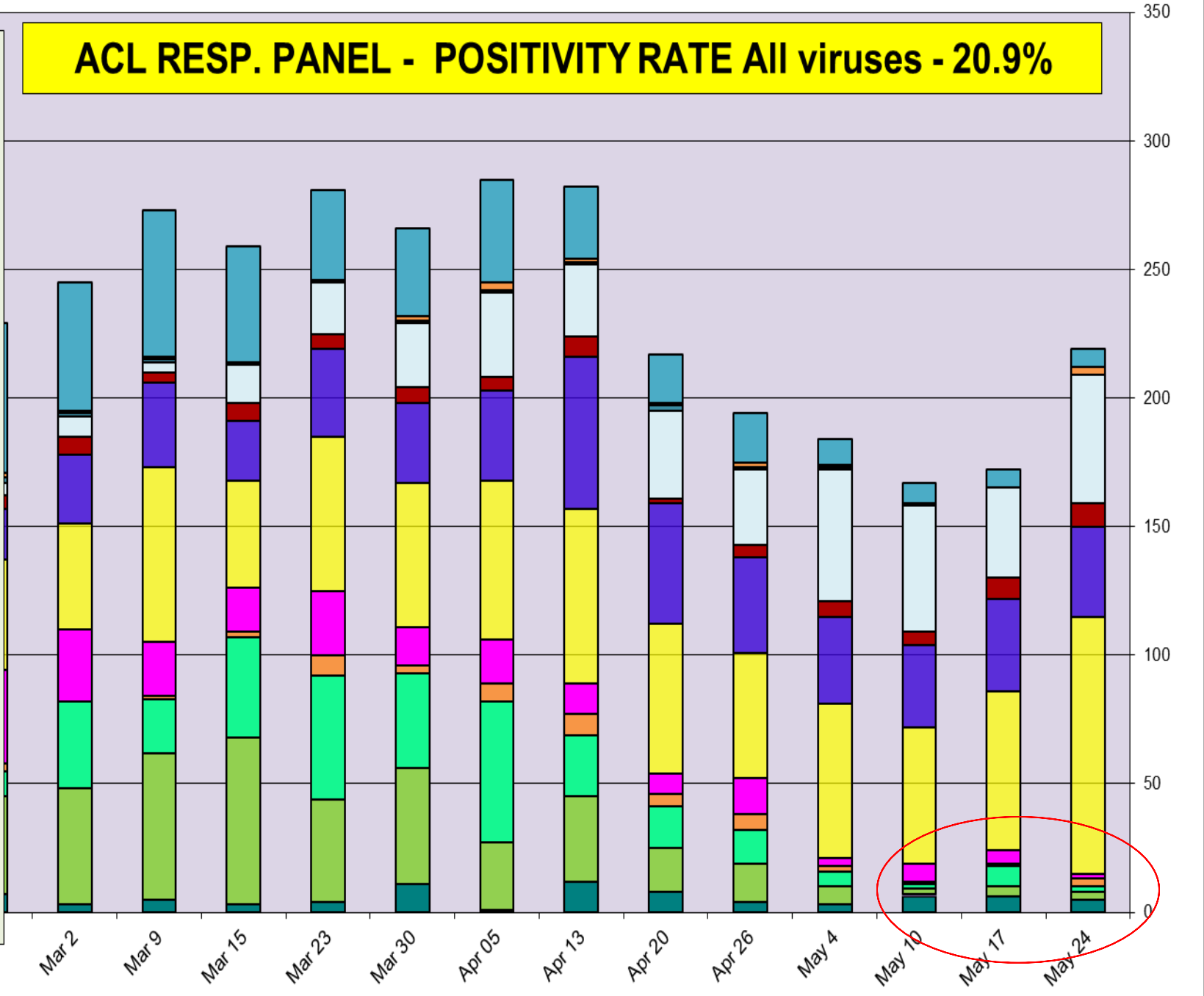


Respiratory Pathogens Feb 23 - May 24 2019

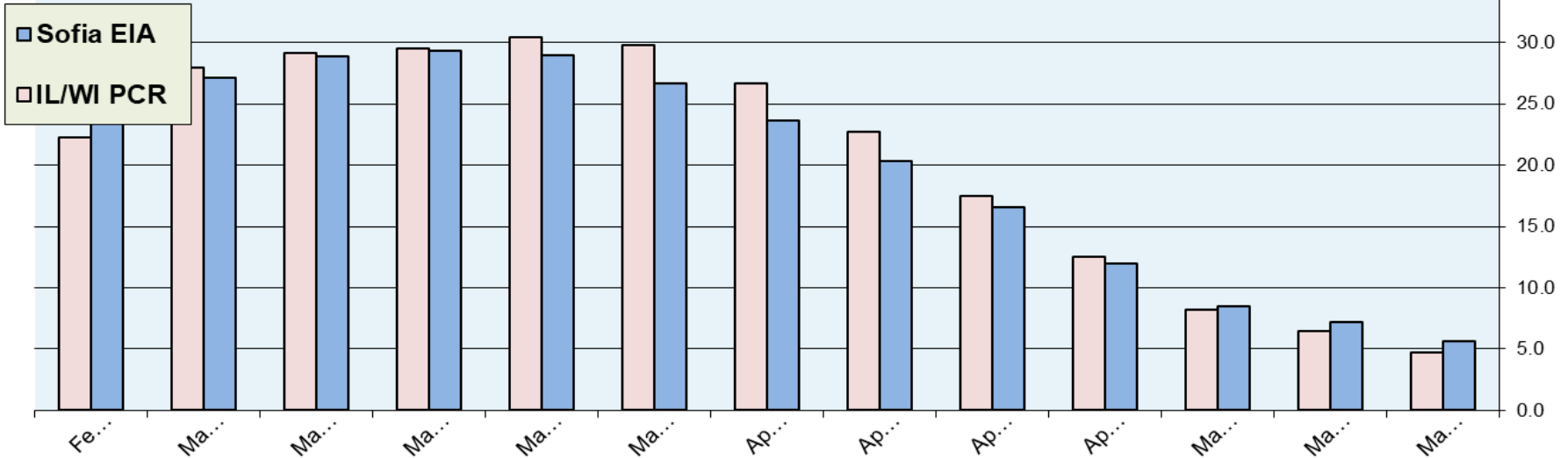
| Week | InfA-H1 | InfA-H3 | 2009 H1N1 | Inf B | RSV | All Para | EV / Rhino | Meta pneumo | Adeno | All Corona | Bocca | Mycoplasma | Chlamydia | Total Pos | POS FLU | Total | ACL %FLU | US %FLU | IL/WI PCR | Sofia EIA |
|--------|---------|---------|-----------|-------|-----|----------|------------|-------------|-------|------------|-------|------------|-----------|-----------|---------|-------|----------|---------|-----------|-------------------|
| May 24 | 0 | 2 | 3 | 3 | 2 | 50 | 100 | 35 | 9 | 7 | 5 | 0 | 3 | 219 | 8 | 1045 | 0.8 | n/a | n/a | 3.7 |
| May 17 | 0 | 8 | 4 | 1 | 5 | 35 | 62 | 36 | 8 | 7 | 6 | 0 | 0 | 172 | 13 | 1268 | 1.0 | 3.8 | 4.7 | 7.4 |
| May 10 | 1 | 2 | 2 | 1 | 7 | 49 | 53 | 32 | 5 | 8 | 6 | 0 | 1 | 167 | 6 | 1028 | 0.6 | 3.7 | 6.5 | Flu PCR % Rate |
| May 4 | 0 | 6 | 7 | 2 | 3 | 51 | 60 | 34 | 6 | 10 | 3 | 1 | 1 | 184 | 15 | 761 | 2.0 | 4.7 | 8.2 | |
| Apr 26 | 0 | 13 | 15 | 6 | 14 | 29 | 49 | 37 | 5 | 19 | 4 | 1 | 2 | 194 | 34 | 800 | 4.3 | 5.4 | 12.5 | 12.0 |
