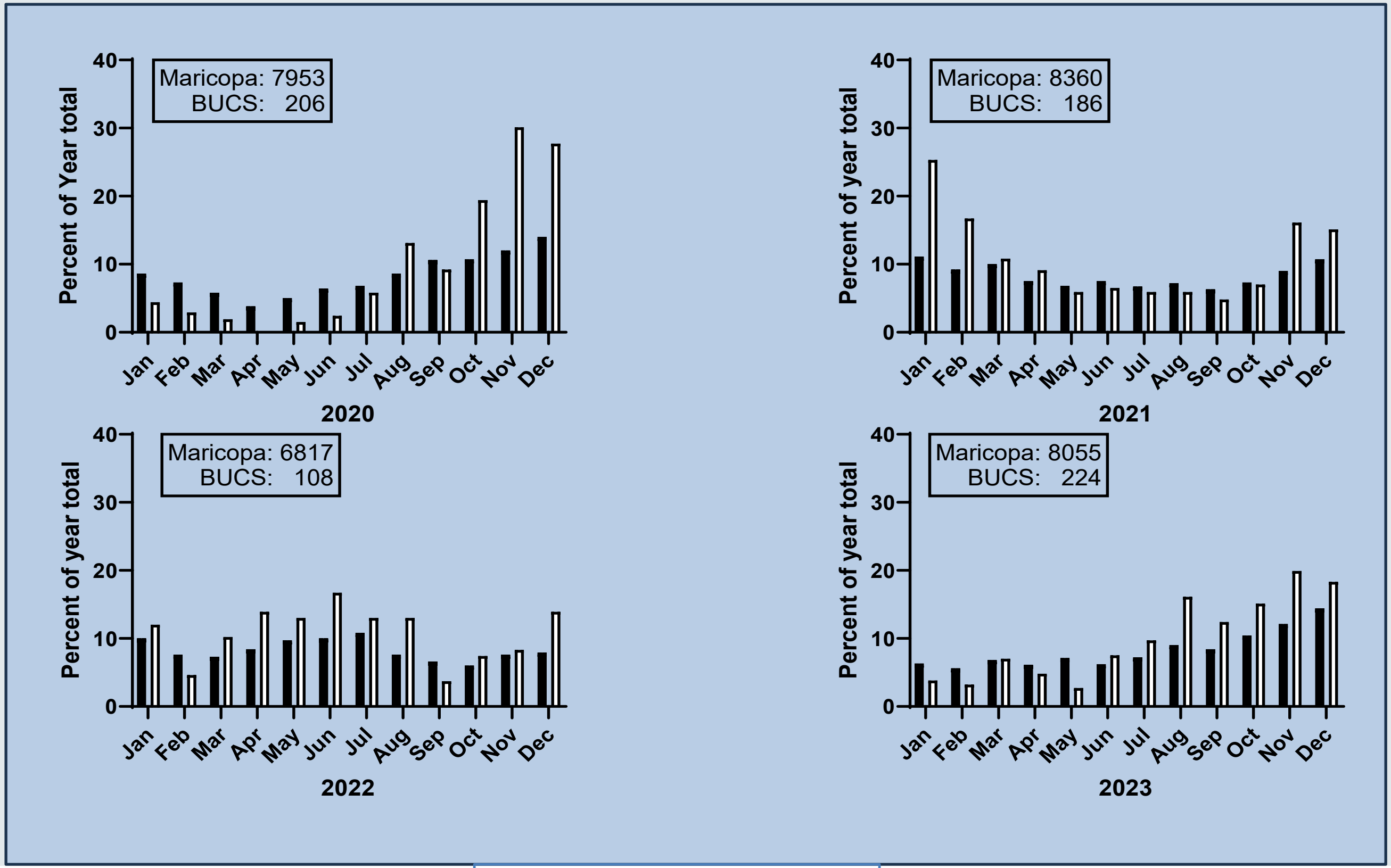
15%
Percent Positive
0%





Maricopa Co. Compared to BUCS

