

# Monthly Healthcare Provider & Public Health Partner Webinar

*Emerging Public Health Topics*

May 11, 2023

# Topics for Today

- CDC's updated COVID-19 Infection Prevention and Control Recommendations for Healthcare
- CDC's updated COVID-19 vaccine recommendations
- Tick-borne diseases (TBDs)
- RSV vaccine

# CDC's Updated COVID-19 Infection Prevention and Control Recommendations for Healthcare

# Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic

Updated May 8, 2023

- Reference to Transmission Metrics are removed
- Updated recommendations for use of face masks for source control, including a new [Appendix](#) with considerations for how/when to implement broader use of masking in healthcare settings
- Removed recommendation for admission testing in nursing homes, and leaves decision to facility discretion

# CDC's Updated COVID-19 Vaccine Recommendations

# Summary of CDC's Recommendations

- CDC's Interim Clinical Considerations have been updated twice in the last month (~April 22<sup>nd</sup> and May 1<sup>st</sup>); these are transitional recommendations
- Monovalent mRNA vaccines (Pfizer and Moderna) are no longer authorized/recommended for use; only use bivalent formulations
- Monovalent Novavax is still available and recommended
- Vaccine recommendations are complicated and based on age, immunocompromised status, vaccine history, and vaccine product used
- There are also recommended vs. optional vaccine recommendations
- Need to apply the guidance tables to specific patients
- Watch the CDC clinician webinar on “*Updated Recommendations for COVID-19 Vaccine Use*” occurring today, May 11<sup>th</sup> from 2-3pm (or watch the recording):  
[https://emergency.cdc.gov/coca/calls/2023/callinfo\\_051123.asp](https://emergency.cdc.gov/coca/calls/2023/callinfo_051123.asp)

# FDA's VRBPAC Meeting June 15<sup>th</sup>

- VRBPAC is meeting in June to make recommendations on strain selection for updated vaccines that are anticipated for the 2023-2024 respiratory virus season

ADVISORY COMMITTEE MEETING

## Vaccines and Related Biological Products Advisory Committee Meeting June 15, 2023 Announcement

JUNE 15, 2023

Scheduled

[f Share](#) [t Tweet](#) [in LinkedIn](#) [✉ Email](#) [🖨 Print](#)

### On This Page

- [Meeting Information](#)

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**Date:** June 15, 2023

**Time:** 8:30 AM - 5:00 PM ET

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# Tick-Borne Diseases (TBDs) in NH