| Apr 20 | 0 | 16 | 17 | 5 | 8 | 34 | 58 | 47 | 2 | 19 | 8 | 2 | 1 | 217 | 38 | 827 | 4.6 | 8.1 | 17.5 | 16.6 |
| Apr 13 | 0 | 24 | 33 | 8 | 12 | 28 | 68 | 59 | 8 | 28 | 12 | 1 | 1 | 282 | 65 | 893 | 7.3 | 11.8 | 22.7 | 20.3 |
| Apr 05 | 0 | 55 | 26 | 7 | 17 | 33 | 62 | 35 | 5 | 40 | 1 | 1 | 3 | 285 | 88 | 893 | 9.9 | 15.1 | 26.7 | 23.7 |
| Mar 30 | 0 | 37 | 45 | 3 | 15 | 25 | 56 | 31 | 6 | 34 | 11 | 1 | 2 | 266 | 85 | 936 | 9.1 | 18.1 | 29.8 | 26.6 |
| Mar 23 | 0 | 48 | 40 | 8 | 25 | 20 | 60 | 34 | 6 | 35 | 4 | 0 | 1 | 281 | 96 | 984 | 9.8 | 22.1 | 30.4 | 28.9 |
| Mar 15 | 0 | 39 | 65 | 2 | 17 | 15 | 42 | 23 | 7 | 45 | 3 | 0 | 1 | 259 | 106 | 1076 | 9.9 | 26.0 | 29.5 | 29.4 |
| Mar 9 | 0 | 21 | 57 | 1 | 21 | 4 | 68 | 33 | 4 | 57 | 5 | 1 | 1 | 273 | 79 | 1011 | 7.8 | 25.8 | 29.2 | 28.9 |
| Mar 2 | 0 | 34 | 45 | 0 | 28 | 8 | 41 | 27 | 7 | 50 | 3 | 1 | 1 | 245 | 79 | 961 | 8.2 | 26.1 | 28.0 | 27.2 |
| Feb 23 | 0 | 10 | 38 | 3 | 36 | 5 | 43 | 20 | 5 | 58 | 7 | 2 | 2 | 229 | 51 | 908 | 5.6 | 26.7 | 22.3 | 26.5 |