Coefficient
Of
Correlation
 $r=0.86$

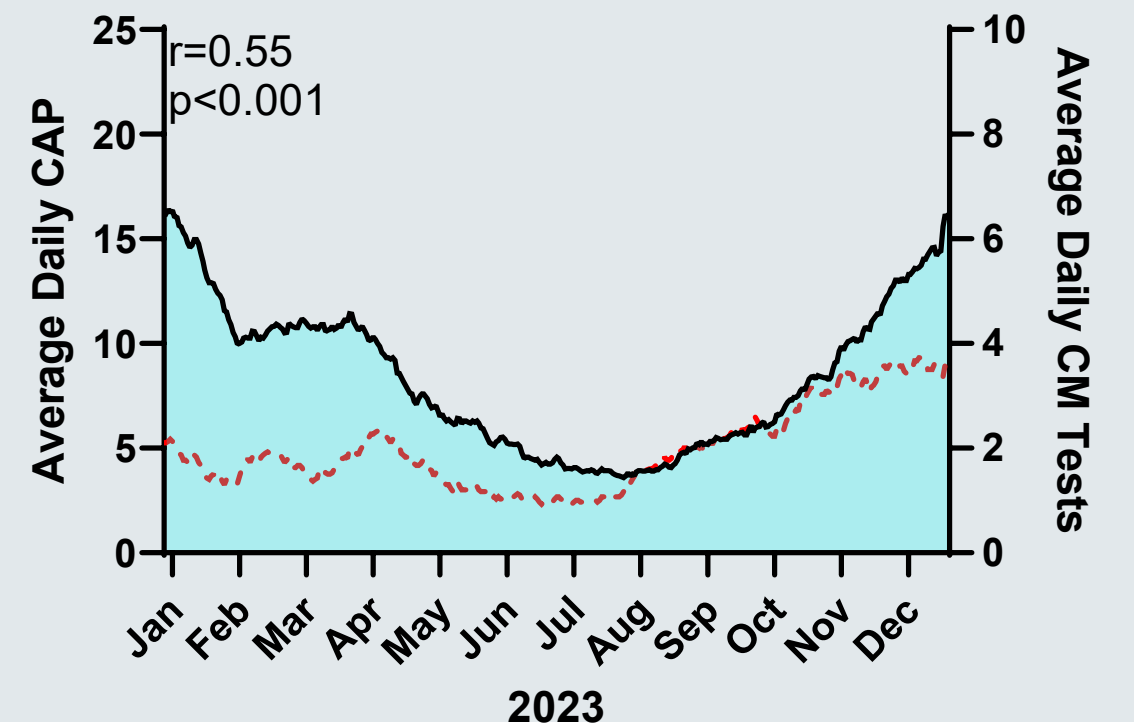
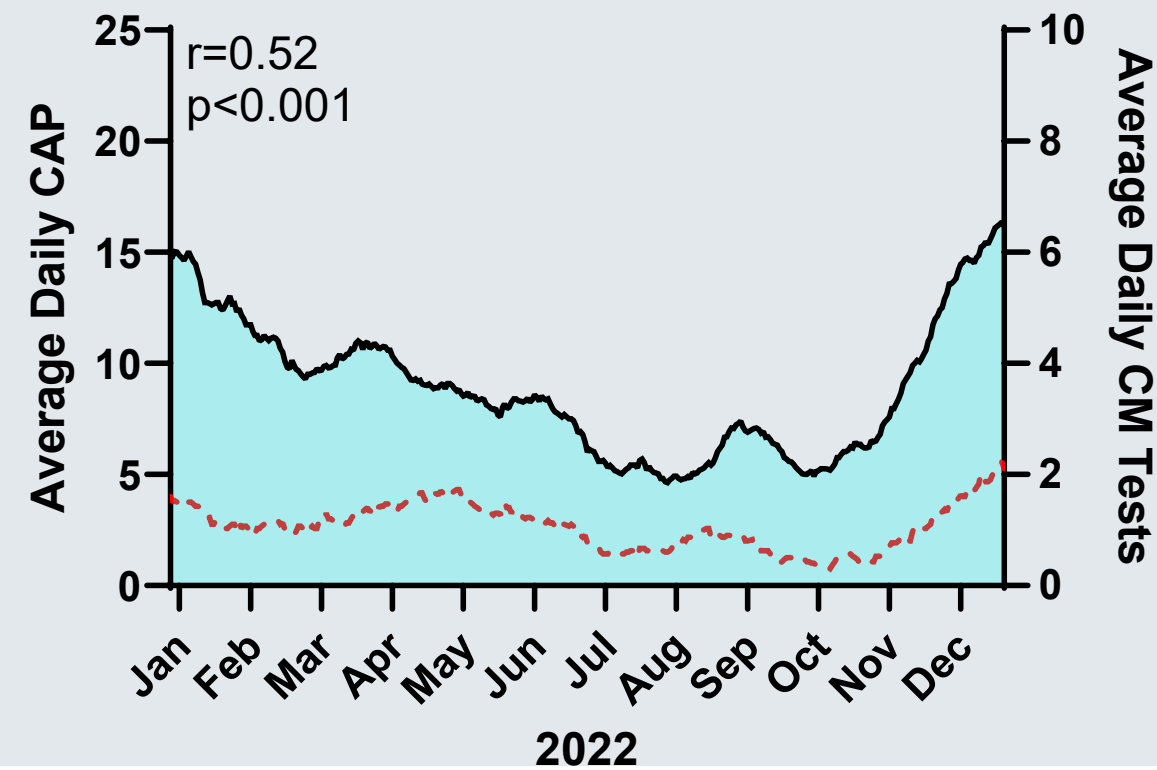
