Overview

1. Rightsizing
   a. Introduction
   b. History

2. Objectives
   a. Novel Virus Detection
   b. Vaccine Selection
   c. Antiviral Resistance
   d. Situational Awareness

3. Implementation
   a. Testing Thresholds
   b. Lab Sample Detection
   c. Seasonal Awareness

4. Collaboration
   a. Submitter networks
   b. Public Health Partners

5. Review
   a. Rightsizing
   b. Texas involvement
   c. Goals

Rightsizing

What is Rightsizing

- Collaboration between CDC and APHL (Association of Public Health Laboratories)

- Project formed from the questions:
  - How much influenza surveillance?
  - How much influenza testing?
  - Are we getting an accurate picture of circulating influenza?

- Goal:
  - Improve virologic surveillance and define the rationale, vital capabilities and optimal sample sizes ("Right Size")

Why is Rightsizing Important

- Standardizes virologic surveillance practices

- Aids in defining public health surveillance priorities

- Increases understanding and support from leaders and the public

- Establishes common language between epidemiologists and laboratorians

- Allows Epi and Lab staff to establish effective sample sizes for different surveillance objectives

What Are The Objectives

1. Novel Influenza Virus Detection
   - Detect at a low enough threshold to implement effective intervention and control measures

2. Vaccine Virus Selection
   - Monitor antigenic and genetic changes in circulating virus to inform vaccine virus selection

3. Antiviral Resistance
   - Detect at a low enough threshold to implement effective intervention and control measures

4. Situational Awareness for Seasonal Influenza
   - Determine beginning and end of influenza season and monitor prevalence and spread of influenza viruses throughout the year
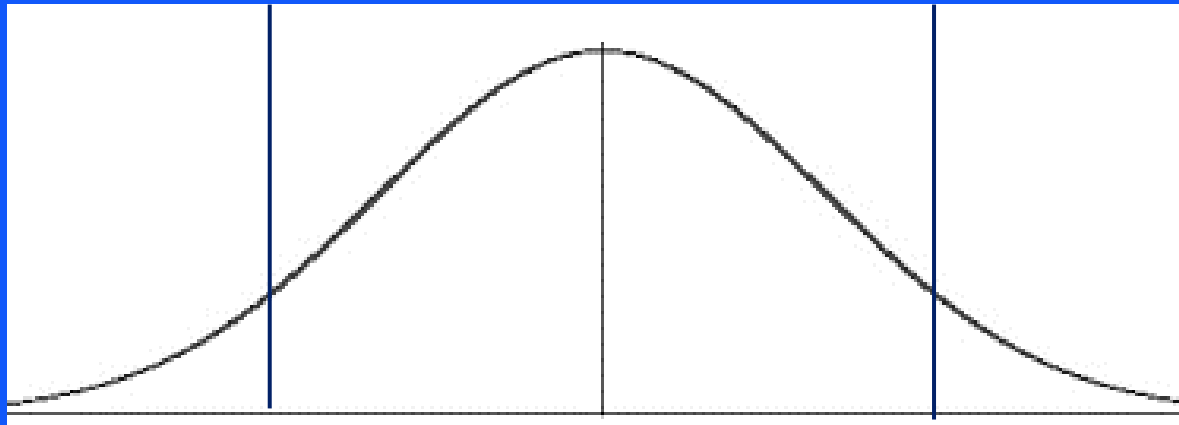
Right Size Thresholds

- Levels at which surveillance systems need to be sized to detect events of concern and provide timely appropriate response

- Determined during peak, shoulder, and summer/offseason

- National and State Level Thresholds
  - Determined by testing numbers per week

Right Size Thresholds

- National Novel Detection Threshold
  - 95% confidence to detect 1 or more novel virus among <u>all influenza positives</u>
  - 1/200 approximates level at which H1N1(2009) was first detected in April of 2009
  - 1/700 is an extension of prevalence based on testing during peak season

	Threshold	Minimum # positives
Peak	1/700	2095
Low	1/200	598
Summer	1/4	11

Right Size Thresholds

Threshold achieved at a 95% confidence interval

Right Size Thresholds

- State Novel Detection Threshold
  - 95% confidence to detect 1 or more novel virus among <u>all influenza positives</u>
  - Determined by population but again only uses positive tests

State Population	Average Population	Detection Threshold (using flu positives only)		
		1/700	1/200	1/4
< 2 Million	1,094,706	8	3	1
2-5 Million	3,530,463	24	7	1
5-10 Million	7,193,033	48	14	1
10-20 Million	15,214,169	101	29	1
CA	38,041,430	251	72	2

Partnerships

- Essential for effective implementation
  - CDC
  - Flu Coordinators
  - Public Health Labs (PHL)
  - Clinical Labs
  - Commercial Labs