**Lyme disease**

**Anaplasmosis**

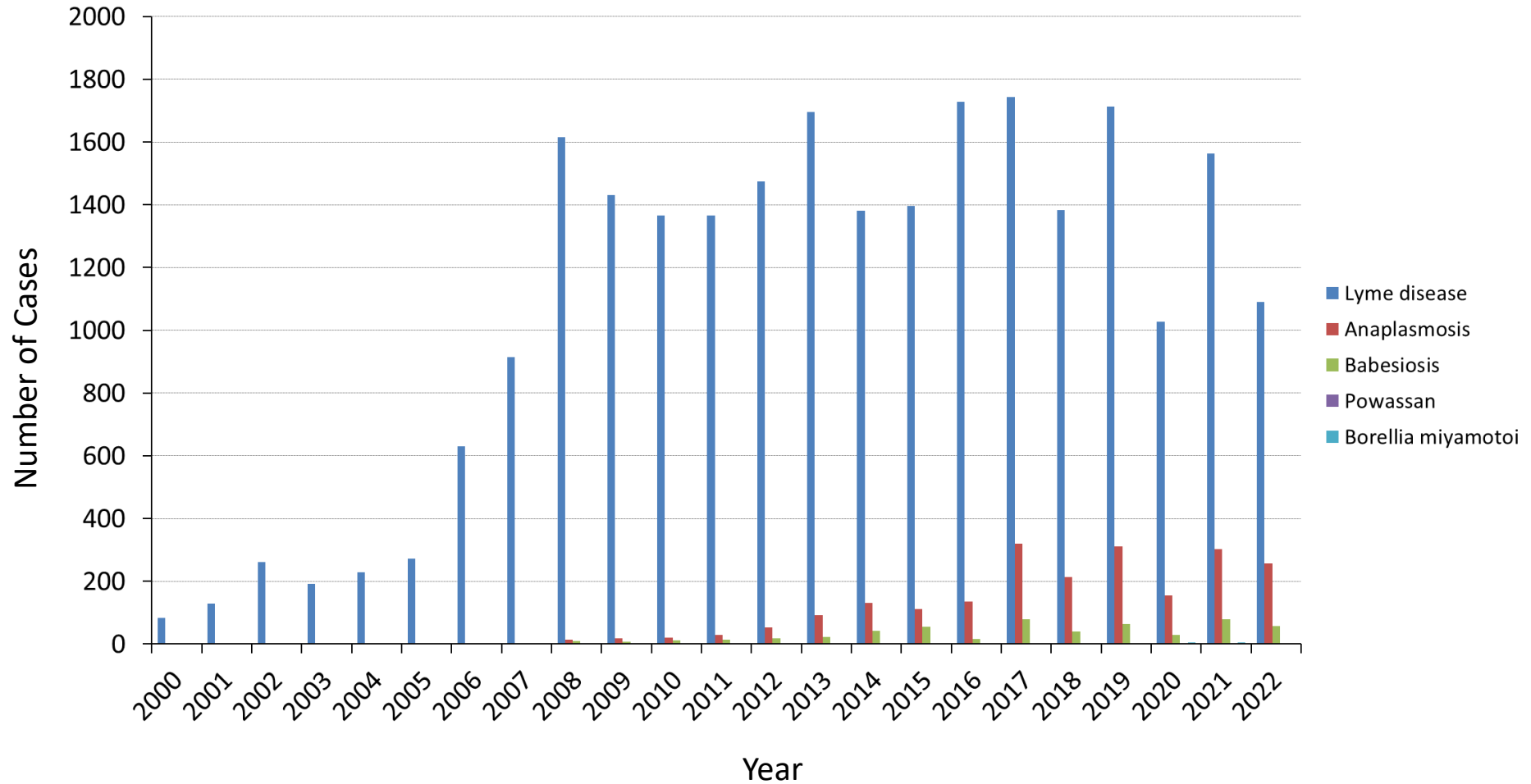
**Babesiosis**

***Borellia miyamotoi***

**Powassan**

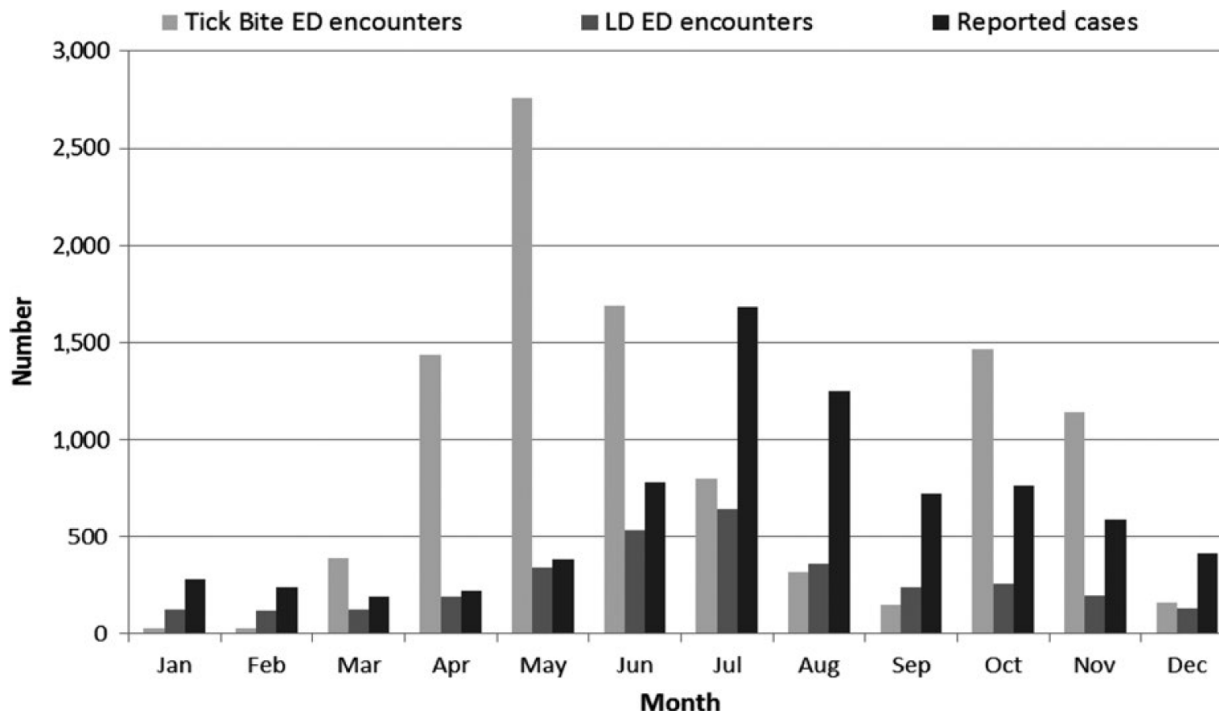


# Epidemiology of TBDs in New Hampshire



ORIGINAL ARTICLE

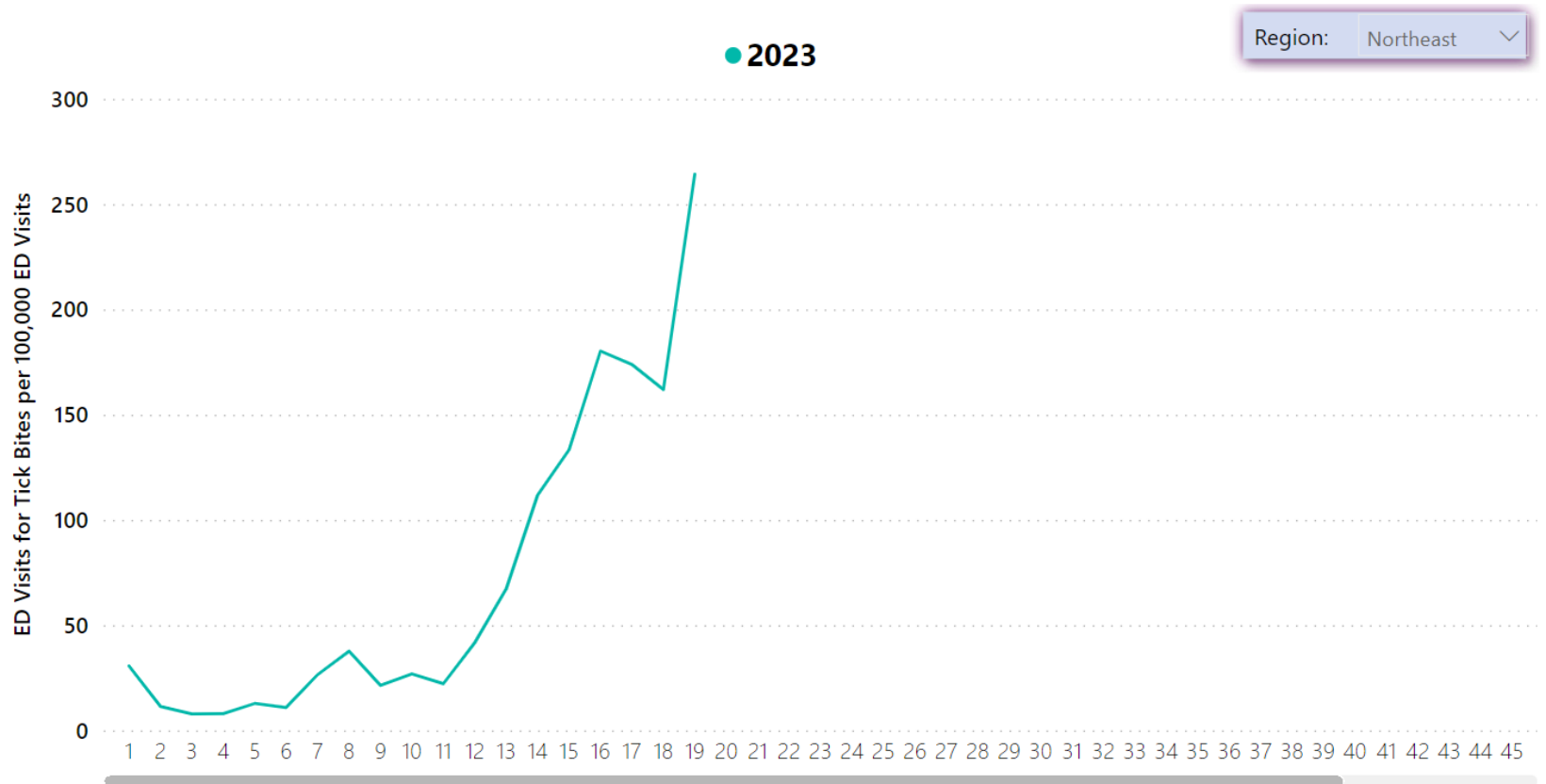
## Tick bite and Lyme disease-related emergency department encounters in New Hampshire, 2010–2014



**FIGURE 2** Number of tick bite-related and LD-related emergency department encounters and reported Lyme disease cases by month, New Hampshire, 2010–2014. ED: Emergency department, LD: Lyme disease.