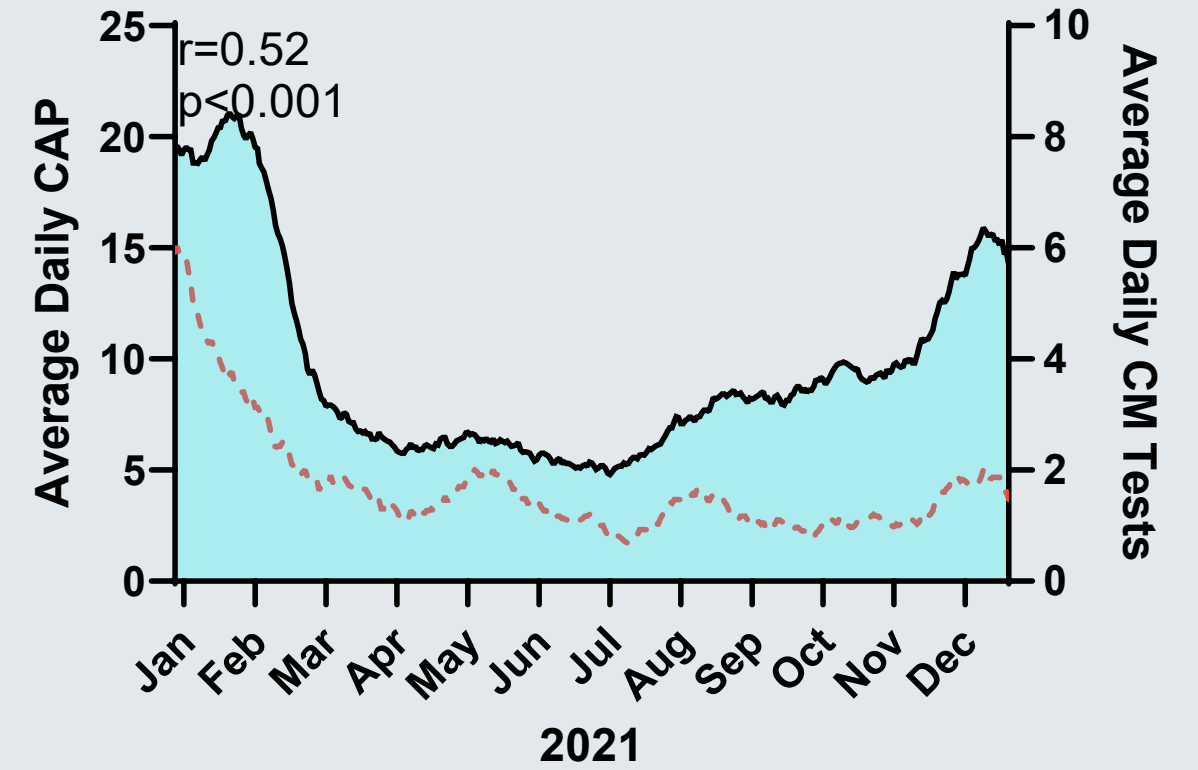
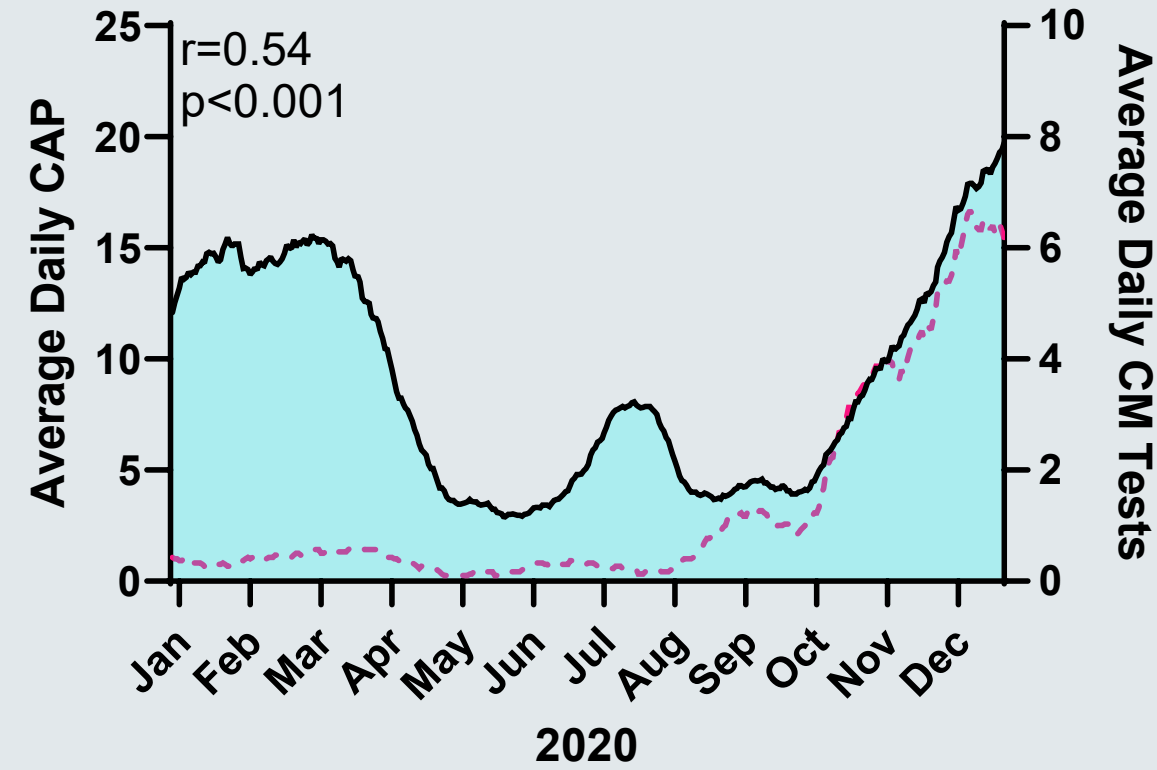


