

*breaking the chain of infection for a safer workplace*

# **Breakthrough in the Contagiousness Paradox: The Myth of 98.6F and 100.4F**

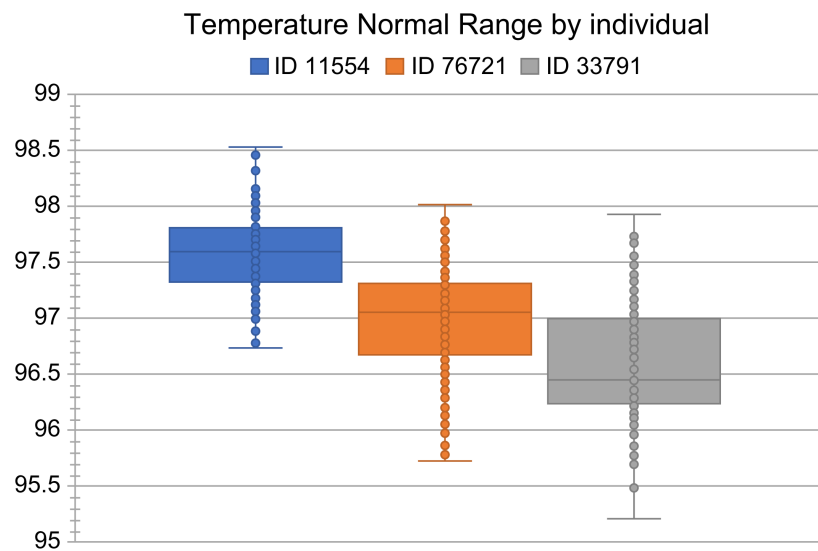
*How do we know when an employee is contagious and what methodology is most sure?*

*A new wellness protocol is solely for reducing the spread of disease in the workplace and is neither a diagnosis of wellness nor sickness.*

## **Session Objectives:**

1. Explain how presenteeism drives workplace outbreaks.
2. Explore the myth that 98.6F is the normal temperature for humans.
3. Describe the consequences of using a fixed temperature of 100.4F to identify contagion.
4. Explain the role of fever in the body's defense against infection.

## Normal Temperature Ranges of 3 Employees



- The normal range is within the colored boxes
- Extended range is above and below the box
- Outlier (likely contagious) is above their extended range.

## The Paradox

Four employees have a 98.6°F / 37°C - but who is sick?

**Two** feel WELL

**One** is COUGHING

**One** is SNEEZING

# An Example of a 98.6F Paradox

FEELS:

WELL  
98.6F

WELL  
98.6F

COUGHING  
98.6F

SNEEZING  
98.6F



# RESULTS (of the 98.6F Paradox)



**WELL**

**+ FLU**

**+ COVID-19**

**ALLERGIES**



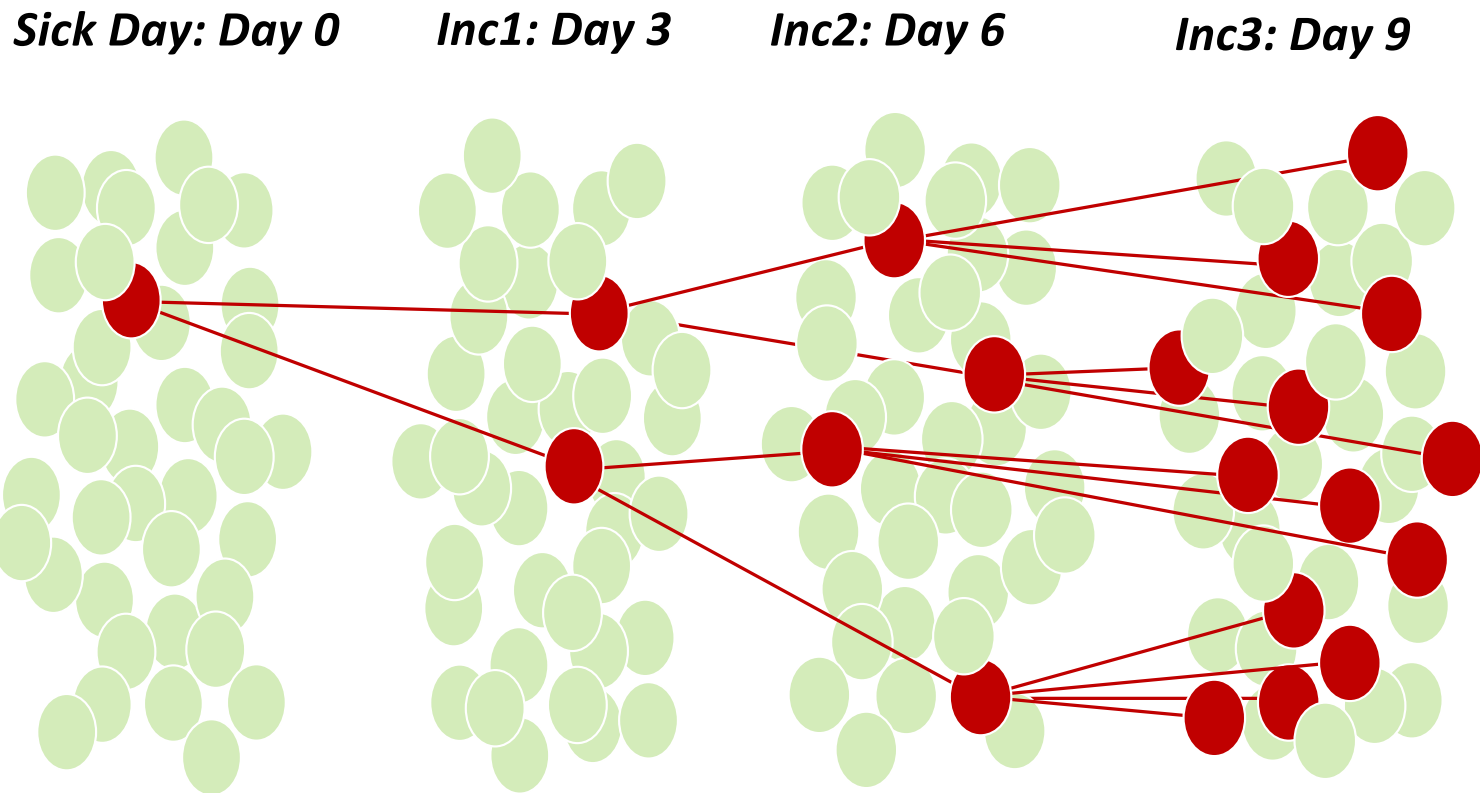
So what who cares?