- Most important partnership
  - PHL staff and flu coordinators within state, Regional, and Local Health Department's (LHD)
    - Improves communication, education, and submitter outreach
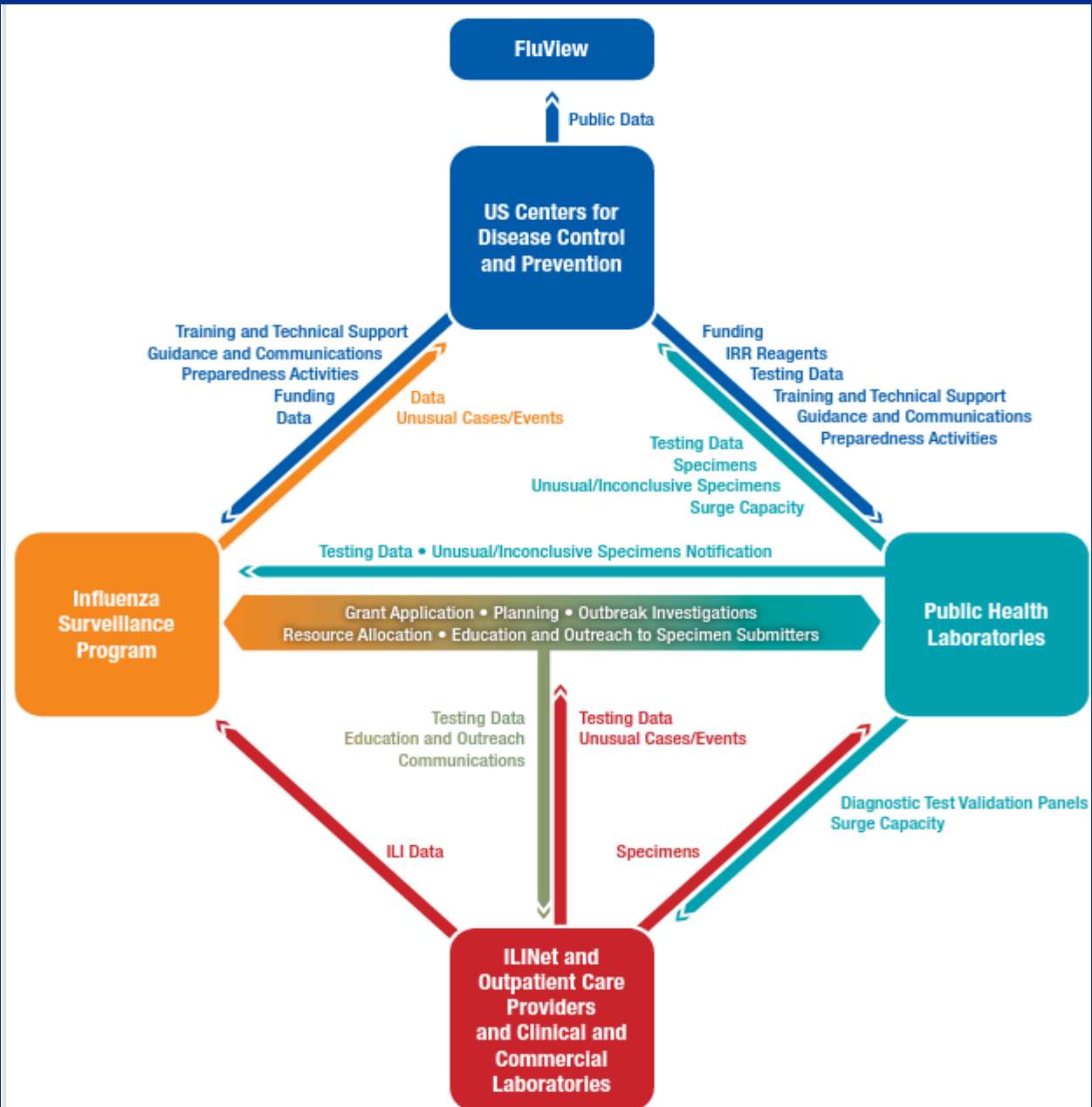
Goal for 2023-2024 Season

- Increase PHL sample submissions
  - 508 positives for 22-23 season
  - Goal for 23-24:
    - 100 positives a week, samples sent to Austin Lab for sequencing

- Increase communication between Laboratory Response Network Lab (LRN) and flu surveillance epidemiologist