Black columns: Maricopa
White columns: BUCS

30-day moving average

CAP
All Causes

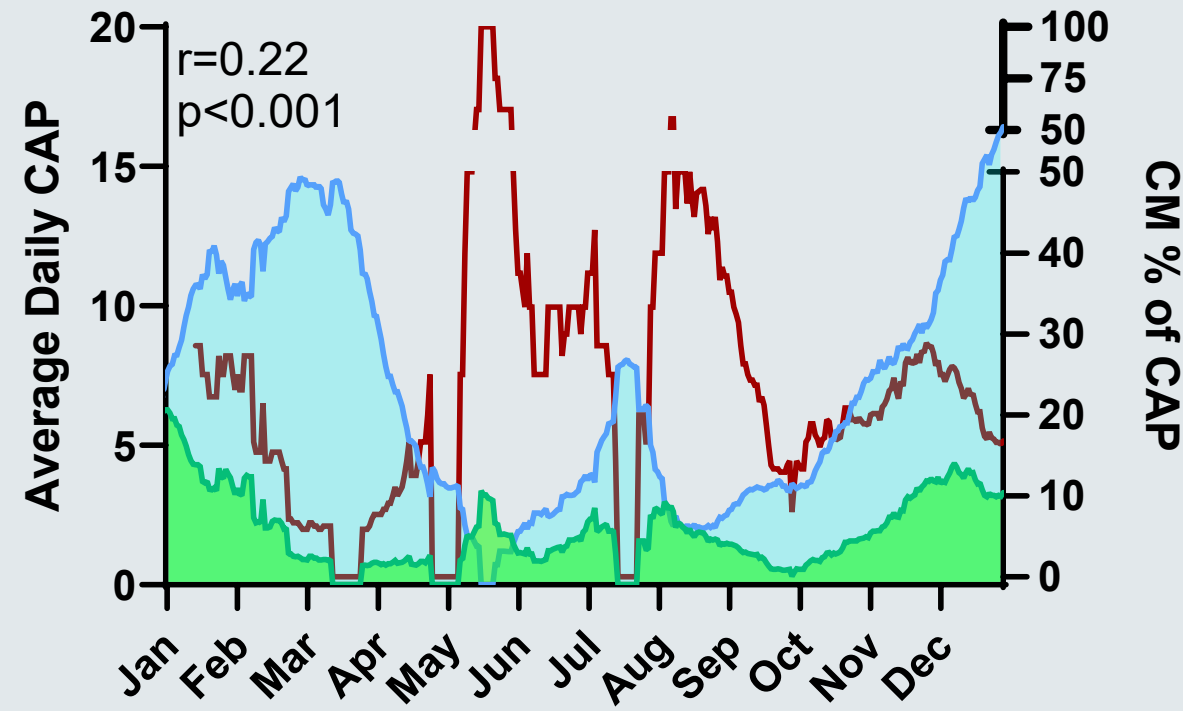