# CDC's Tick Bite Tracker

Emergency Department (ED) Visits for Tick Bites by Week, United States, 2023



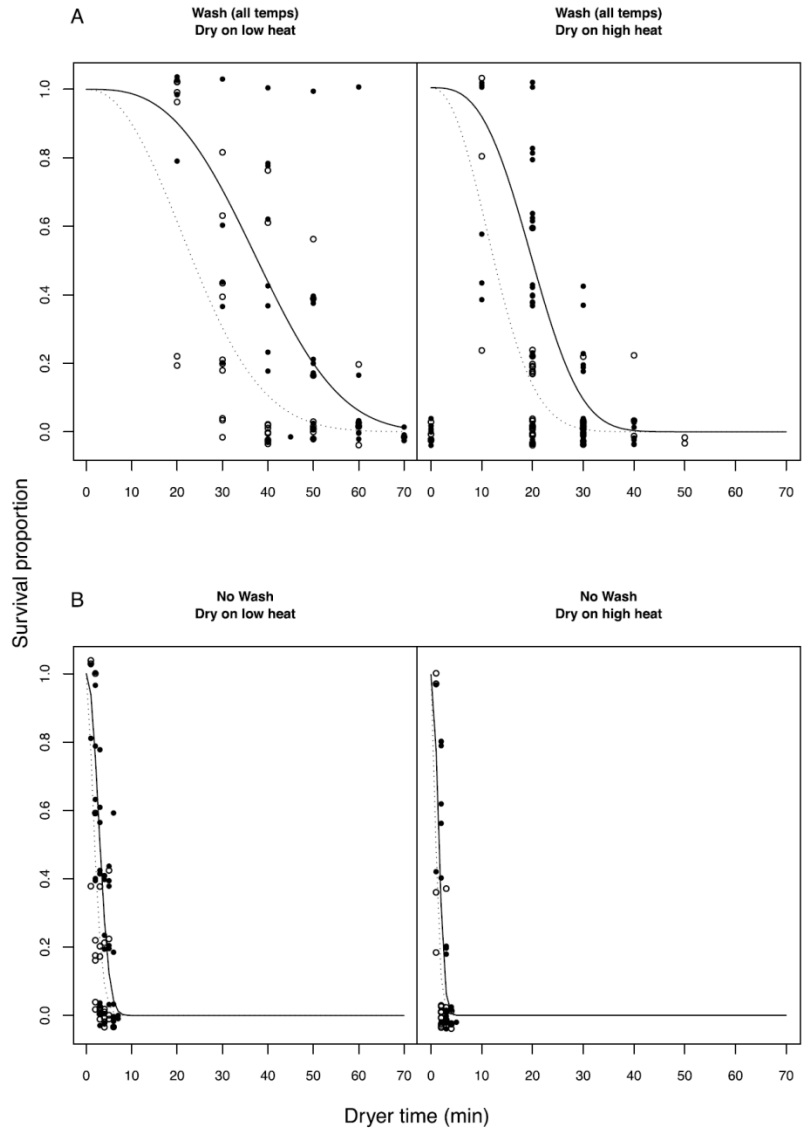
# Prevention of Tick Bites

- Avoid tick habitat
- Wear long sleeved clothing to cover skin
- Apply insect repellent to exposed skin
- Treat clothing with Permethrin
- Daily tick-checks (body, clothing, gear, pets)
- Shower to wash off loose ticks after coming indoors
- Place DRY clothes in the dryer on HIGH heat for 10 minutes to kill any attached ticks
- Remove attached ticks promptly (see [Tick Removal Instructions](#))



# The heat is on: Killing blacklegged ticks in residential washers and dryers to prevent tickborne diseases

Ticks and Tick-borne Diseases  
 Volume 7, Issue 5, July 2016, Pages 958-963

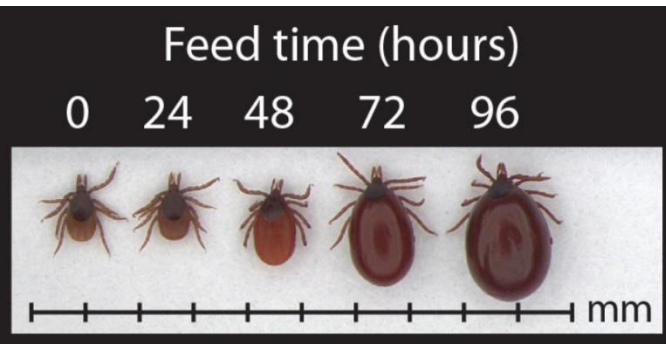



**Table 1**  
 Estimated time to kill all *I. scapularis* ticks under various washing and drying conditions. The last column shows the 95% upper bound on the time at which the model estimated a tick has only a 0.5% chance of survival.