- Assist DSHS Lab with Influenza Sequencing Center

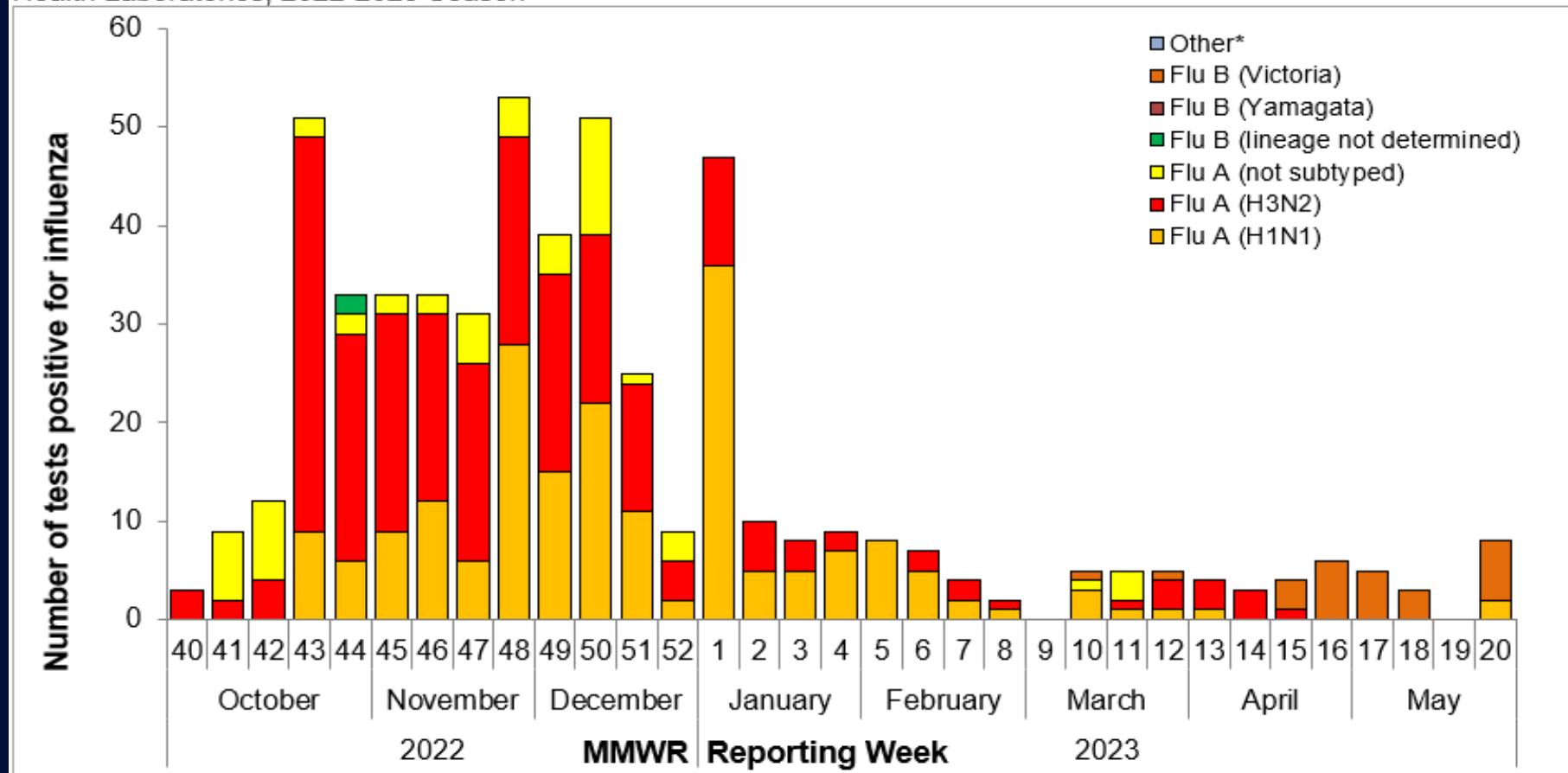| State Population	Average Population	Detection Threshold (using flu positives only)		
		1/700	1/200	1/4
< 2 Million	1,094,706	8	3	1
2-5 Million	3,530,463	24	7	1
5-10 Million	7,193,033	48	14	1
10-20 Million	15,214,169	101	29	1
CA	38,041,430	251	72	2

*State determinant for novel event detection

Goal for 2023-2024 Season

Recent Season (22-23) PHL Testing for Reference

Figure 2: Number of Tests (PCR) Positive for Influenza by Type, Subtype, and Lineage Reported by Texas Public Health Laboratories, 2022-2023 Season

Goal for 2023-2024 Season

- Situational awareness testing goals
  - met by current clinical lab testing
  - Maintain clinical testing numbers for 23-24 season