Lines are Tests
For CM



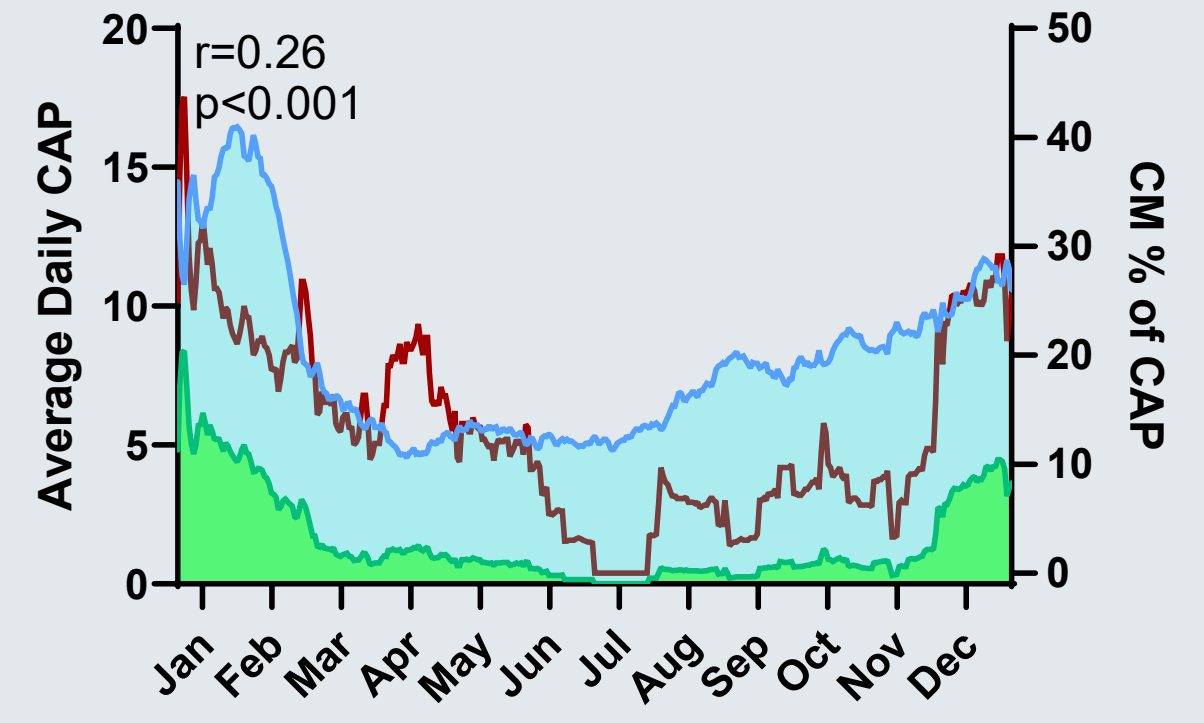
30-day moving average

Non-CM
CAP