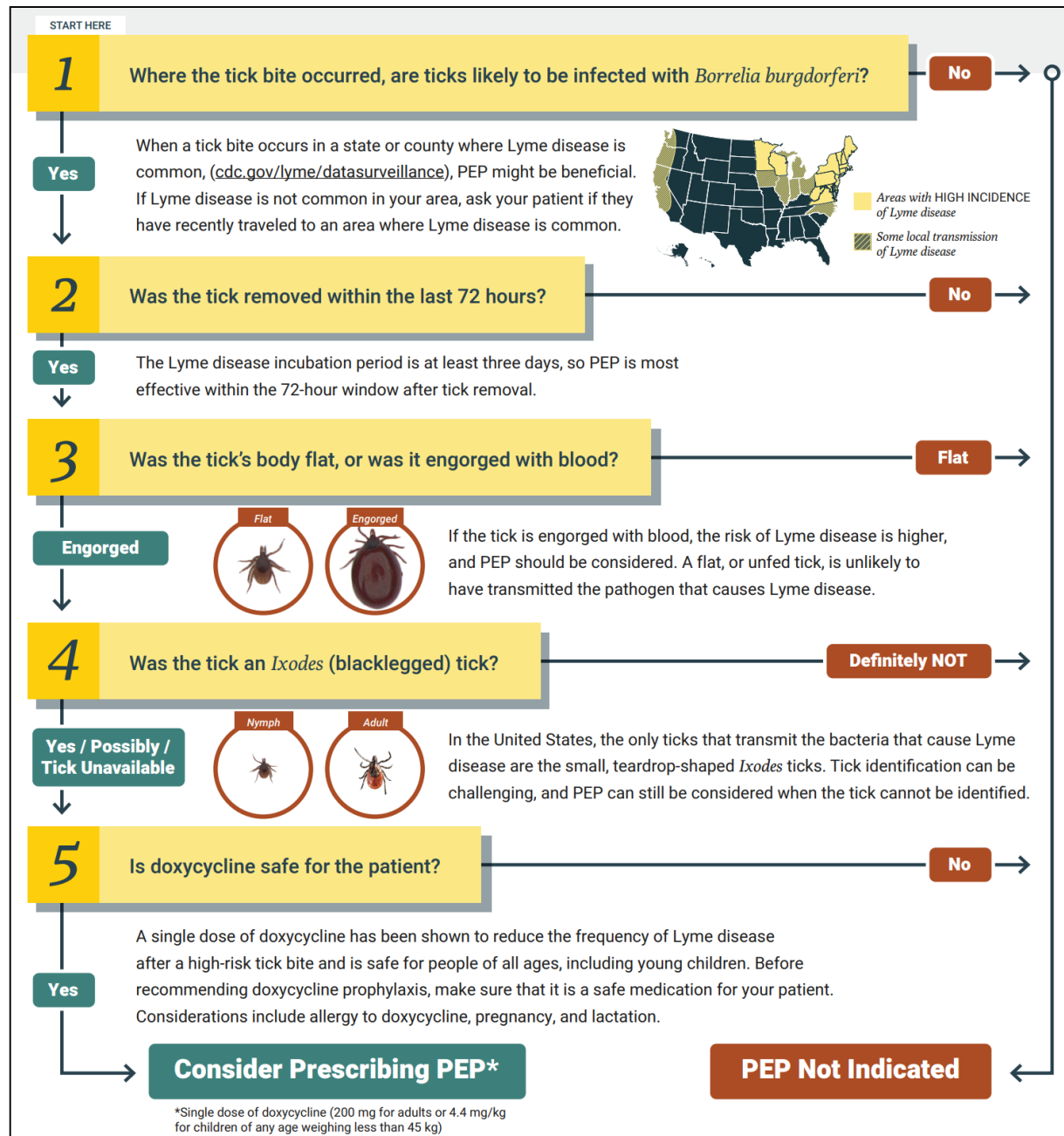
Wash	Drying temperature	Tick life stage	Time to kill all ticks in trials (minutes)	Estimated 95% upper bound on time to kill all ticks (minutes)
Yes	Low	Nymph	70	85
Yes	Low	Adult	70	96
Yes	High	Nymph	50	45 <sup>a</sup>
Yes	High	Adult	41	55
No	Low	Nymph	6	10
No	Low	Adult	7	11
No	High	Nymph	4	6
No	High	Adult	4	6

<https://pubmed.ncbi.nlm.nih.gov/27156138/>

# Lyme Disease Prophylaxis After a Tick Bite



Age Category	Drug	Dosage	Maximum	Duration
Adults	Doxycycline	200 mg orally	N/A	Once
Children weighing less than 45 kg	Doxycycline	4.4 mg/kg orally	200 mg	Once



# TICKBORNE DISEASES OF THE UNITED STATES

A Reference Manual for Healthcare Providers

Sixth Edition, 2022



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

<https://www.cdc.gov/ticks/tickbornediseases/index.html>



# General Diagnostic Principles

- PCR testing (when recommended and available) is generally most useful in the very early stage of illness (i.e., first week)
- Serology (antibody-based) testing is often negative during the early acute presentation, and becomes positive weeks after infection
- If you suspect early infection and initial antibody tests are negative, re-checking serology 4-6 weeks after suspected infection is often recommended to look for seroconversion (“acute and convalescent” serology)
- Antibody tests can remain positive for years after an infection:
  - Repeat antibody testing should NOT be used as a marker for treatment response
  - It might be difficult to know if positive antibody tests are the result of recent or past (and cleared) infection

