

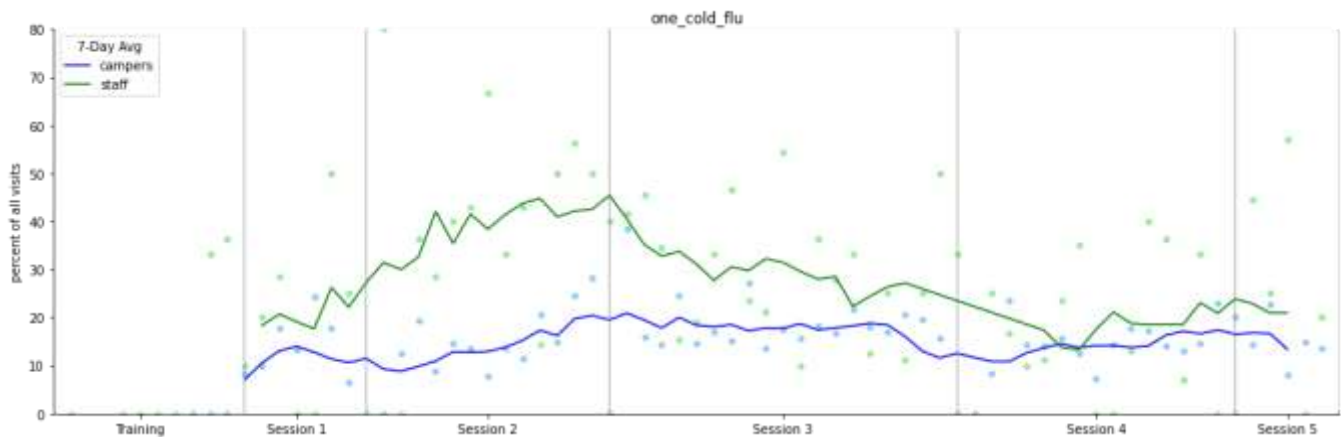
## Cold and Flu Symptoms at Camp: Summary for Decision-Makers

### Introduction

The COVID-19 pandemic has demonstrated the need to better understand health at summer camp. One challenge we already face is common respiratory infections that impact both campers and staff. By studying past health center data, we have uncovered trends and other observations that suggest a few ways we can work to improve the health of our community. This document includes a summary of key observations, recommended actions, and links to further analysis.

### Key Observations

To generate this information, we studied health center logs from 2013 to 2019. The graph below shows the proportion of logs that report cold or flu symptoms for each day of the camp season.



The most important observation is the remarkable difference between staff and campers. While campers tend to show symptoms at a consistent rate (between 15-20 percent), staff visits increase in the first half of the summer to a clear peak (around 50 percent). At the peak, half of all staff visits to the health center report cold and flu symptoms. This trend suggests that **infections appear early and grow to impose a significant burden on staff.** Beyond group differences, it is evident that cold and flu symptoms are present in every session across the summer.

Two instances of missing data must be addressed. Visible in the graph is a lack of data from Staff Training. Because medical staff are most often not present during this time, cold and flu symptoms are rarely monitored. Finally, one year (2016) vastly underreported all health center visits, resulting in a full summer of nearly absent data.

### Recommendations

- Hire medical staff during the staff training week and screen staff for symptoms
- Ensure all medical staff are trained in standards for record-keeping
- Inspect records weekly and ensure data is being recorded properly
- In the first weeks of camp, focus on monitoring, prevention, and early interventions
- As the summer moves on, maintain high standards for education, hygiene, and monitoring
- Provide specific advice on reducing spread to anyone who shows symptoms. This should happen not only at the onset of symptoms, but also at the end of each session and the end of summer, to help keep other staff healthy and campers' families healthy.

### Addendum for COVID-19

- Develop contact-free screening and monitoring procedures, like temperature checks and COVID tests, that will produce more monitoring data than would be needed in a normal year.
- Prepare early action plans that treat symptoms with the seriousness and timeliness of an urgent crisis.

## Recommendation Matrix

Session	Avg Symptomatic Visits		Observation	Recommendation
Staff Training	Staff	Campers	Not much data from staff training. In years with data, symptoms are present.	We need monitoring to help make early interventions, as well as assistance in training sessions. Hire medical staff for training.
Session 1	39 %	16 %	Proportion of visits showing symptoms is lower than other sessions, symptoms are but always present.	Monitoring, prevention, and assertive early intervention are key throughout. This session, expect to implement a handful of individual-level interventions.
Session 2	43 %	20 %	Can show a high proportion of symptoms for staff, but the intensity varies. Symptoms are typically elevated for campers too.	Create capacity to monitor data in real time, both from checking in with medical staff and tracking reports. Expect several or many infections. Plan for individual- and group-level interventions. Consider staff sick day policy.
Session 3	31 %	19 %	Symptoms persist, even in decline. The proportion of visits is lower at the end than the beginning of the session, but symptoms remain high for the first ten days.	Expand strategy to resiliency and flexibility. Promote strong health practices, like encouraging sleep and giving breaks. Have replacement staff ready. Ensure thorough cleaning continues. Continue to monitor and look for prevention to pay dividends.
Session 4	22 %	15 %	Rates are generally at the lowest. However, in 2018, Session 4 saw the highest rates for staff of the entire summer.	Do not assume staff are immune. Monitor, reemphasize prevention, screen campers, be ready with interventions. This session often includes new medical staff. Carefully train new medical staff and inspect records for completion.
Session 5	26 %	16 %	Session 5 is not safe from cold and flu symptoms. While only a handful of total visits have been reported for staff, symptoms do tend to show up.	Give recommendations for folks with symptoms to continue best practices after camp. Focus on folks who may be transported to airport and could expose their driver or other passengers.

## Documentation

*How did you process and prepare the data used in this study?*

Read: [How We Processed Health Records](#)

*How did you come to these conclusions?*

Read: [Deep Dive into Data Exploration](#)