ACL RESP. PANEL - POSITIVITY RATE All viruses - 20.9%

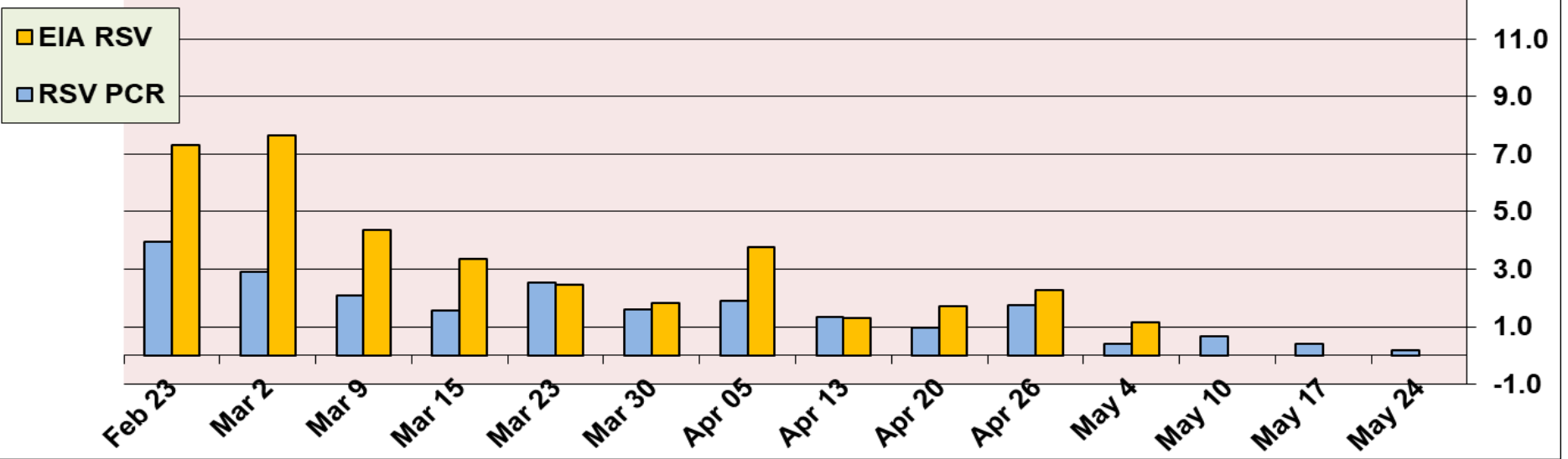
- All Corona
- Chla mydia
- Myco plasma
- All Para
- Adeno
- Meta pneumo
- EV / Rhino
- RSV
- Inf B
- InfA-H3
- 2009 H1N1
- InfA-H1
- Bocca