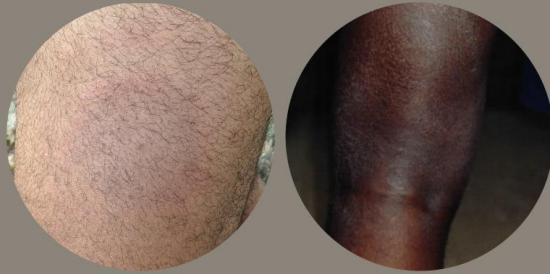


# Overview of TBD Diagnosis & Treatment

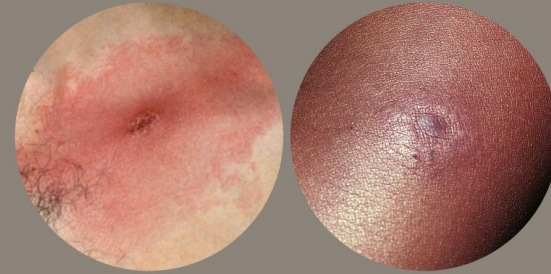
Disease	Organism	Diagnosis (check with your clinical lab to see what testing options are available)	Outpatient Oral Antimicrobial Therapy (refer to guidelines)
Lyme	<i>Borrelia burgdorferi</i>	<ul style="list-style-type: none"> <li>Erythma migrans (EM) rash is diagnostic</li> <li>Serology: two-step serologic testing; IgM considered only if signs/symptoms present for less than 30 days</li> </ul>	<ul style="list-style-type: none"> <li>Doxycycline</li> <li>Amoxicillin</li> <li>Cefuroxime <i>(Specific therapy dependent on stage/type of infection)</i></li> </ul>
Anaplasmosis	<i>Anaplasma phagocytophilum</i>	<ul style="list-style-type: none"> <li>PCR (first week of illness)</li> <li>Serology: 4-fold rise in IgG-specific antibody</li> </ul>	<ul style="list-style-type: none"> <li>Doxycycline</li> </ul>
Babesiosis	<i>Babesia spp.</i>	<ul style="list-style-type: none"> <li>Peripheral blood smear</li> <li>PCR</li> <li>Serology: total immunoglobulin or IgG-specific titer (supportive)</li> </ul>	<ul style="list-style-type: none"> <li>Azithromycin + Atovaquone (preferred)</li> <li>Clindamycin + Quinine (alternate)</li> </ul>
Hard Tick Relapsing Fever	<i>Borrelia miyamotoi</i>	<ul style="list-style-type: none"> <li>PCR</li> <li>Serology</li> </ul>	<ul style="list-style-type: none"> <li>Doxycycline</li> <li>Amoxicillin</li> </ul>
Powassan	Powassan virus	<ul style="list-style-type: none"> <li>Serology: IgM antibodies in serum or CSF; confirmation with PRNT neutralization antibody test</li> <li>PCR (can help confirm infection)</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>