# Presenteeism v. Absenteeism

- Presenteeism refers to 'working when sick,' often with a contagious illness.
- The Harvard Business Review estimates presenteeism to cost the U.S. economy **\$150 billion annually.** (*January 21, 2022*).
- Presenteeism drives all workplace outbreaks.
- Staff are often asymptomatic, while some are cavalier about presenting to work sick.



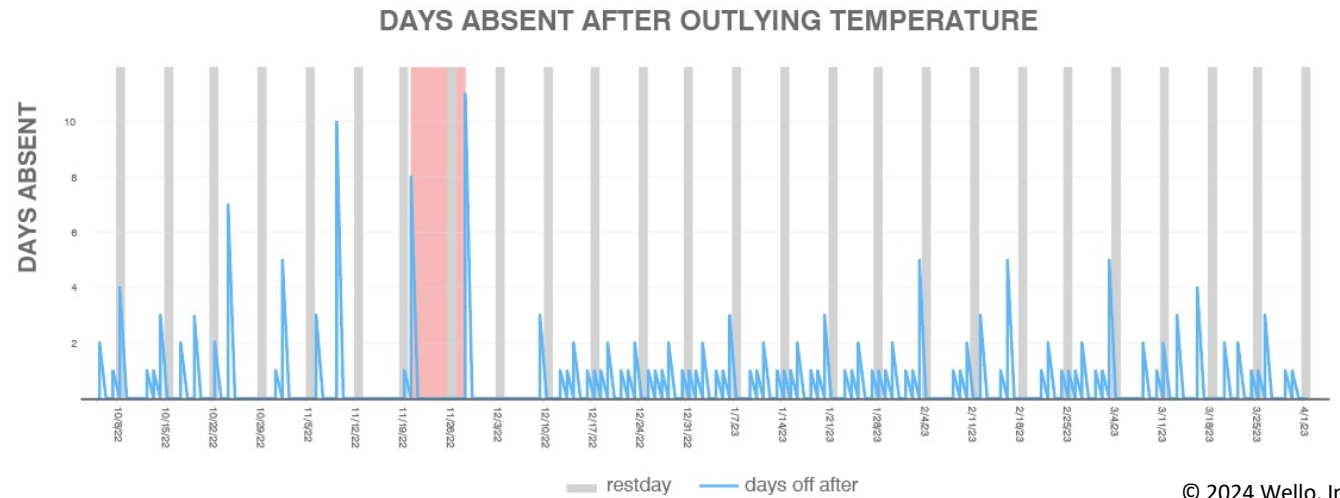
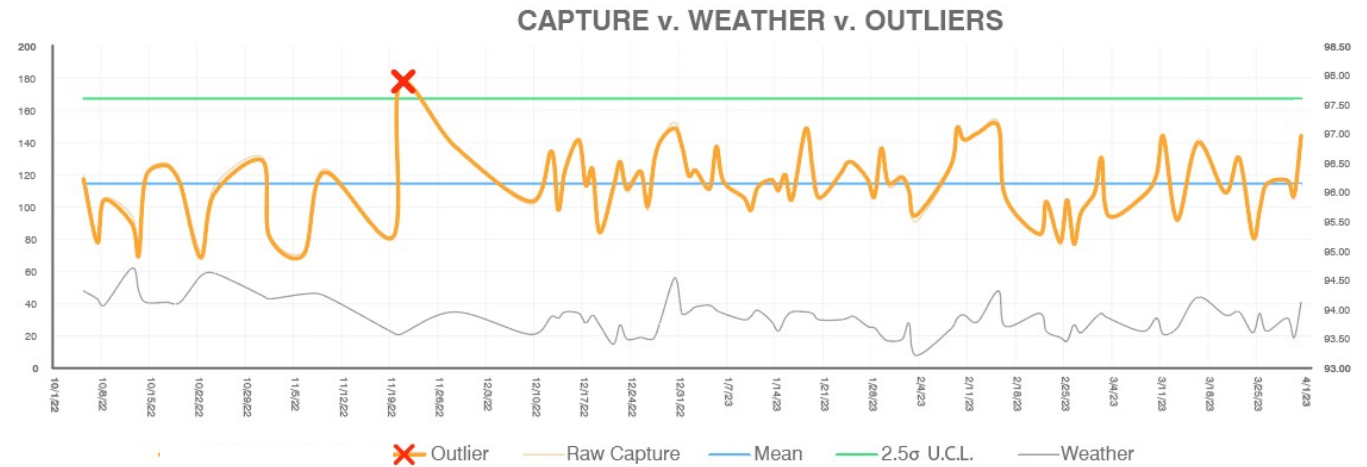
# 1 sick employee, 9 days, 19 unscheduled absences illustration