Regional IL/WI - FLU PCR 4.7% vs. ACL EIA 5.6% correlation



ACL RESP. PANEL - RSV PCR - 0.2%, RSV EIA - 0.0%



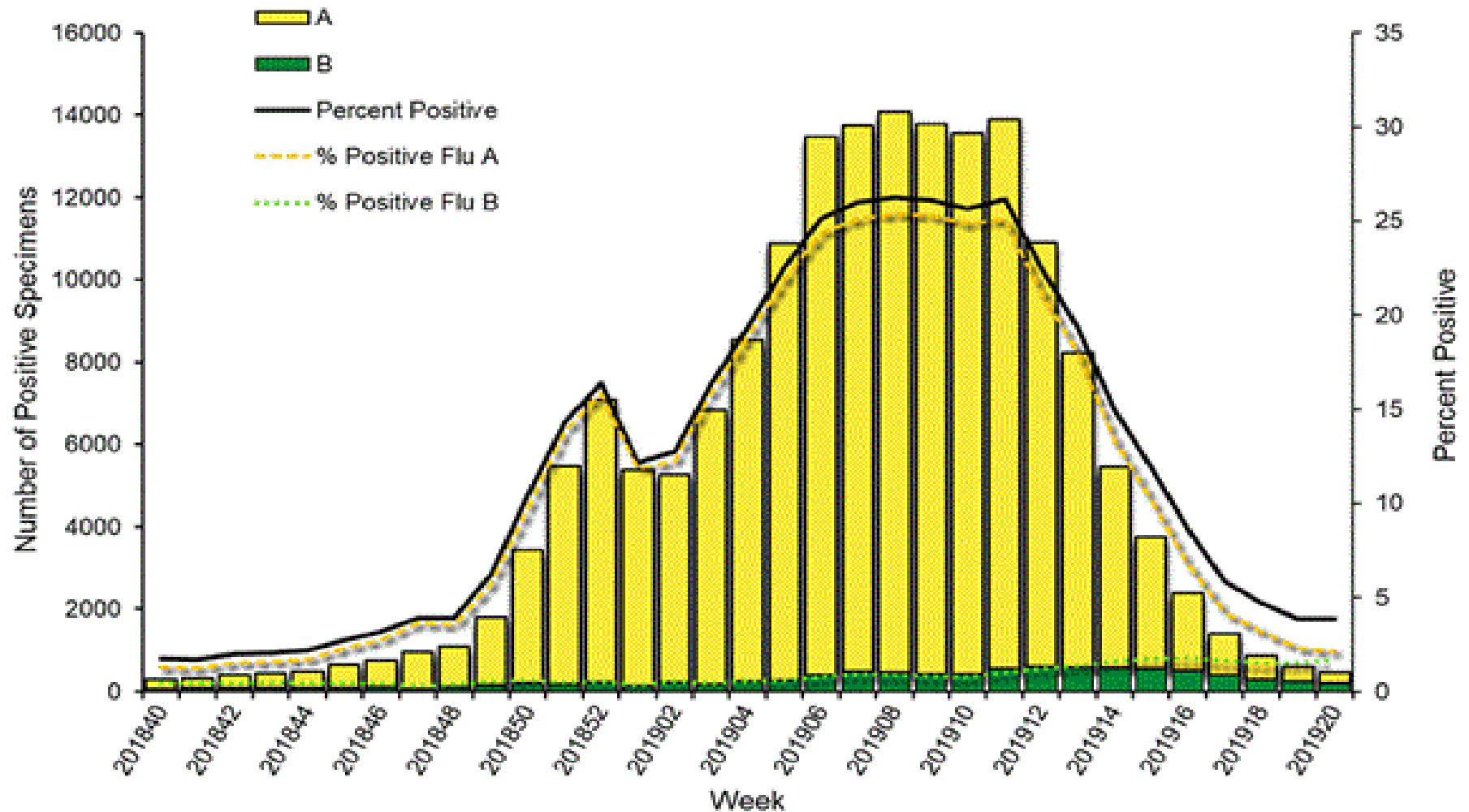
Correlation between RPPNL (FLU PCR) and Sofia (FLUAG) - Accuracy is 94.4%

In last three months, a 2930 samples were tested by both methods most of them negative, 161/2930 samples were positive by EIA when confirmed by PCR. 159 negative EIA samples were tested positive by PCR method. *(ACL correlation data is compiled on samples collected within <48 h). Since positive rate is under-represented and provides correlation on very small fraction of positive samples – interpret clinical sensitivity with caution.*

| 02/02/19 to 05/24/2019 | | | | |
|--|---------------------------------|-------|------|-------|
| FLUAG (Sofia) vs RPPNL (PCR) correlation | | | | |
| | | RPPNL | | |
| | | + | - | Total |
| FluAG | + | 161 | 4 | 165 |
| | - | 159 | 2606 | 2765 |
| | | Total | | 2930 |
| % | | | | |
| 50.3 | Clinical Sensitivity | | | |
| 99.8 | Clinical Specificity | | | |
| 97.6 | Positive Predictive Value (PPV) | | | |
| 94.2 | Negative Predictive Value (NPV) | | | |
| 94.4 | Accuracy | | | |