# Different Forms of EM Rash in Lyme Disease

Faint colors and borders



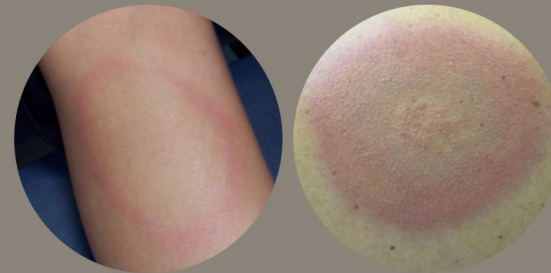
Crusted centers



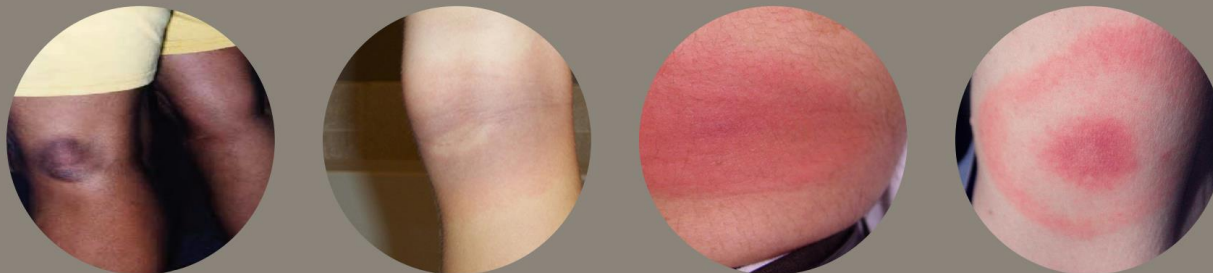
More than one rash



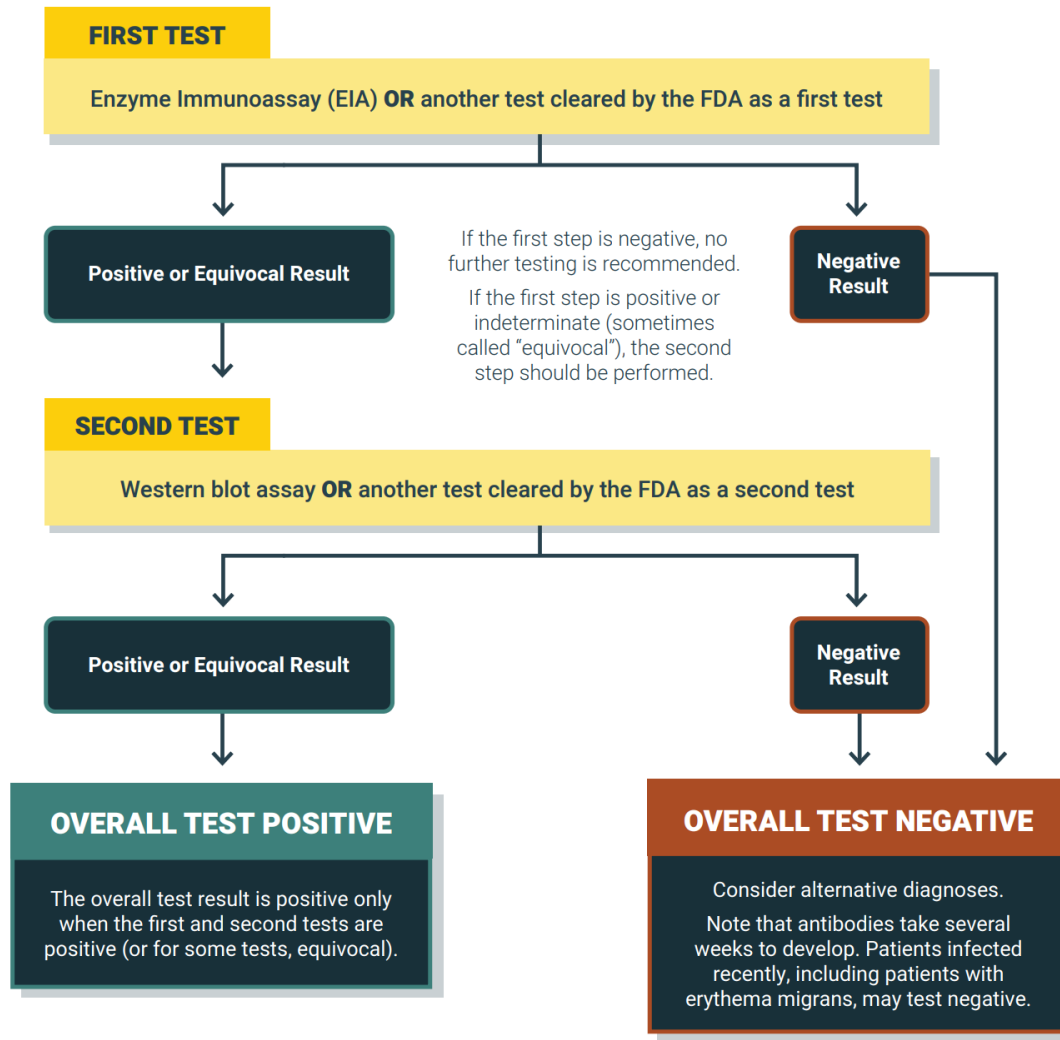
Different shapes and colors



Appearing anywhere on the body



# Lyme Disease Diagnosis: Two-Step Testing



CDC recommends using only FDA-cleared assays performed in CLIA-certified laboratories. Some laboratories, including some with CLIA-certification, offer laboratory-developed tests that are not FDA-cleared. CDC recommends against using these tests as there is less assurance regarding their clinical accuracy.

# Prevention of Tick Bites

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- Treat clothing with Permethrin
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# RSV Vaccine

# New (First) RSV Vaccines

RSV is a highly contagious ARI of all ages

- Circulates fall, peaks winter
- Causes LRTD, including life-threatening pneumonia and bronchiolitis
- CDC estimates 60-160k hospitalizations for older adults with 6-10k deaths each year
- No antiviral treatment