Simple spread example with just a 1:2:2:3 illustration – 1 makes 19 absences

# The Cost of Infection in Days Absent

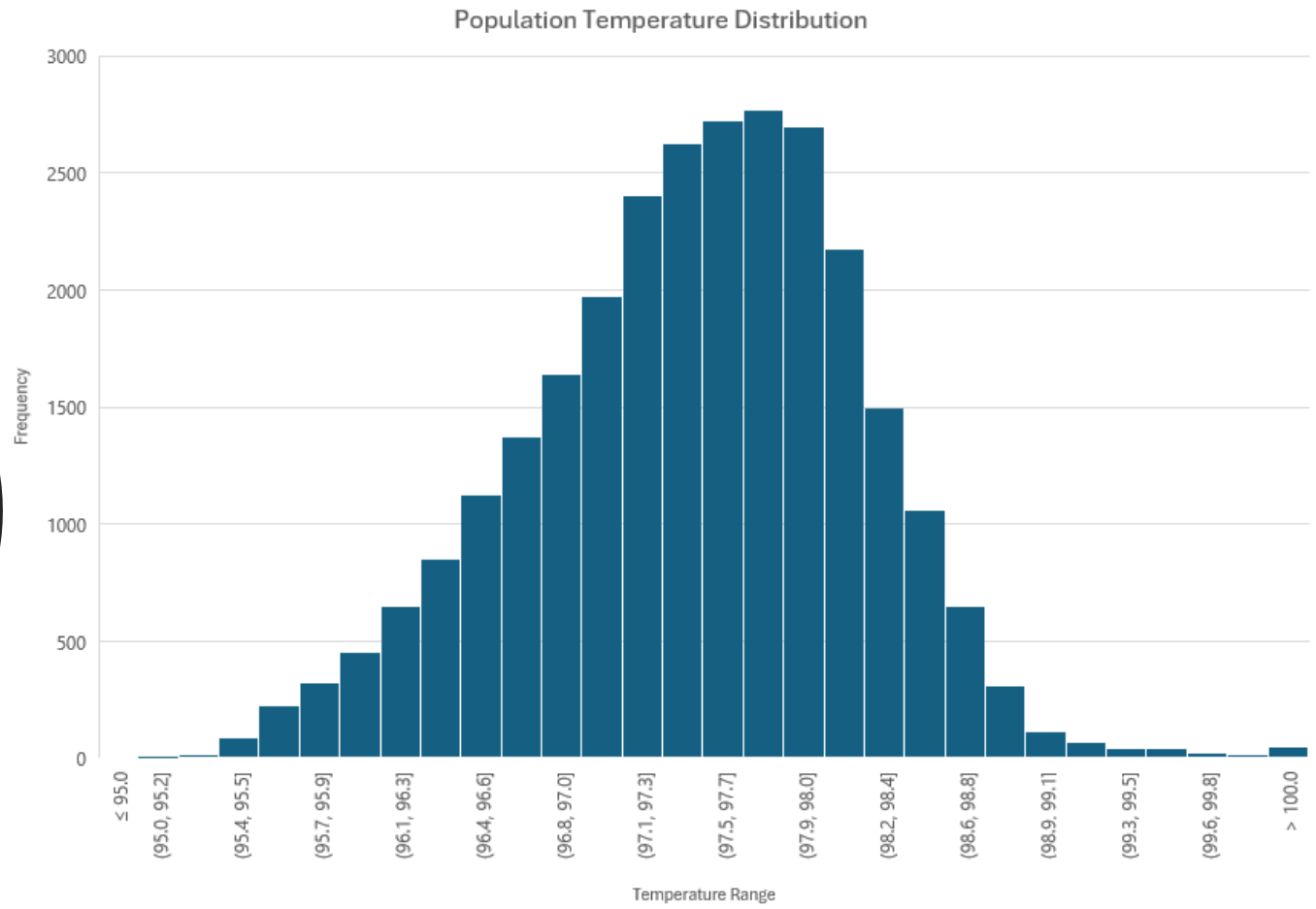
An 8-day absence followed the New Protocol outlier at 97.9F.

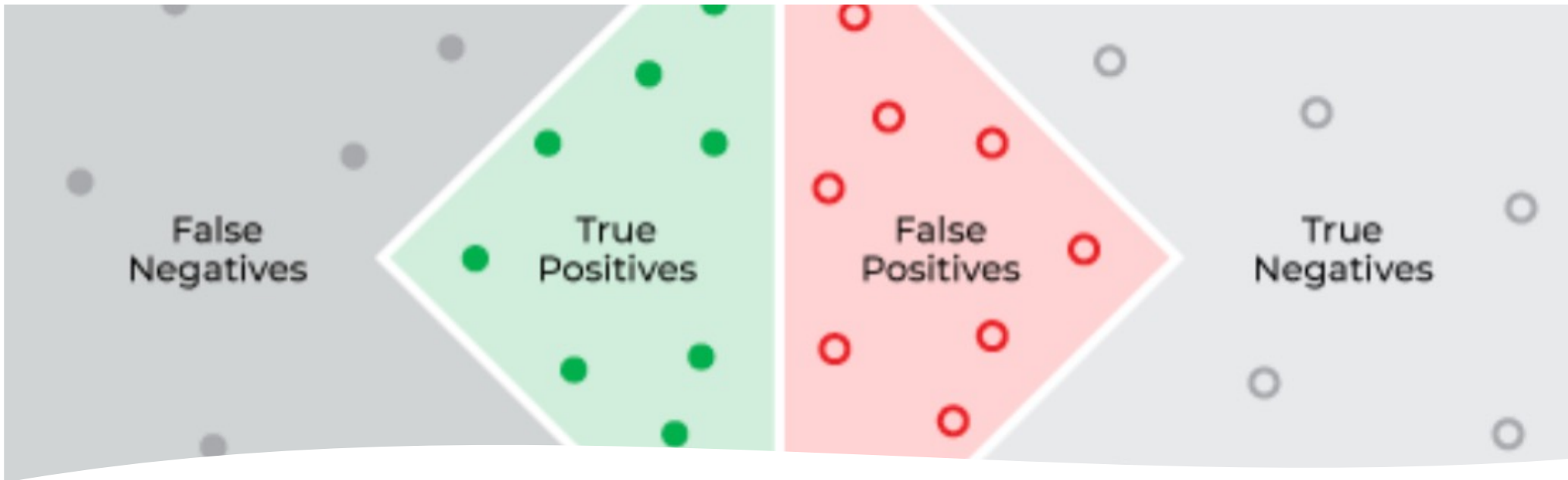




How have we gotten  
surveillance wrong?