May 18, 2019 **Positivity rate 3.8%** - Flu A – 55% , Flu B – 45%

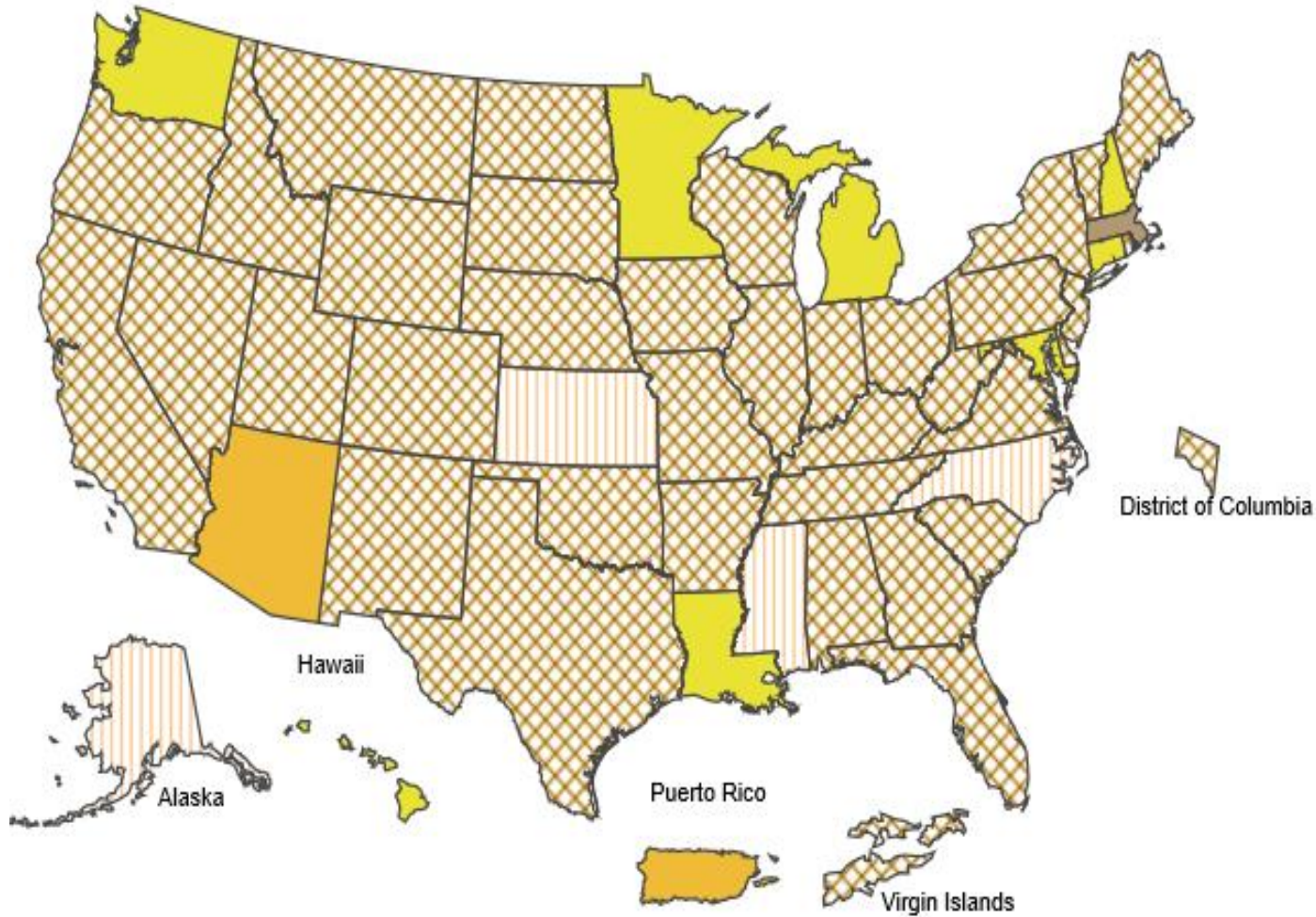
Influenza Positive Tests Reported to CDC by U.S. Clinical Laboratories, National Summary, 2018-2019 Season