CM CAP

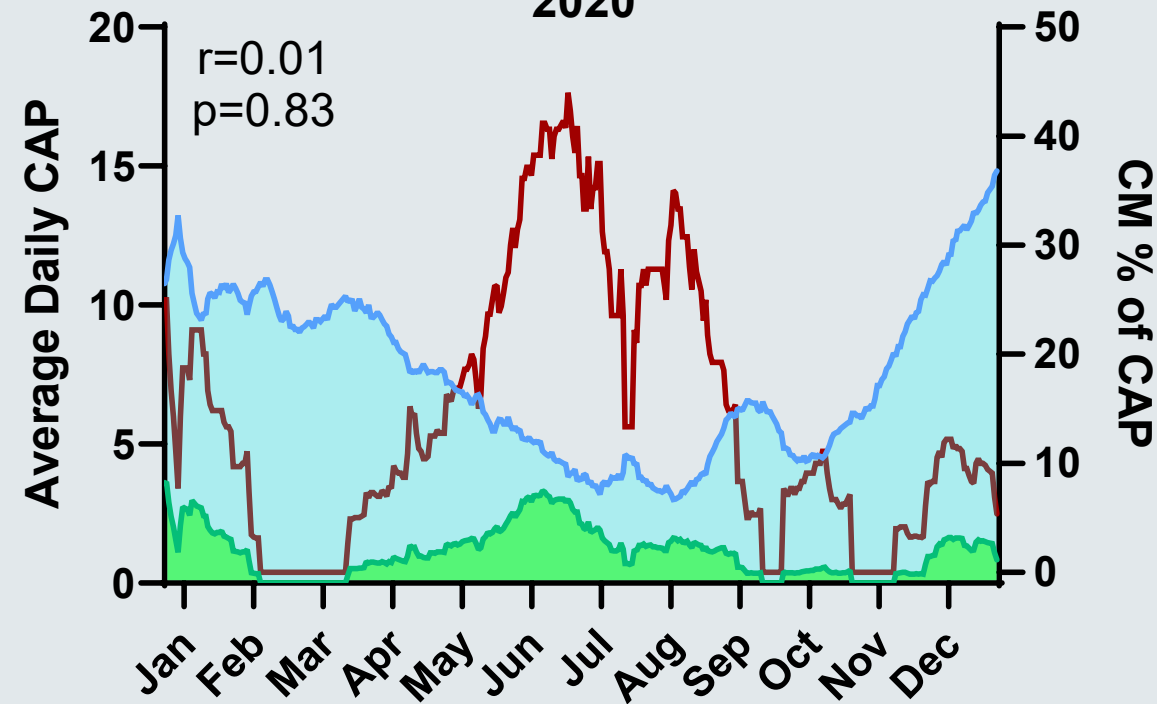
Lines are %
Of CAP
Due to CM



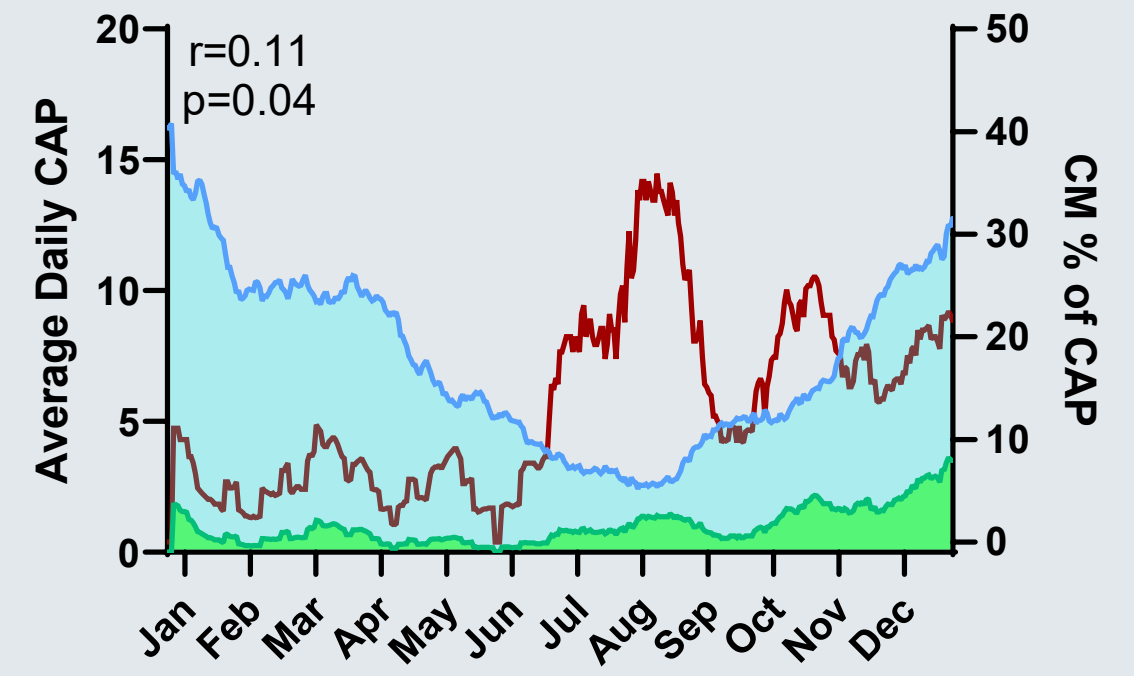