The Myth  
of 98.6° &  
100.4°





## False Positives and False Negatives

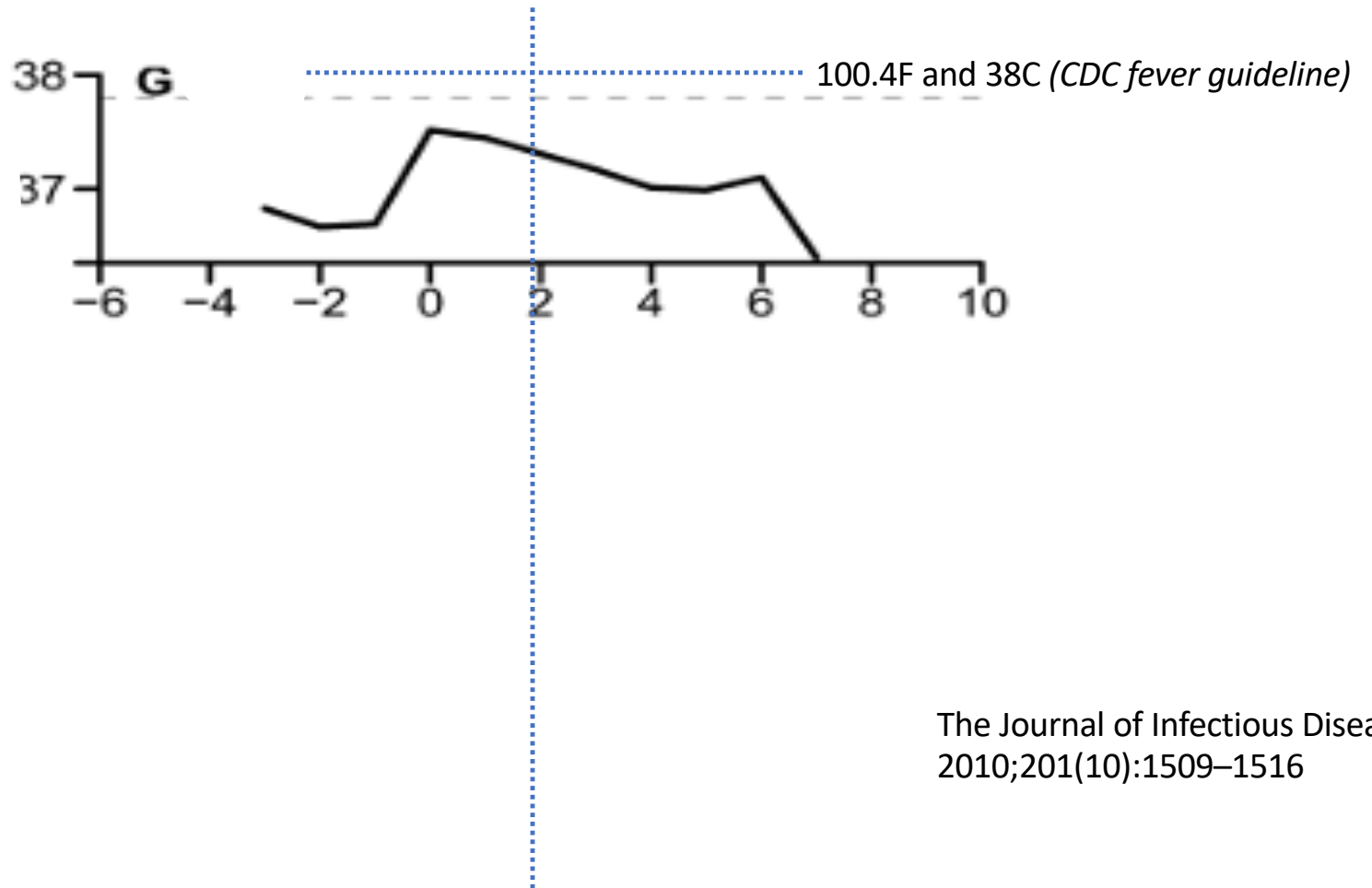
- False Positive Implications
- The heightened accuracy of ANTE-based detection significantly reduced the rate of FN
- Asymptomatic spreaders are detectable across the human temperature range; reduce the likelihood of FN by 90% in <10 seconds



How does it work?

# HOW Temperature & Spread is in Lockstep

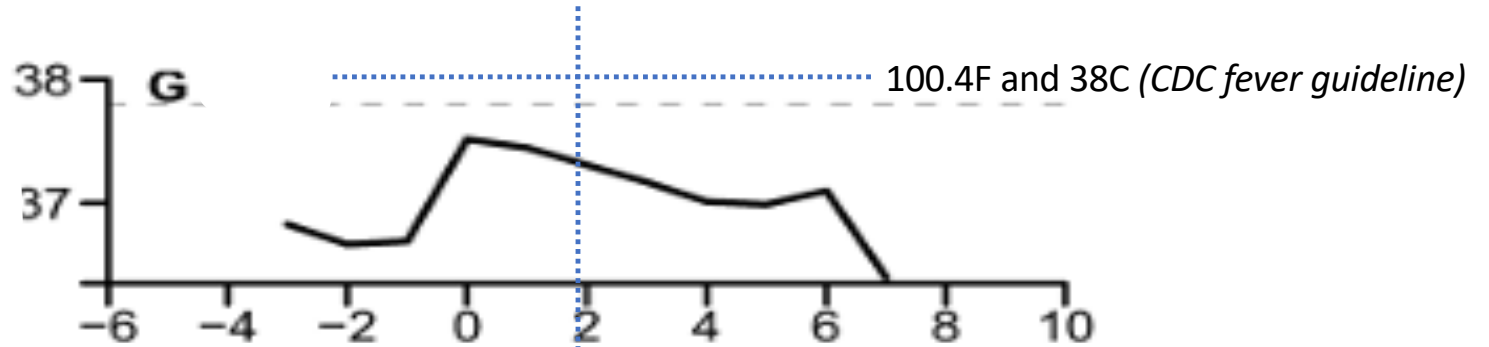
**Body Temperature**  
(tympanic)



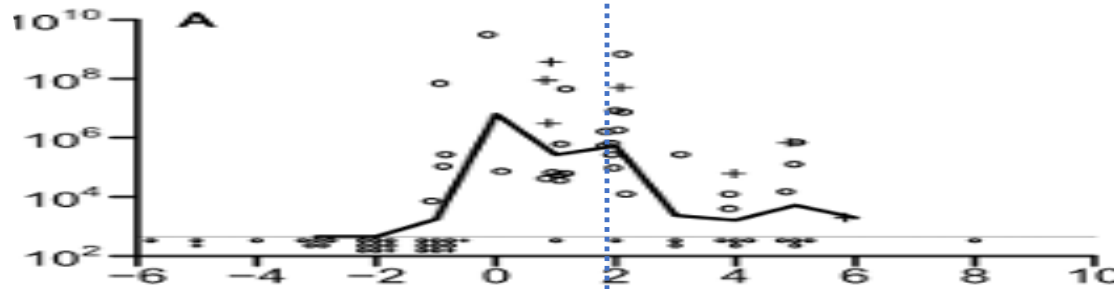
The Journal of Infectious Diseases  
2010;201(10):1509–1516

# HOW Temperature & Spread is in Lockstep

Body Temperature  
(tympanic)