State Population	Average Population	Start of season # of non-screened ILI samples	Peak season # of non-screened ILI samples
< 2 Million	1,094,706	118	292
2-5 Million	3,530,463	132	316
5-10 Million	7,193,033	135	322
10-20 Million	15,214,169	137	325
CA	38,041,430	138	327

Goal for 2023-2024 Season

- Situational awareness testing goals are met by our current clinical lab testing (137 start and 325 peak)
  - 38,648 positives for 22-23 season
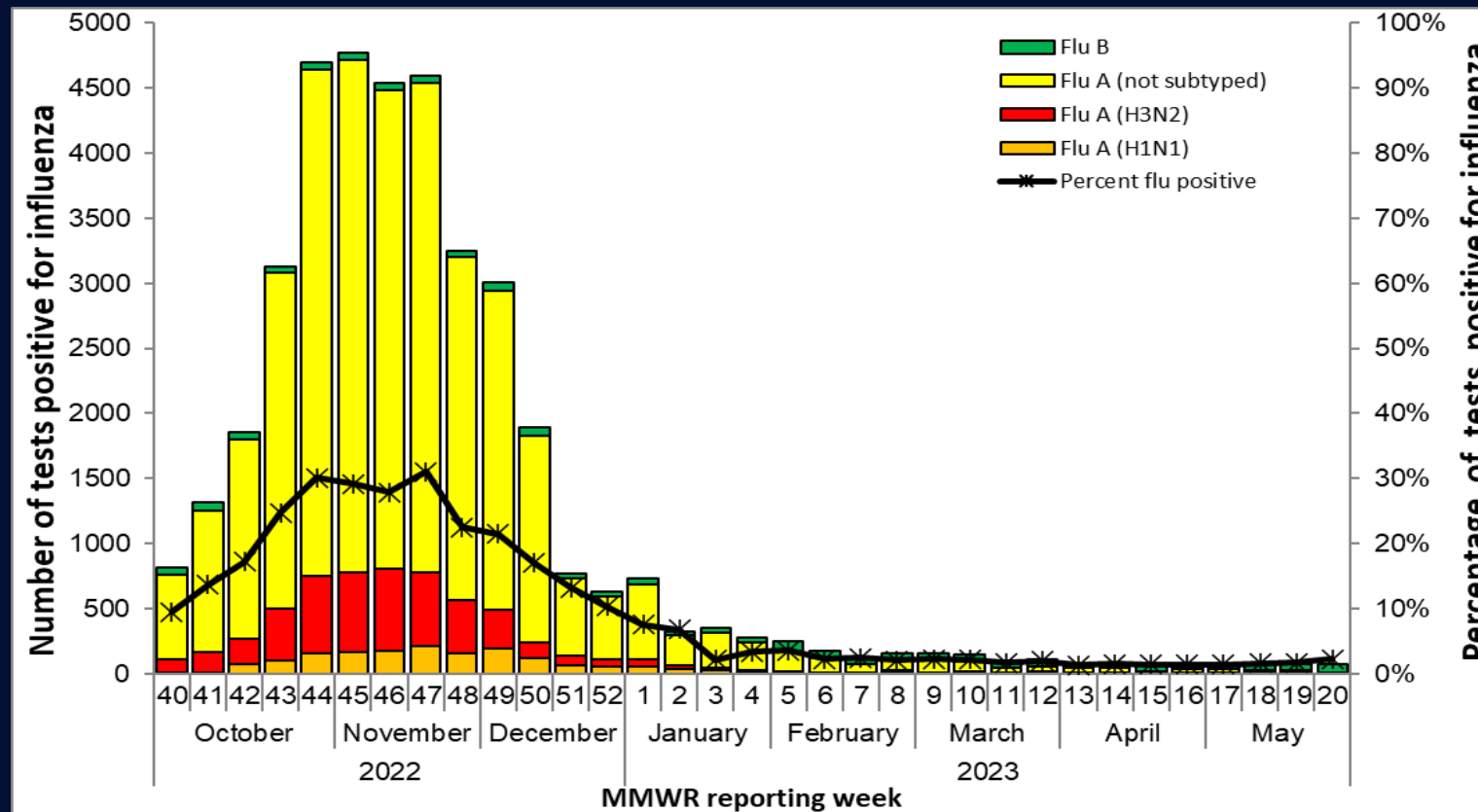
In Review

1. Rightsizing is a tool to aid flu surveillance in meeting testing needs, both at a State and National Level
   a. Provides standardization
   b. Ensures situational awareness and event detection

2. To be effective, we must have effective partnerships and participation

3. Flu Coordinators and epidemiologist are the stewards of the Right Size project

TEXAS
Health and Human Services

Texas Department of State
Health Services

Thank You!

Questions?

Emilio Gonzales

Emilio.gonzales@dshs.gov

flutexas@dshs.gov