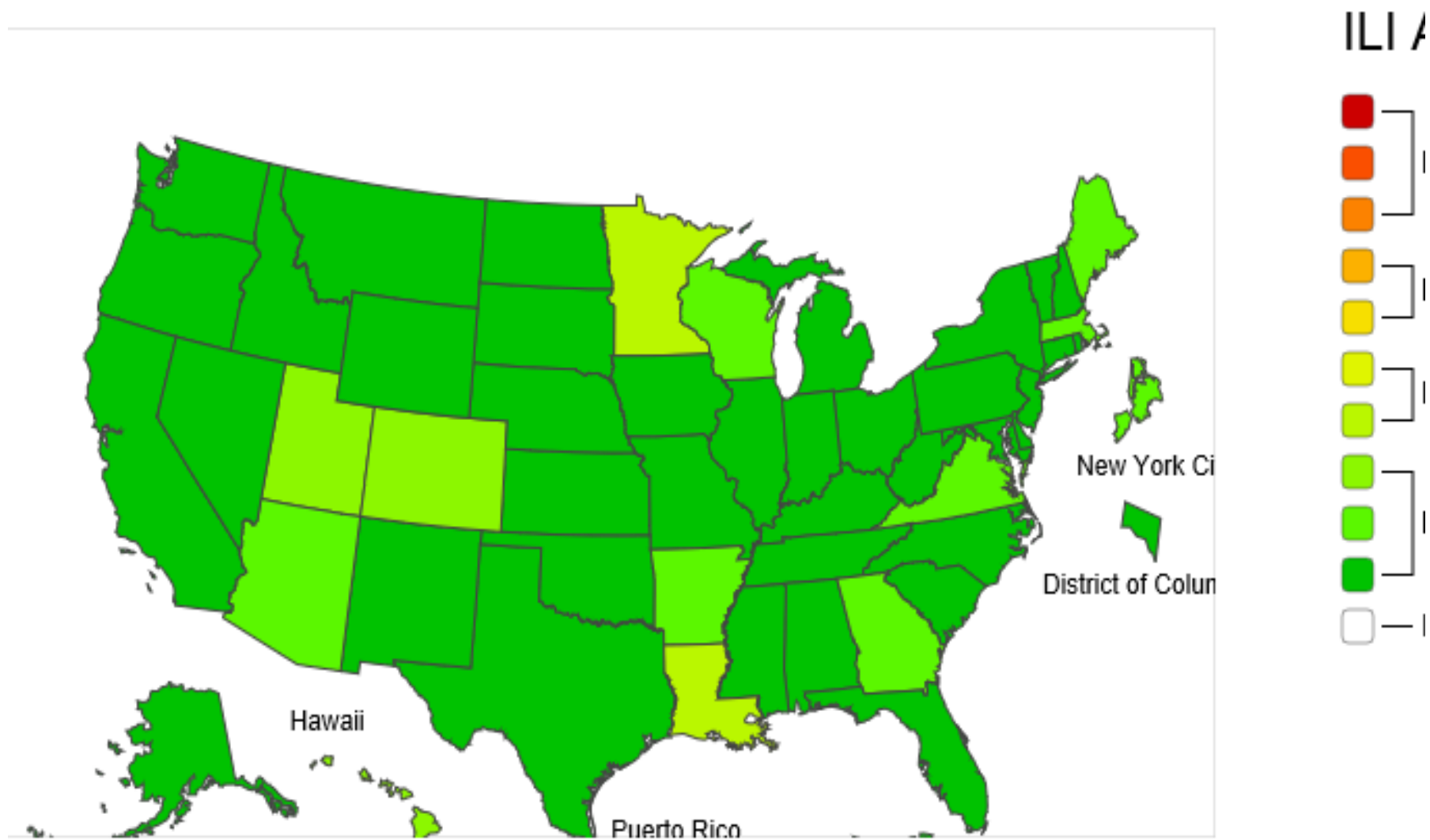
Week Ending May 18, 2019 - Week 20

Influenza Acth

- No Activity
- Sporadic
- Local Activity
- Regional
- Widespread
- No Report



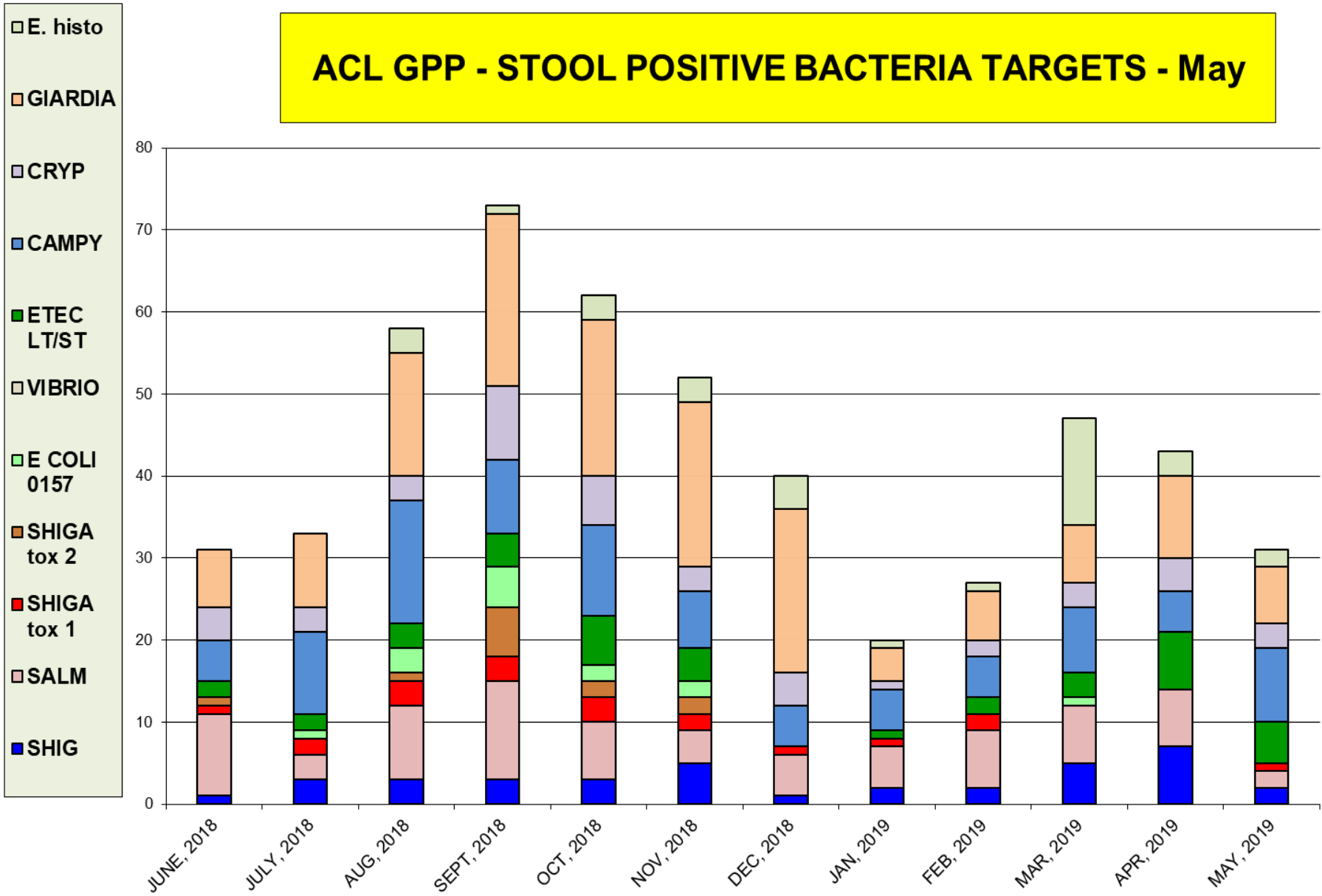
2018-19 Influenza Season Week 20 ending May 18, 2019