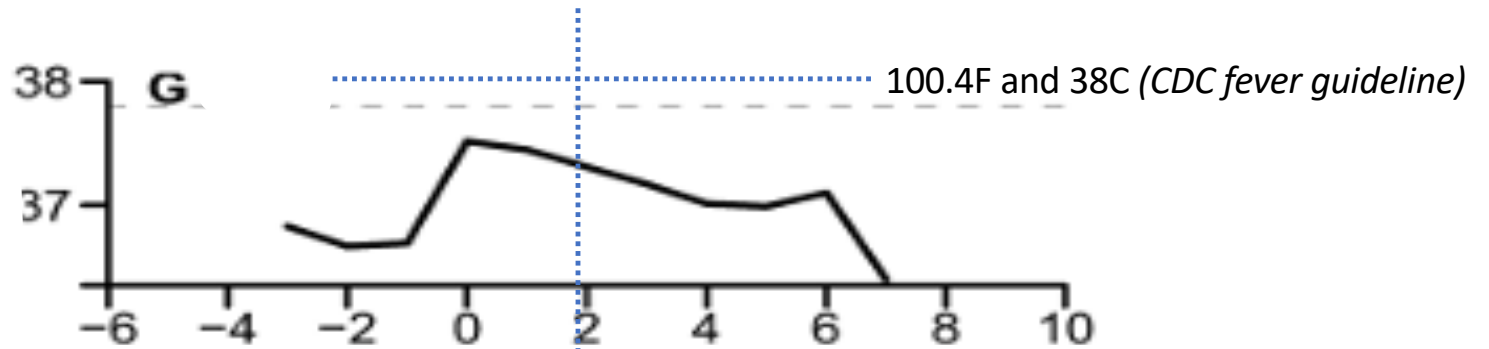
Amount of Virus  
in Specimens



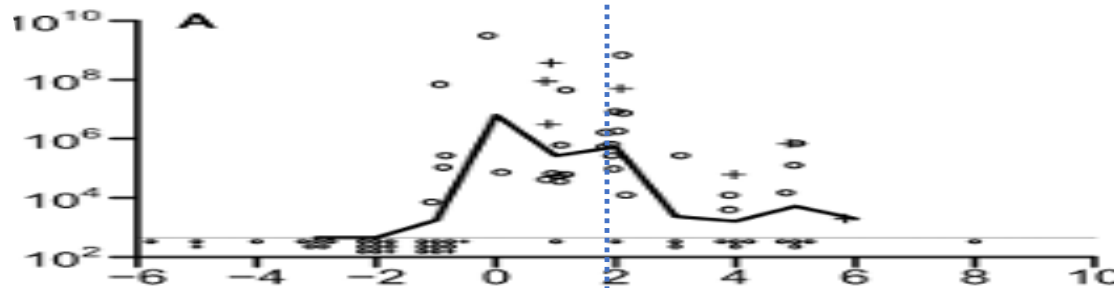
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# HOW Temperature & Spread is in Lockstep

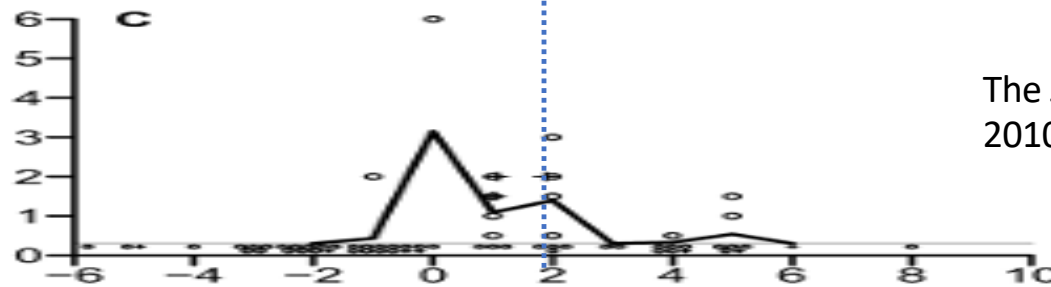
**Body Temperature**  
(tympanic)



**Amount of Virus in Specimens**



**Amount of Virus Shed**  
(Log<sub>10</sub> TCID)



The Journal of Infectious Diseases  
2010;201(10):1509–1516

Body temperature  
IS the very first  
symptom of  
bodily infection

- Increasing body temperature is the body's strongest defense against infection



Body temperature  
IS the very first  
symptom of  
bodily infection

- Fever is mistakenly  
thought to be ... .



Body temperature  
IS the very first  
symptom of  
bodily infection

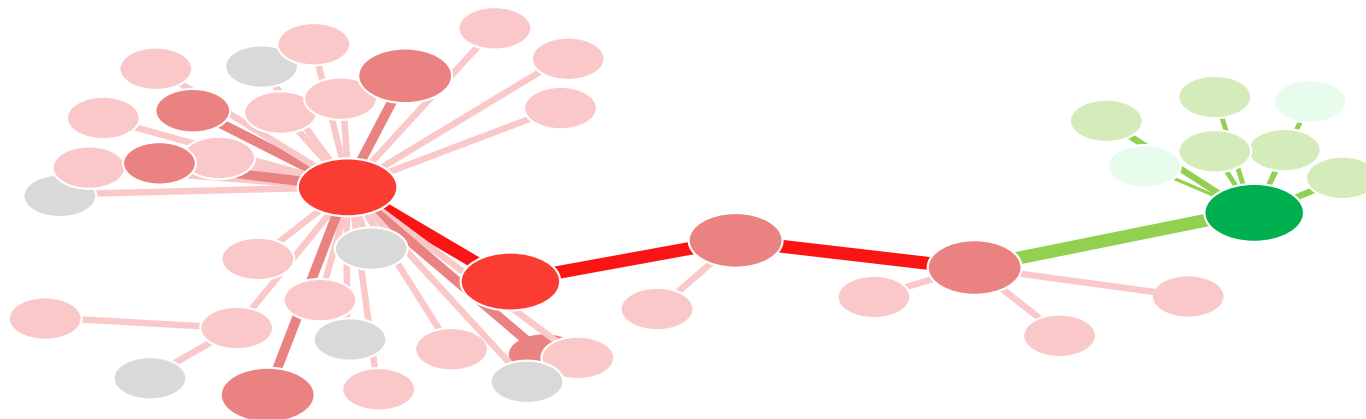
- More than 90% of sick employees are **WELL UNDER** the 100.4F clinical fixed definitions of fever.