2020



2021



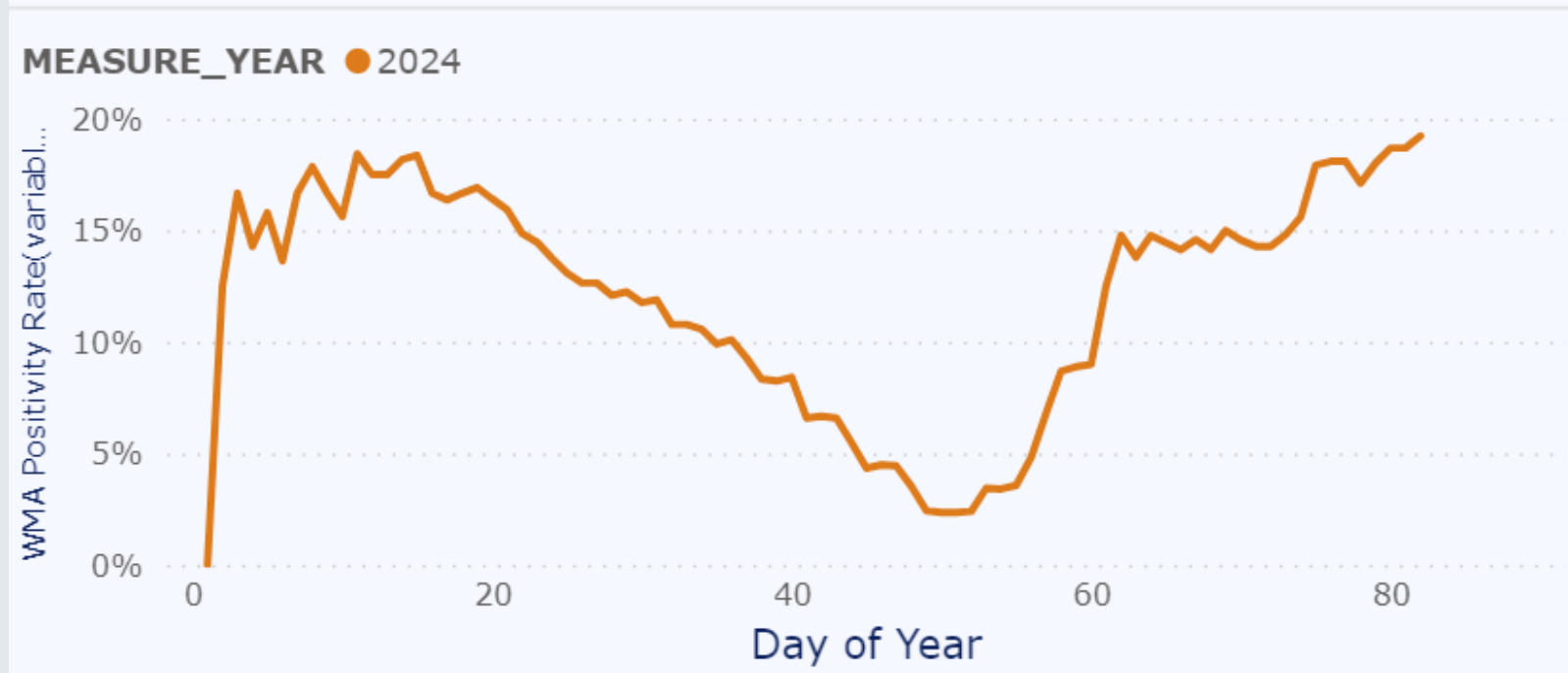
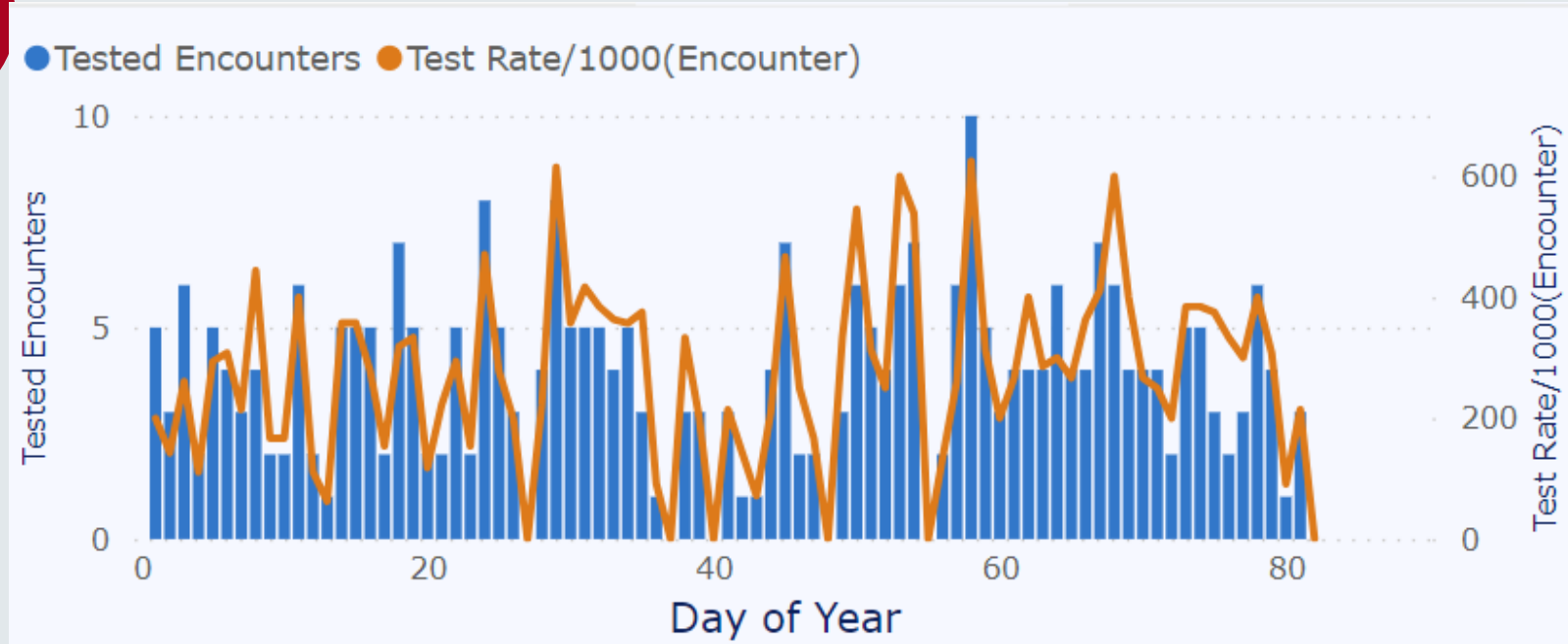
2022