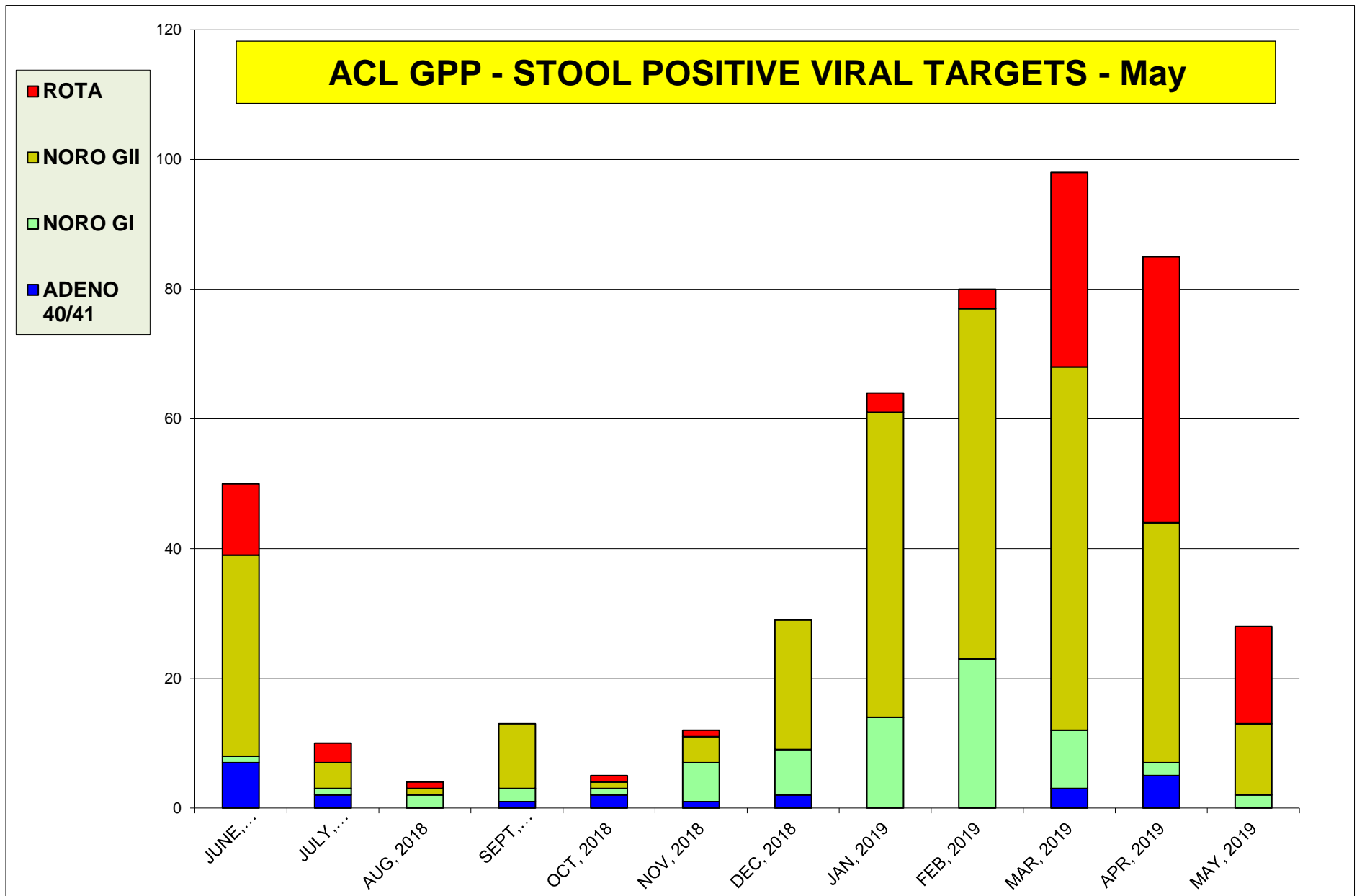
The proportion of outpatient visits to healthcare providers for influenza-like illness to measure the ILI activity level within a state. It does not account for the geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity. ILINet may disproportionately represent certain populations within a state, and therefore may not accurately depict the full picture.