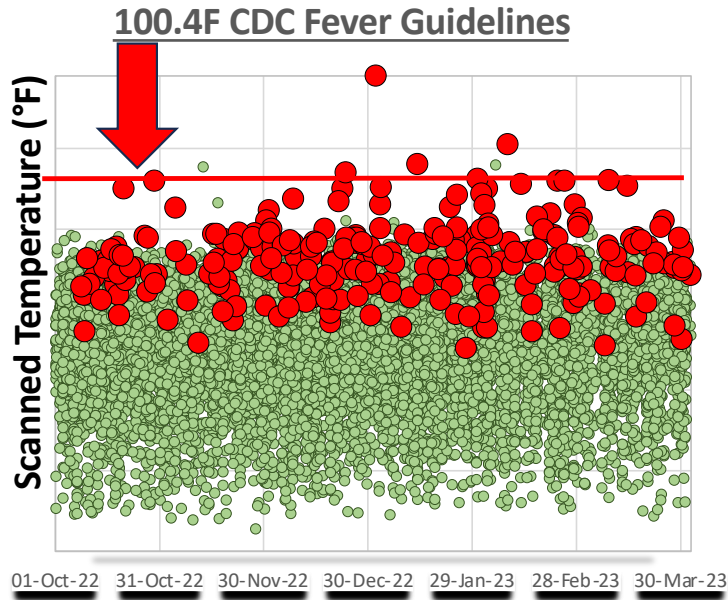
What did the case  
study reveal?

- **6 months of data w/ only 12 scans above 100.4**
- **600 Health Care Workers**
- **150/600 Senior Residence Staff**
- **All were PCR checked when feeling symptoms**
- **All scanning temperatures upon entry**
- **THE AI SHOWED A TINY BUMP:**