2023

BUCS Dashboard

VFCE.Arizona.edu



This graph shows the positivity rate for people tested for Valley fever who had pneumonia in Maricopa county in 2023.

Maricopa County VF Data

This data is provided by Banner Urgent Care Services and is updated in near real time to show the latest Valley fever trends in Maricopa County.



This graph shows the 30-day running average of positive Valley fever cases in people with pneumonia who were tested for Valley fever in Maricopa county this YTD. This indicates the number of positive cases over the number of pneumonia patients who were tested for Valley fever on that day and the previous 29 days.

2023

2024 Date Key:

Day #	Date
30	Jan 30, 2024
60	Feb 29, 2024
90	Mar 30, 2024
120	Apr 29, 2024
150	May 29, 2024
180	Jun 28, 2024
210	Jul 28, 2024
240	Aug 27, 2024
270	Sep 26, 2024
300	Oct 26, 2024
330	Nov 25, 2024
360	Dec 25, 2024

2024 ytd

March 23, 2024

Summary

- Reminders to test CAP for CM improves testing practices.
- A CM dashboard may produce additional improvement.
- Since 2020, BUCS and Maricopa Co. monthly case counts are strongly correlated.
- As recommended, BUCS testing for CM follows CAP frequencies.
- % CAP due to CM ranges from <5% to >45%, and the timing of peak frequencies differ from year to year.
- *E. nodosum* in endemic areas should be tested routinely for CM.
- Over half of CM patients in BUCS had neither CAP nor *E. nodosum*.
- Example of private medicine assisting in public health surveillance.

Thank you

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