The most prevalent bacterial targets was **Campylobacter**

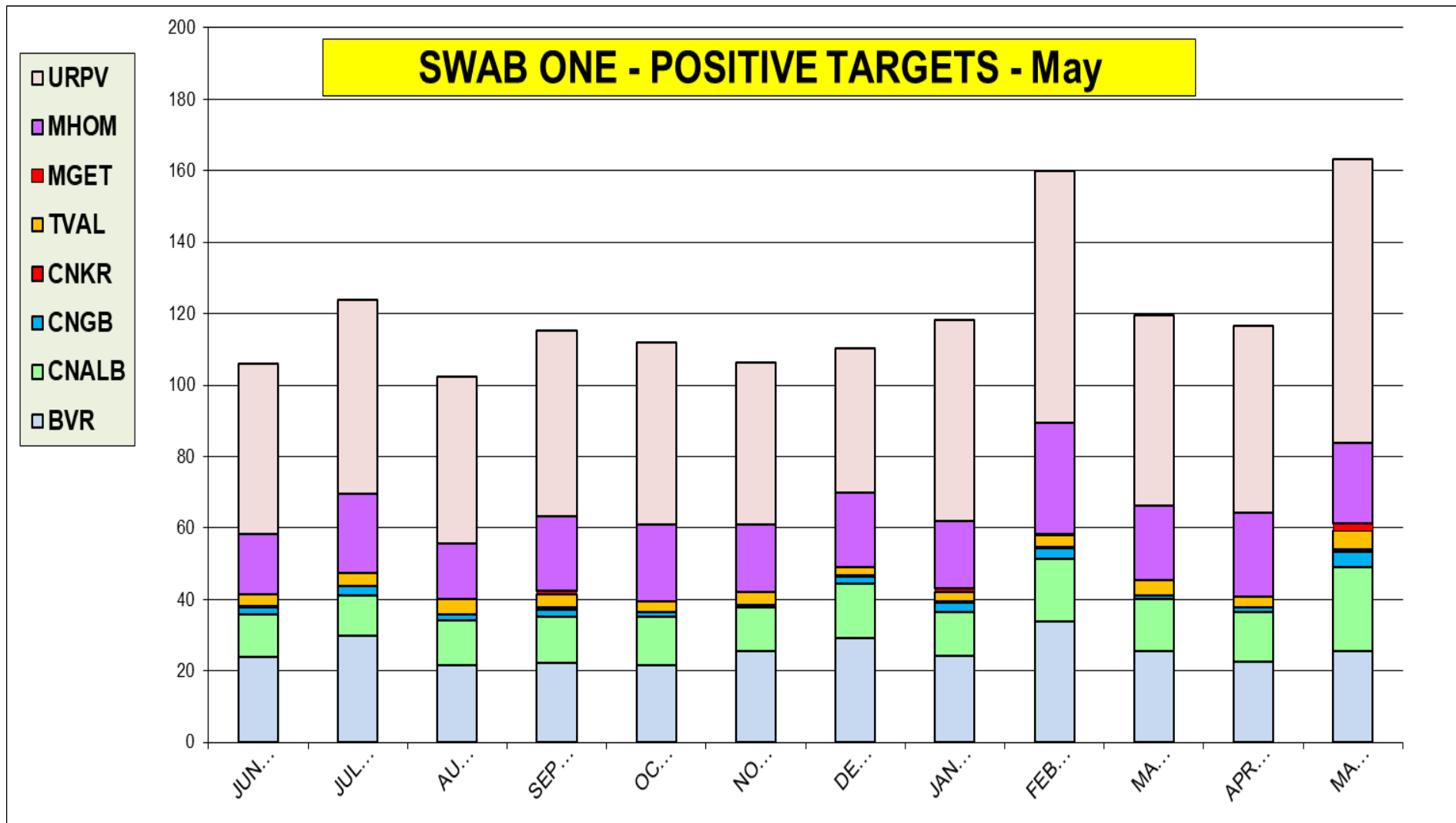
ACL GPP - STOOL POSITIVE BACTERIA TARGETS - May



The most prevalent virus target was **Rotavirus (6.1%) pos. rate**



| BV | C.ALB | C.GLB | C.KUR | T.VAG | M.GEN | M.HOM | U.PAV | Tot. pos. |
|-------------|-------------|------------|------------|------------|------------|-------------|-------------|-------------|
| 4,899 | 4,655 | 4,655 | 4,655 | 4,600 | 2,242 | 2,242 | 2,242 | 4,954 |
| 25.8 | 15.0 | 2.0 | 0.3 | 3.7 | 0.3 | 21.7 | 54.0 | 79.6 |



Neuraminidase Inhibitors Resistance in samples collected – as of May 18, 2019

| Per CDC website | Oseltamivir | | Peramivir | | Zanamivir | |
|-------------------------|--------------------------|------------------------|--------------------------|------------------------|--------------------------|------------------------|
| | Virus Samples tested (n) | Resistant Viruses, (%) | Virus Samples tested (n) | Resistant Viruses, (%) | Virus Samples tested (n) | Resistant Viruses, (%) |
| Influenza A (H1N1)pdm09 | 1198 | 0.3 | 1198 | 0.3 | 1198 | 0 |
| Influenza A (H3N2) | 985 | 0 | 985 | 0 | 985 | 0 |
| Influenza B | 419 | 0 | 419 | 0 | 419 | 0 |

There is 0.1% resistance detected.