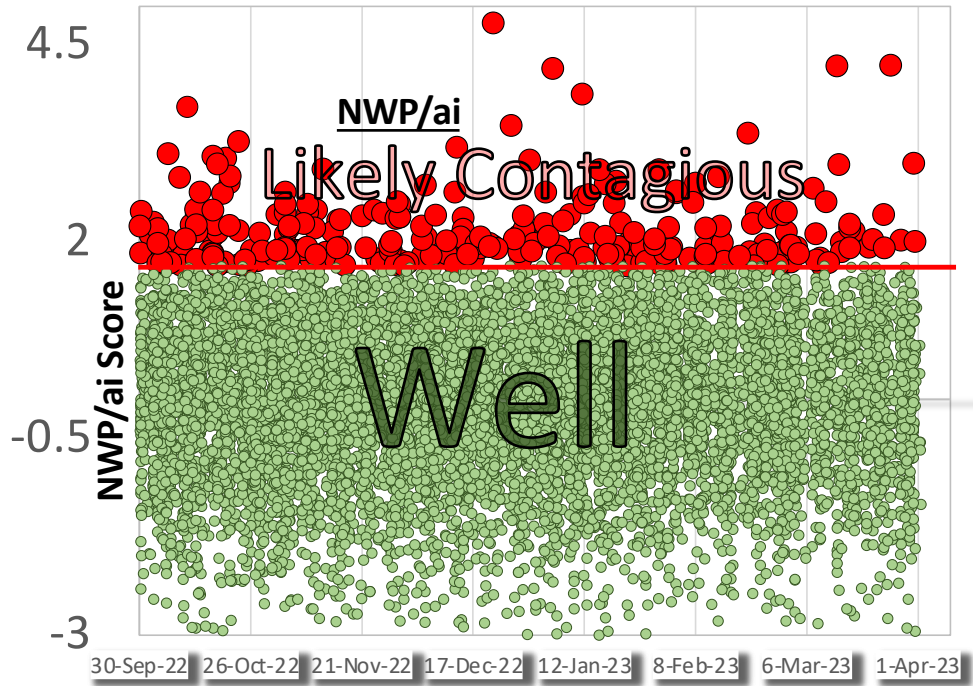


FROM BODY TEMP >>> NWP/AI

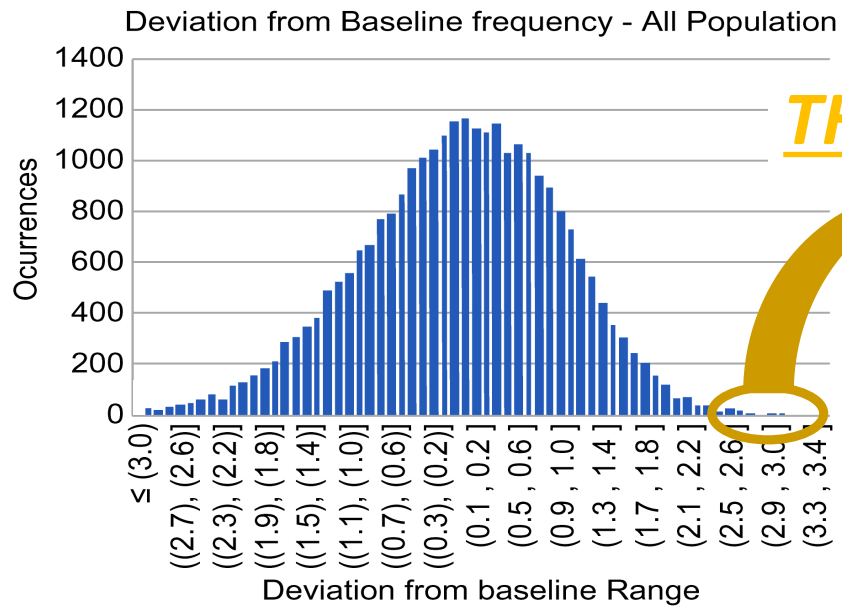
The Well **Mixed** With the Contagious



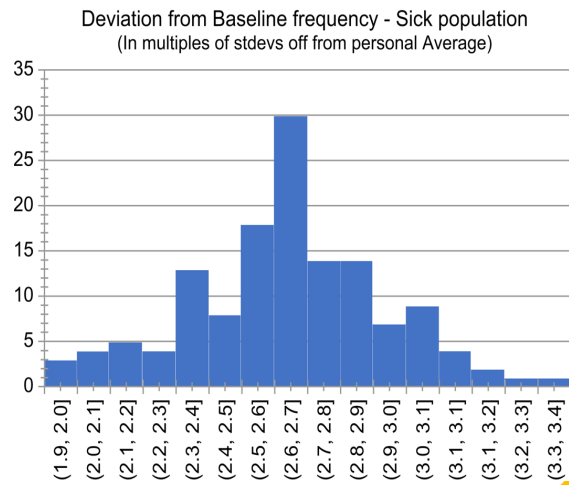
Well **Separated** From The Contagious



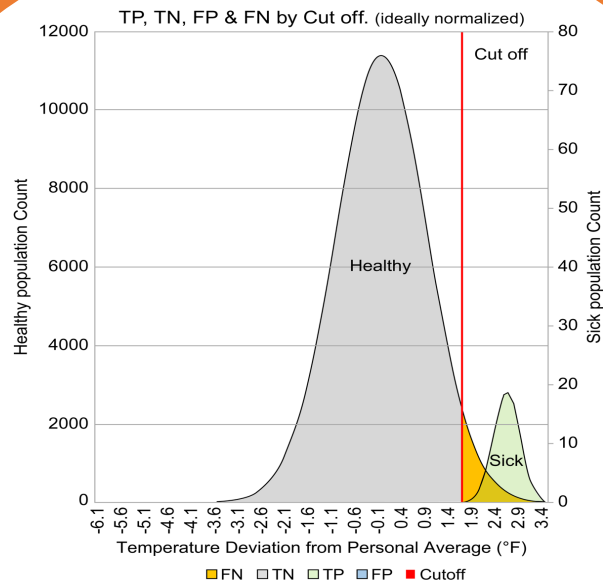
WAIT FOR IT ... WAIT FOR IT ... THE BUMP ...



**THE BUMP**



Here is how and what the NWP/ai discovered for outlier index values.

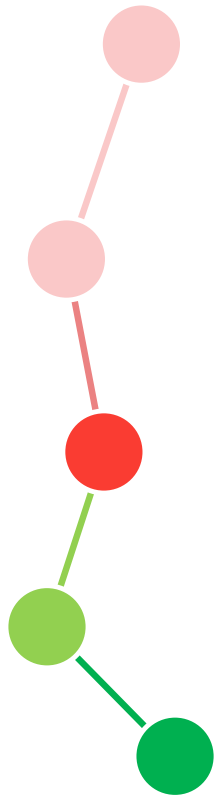


TPs		133
TNs		27082
FPs		762
FNs		0
PPV	$TP / (TP + FP)$	14.9%
NPV	$TN / (TN + FN)$	100.0%
Sensitivity	$TP / (TP + FN)$	100.0%
Specificity	$TN / (TN + FP)$	97.3%

“In God we trust. All others must bring data.” -IBM

[https://www.ibm.com/blogs/nordic-  
msp](https://www.ibm.com/blogs/nordic-msp)

## NWP/ai Isolation



**Once a spreader is detected, isolation may be simple:**

- 1. an N95 for the day available at the front door and/or*
- 2. a remotely proctored self-test at the front door.*

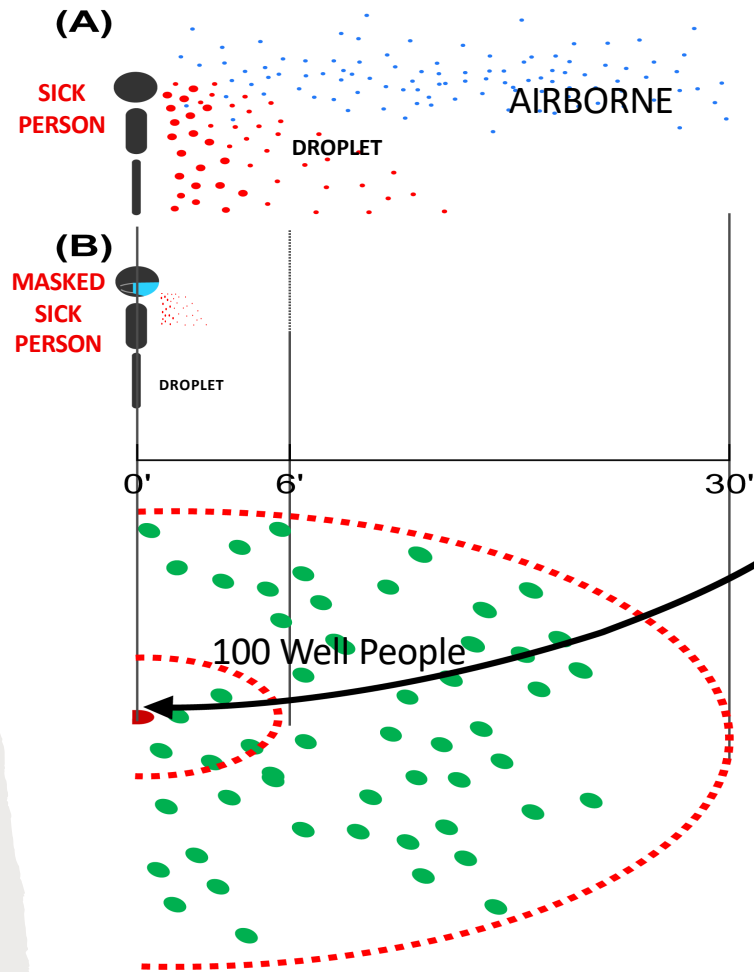
MOST *NON-DISRUPTIVE* ISOLATION METHOD:

A clean, often misunderstood, and non-disruptive

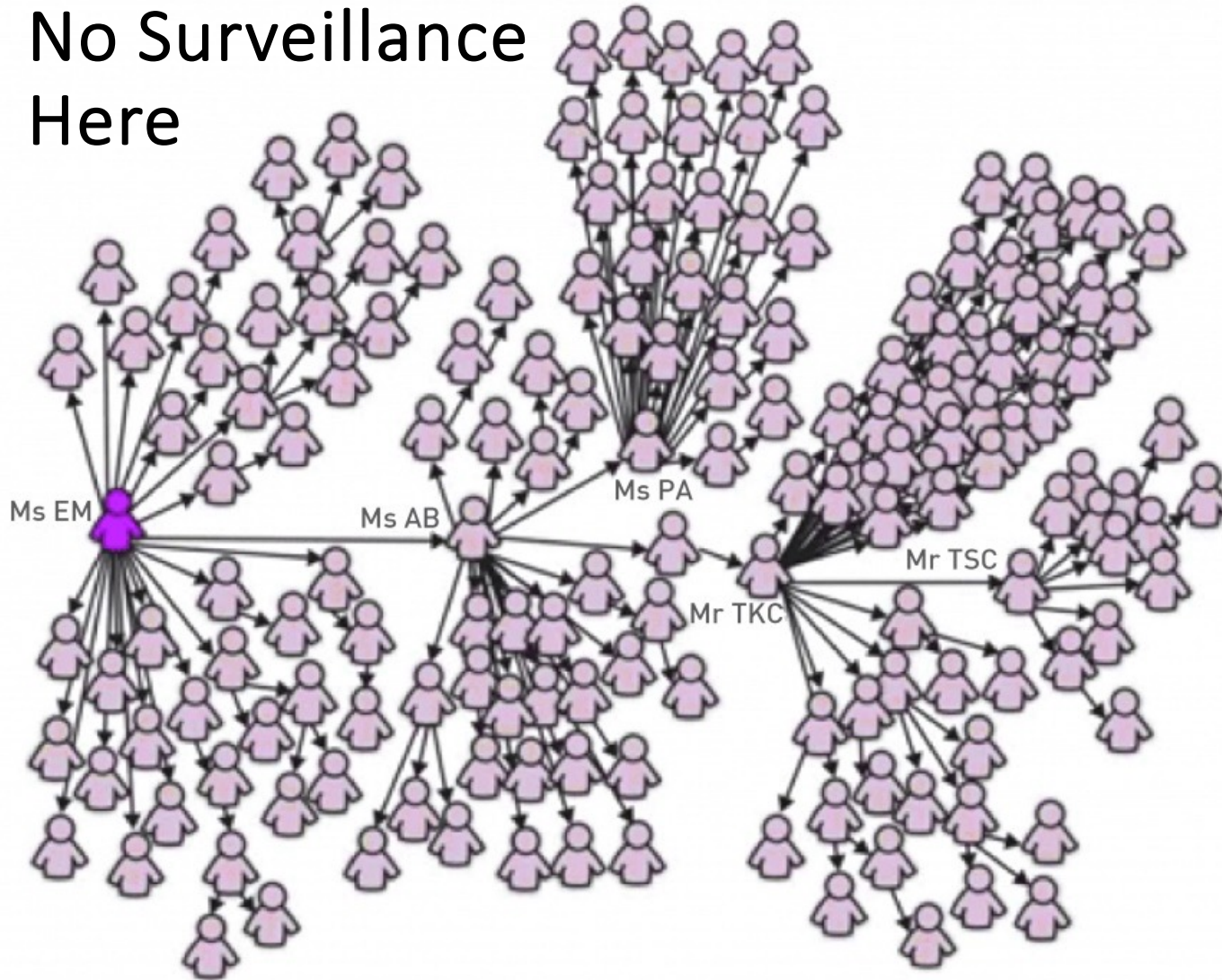
⋮

95% reduction in disease burden in the workplace:

The N95



No Surveillance  
Here



**This 2003 Hospital  
Outbreak started  
with:**

**Ms EM then  
Ms AB then  
Ms PA then  
Mr TKc then  
Mr TSC then**

**150 sickened, 50  
died, mostly  
staff and guests**

# NEJM shows facilities with full testing improve resident outcomes in senior residences *in both hospitalization and death.*

- NEJM, March 2023, published an extensive study **concluding that high-test facilities testing all employees often, reduce infection and death in residents and therefore in patients.**

*Greater surveillance testing of staff members at skilled nursing facilities was associated with clinically meaningful reductions in cases and deaths among patients and residents.”*

*New England Journal of Medicine*

*March 26 2023*

ORIGINAL ARTICLE

## Covid-19 Surveillance Testing and Resident Outcomes in Nursing Homes

Brian E. McGarry, P.T., Ph.D., Ashvin D. Gandhi, Ph.D., and Michael L. Barnett, M.D.

### ABSTRACT

#### BACKGROUND

Despite widespread adoption of surveillance testing for coronavirus disease 2019 (Covid-19) among staff members in skilled nursing facilities, evidence is limited regarding its relationship with outcomes among facility residents.

#### METHODS

Using data obtained from 2020 to 2022, we performed a retrospective cohort study of testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) among staff members in 13,424 skilled nursing facilities during three pandemic periods: before vaccine approval, before the B.1.1.529 (omicron) variant wave, and during the omicron wave. We assessed staff testing volumes during weeks without Covid-19 cases relative to other skilled nursing facilities in the same county, along with Covid-19 cases and deaths among residents during potential outbreaks (defined as the occurrence of a case after 2 weeks with no cases). We reported adjusted differences in outcomes between high-testing facilities (90th percentile of test volume) and low-testing facilities (10th percentile). The two primary outcomes were the weekly cumulative number of Covid-19 cases and related deaths among residents during potential outbreaks.

#### RESULTS

During the overall study period, 519.7 cases of Covid-19 per 100 potential outbreaks were reported among residents of high-testing facilities as compared with 591.2 cases among residents of low-testing facilities (adjusted difference, -71.5; 95% confidence interval [CI], -91.3 to -51.6). During the same period, 42.7 deaths per 100 potential outbreaks occurred in high-testing facilities as compared with 49.8 deaths in low-testing facilities (adjusted difference, -7.1; 95% CI, -11.0 to -3.2). Before vaccine availability, high- and low-testing facilities had 759.9 cases and 1064.2 cases, respectively, per 100 potential outbreaks (adjusted difference, -300.3; 95% CI, -377.1 to -223.5), along with 125.2 and 166.8 deaths (adjusted difference, -41.6; 95% CI, -57.8 to -25.5). Before the omicron wave, the numbers of cases and deaths were similar in high- and low-testing facilities; during the omicron wave, high-testing facilities had fewer cases among residents, but deaths were similar in the two groups.

#### CONCLUSIONS

Greater surveillance testing of staff members at skilled nursing facilities was associated with clinically meaningful reductions in Covid-19 cases and deaths among residents, particularly before vaccine availability.

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## Expect using NWP/ai:

- Reduce unscheduled absenteeism
- ~1 per 100 employees need N95s
- Employee privacy assured
- A non-disruptive isolation method

SPREAD...  
JUST THE  
NEWS

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