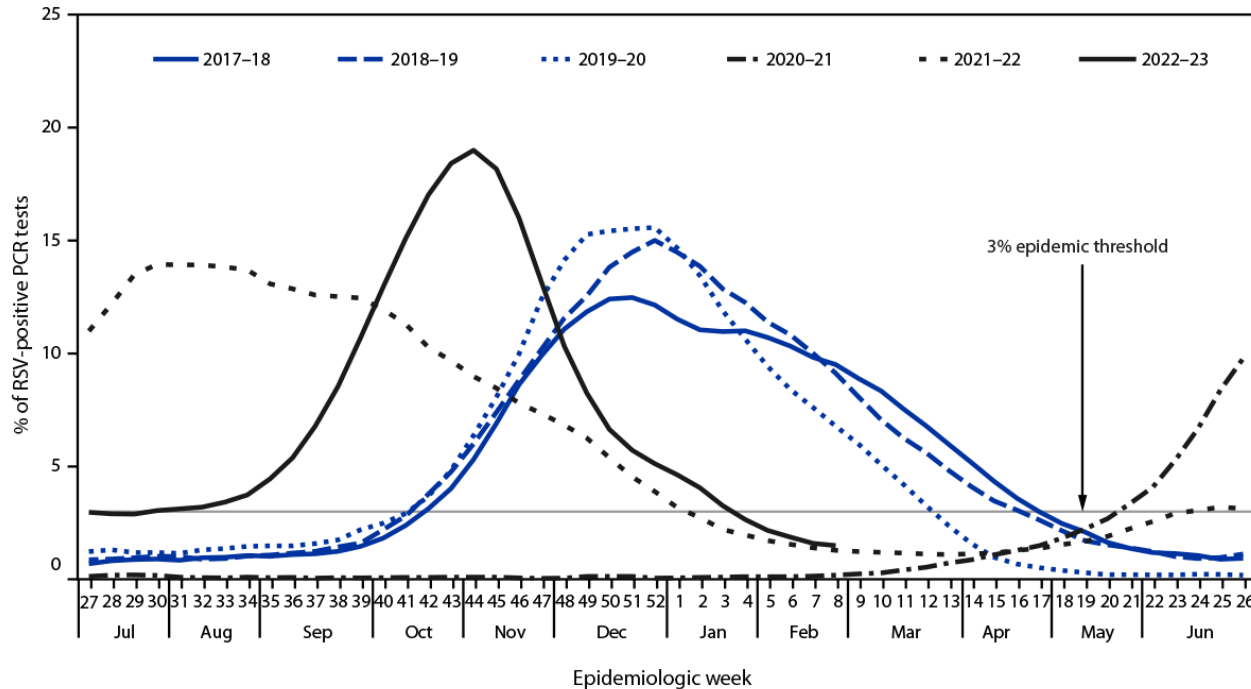
Pfizer Abrysvo and GSK Arexvy

## Seasonality of Respiratory Syncytial Virus — United States, 2017–2023

Weekly / April 7, 2023 / 72(14):355–361

[Print](#)

**FIGURE 1. Percentage\* of polymerase chain reaction test results positive for respiratory syncytial virus, by epidemiologic week — National Respiratory and Enteric Virus Surveillance System, United States, July 2017–February 2023**



### What is already known about this topic?

In the United States, the timing of seasonal respiratory syncytial virus (RSV) epidemics (October–April) was disrupted during the COVID-19 pandemic.

### What is added by this report?

RSV circulation was historically low during 2020–21 and began earlier and continued longer during 2021–22 than during prepandemic seasons. The 2022–23 season started later than the 2021–22 season but earlier than prepandemic seasons, suggesting a return toward prepandemic seasonality.

### What are the implications for public health practice?

Ongoing monitoring of RSV seasonality can guide the timing of immunoprophylaxis and evaluation of new immunization products. Although an eventual return to prepandemic RSV seasonality is expected, clinicians should be aware that off-season RSV circulation might continue.



# Pfizer RSVPreF (Abrysvo)

- Bivalent recombinant subunit vaccine with antigens against two RSV subgroups, A and B
- Single IM dose 120ug
- Placebo-controlled trial >34k participants
  - 2 primary end points VE against seasonal RSV-associated LRTD with  $\geq 2$  or  $\geq 3$  signs or symptoms
  - Secondary end point VE against RSV-associated ARI
- 66.7% VE against RSV with  $\geq 2$  symptoms (11 vs 33)
  - 85.7% VE against RSV  $\geq 3$  symptoms (2 vs 14)



RESEARCH SUMMARY

## Efficacy and Safety of a Bivalent RSV Prefusion F Vaccine in Older Adults

Walsh EE et al. DOI: 10.1056/NEJMoa2213836

**CLINICAL PROBLEM**

Respiratory syncytial virus (RSV) infection causes substantial illness in older adults, yet no RSV vaccine is currently approved by the Food and Drug Administration. Previously, an RSV challenge study showed that the investigational bivalent RSV prefusion F protein-based (RSVpreF) vaccine (containing stabilized prefusion F glycoproteins from the two major cocirculating antigenic subgroups, RSV A and RSV B) had high efficacy against symptomatic RSV infection in healthy adults who were 18 to 50 years of age, but its efficacy in older adults is unknown.



**CLINICAL TRIAL**

**Design:** An ongoing, phase 3, multinational, double-blind, randomized, placebo-controlled trial evaluated the efficacy and safety of RSVpreF vaccine in adults  $\geq 60$  years of age during a single RSV season.

**Intervention:** 34,284 participants received one intramuscular 120- $\mu$ g dose of RSVpreF vaccine (containing 60  $\mu$ g each of RSV A and RSV B antigens) or placebo. The two primary end points were vaccine efficacy against RSV-associated lower respiratory tract illness with either  $\geq 2$  signs or symptoms or  $\geq 3$  signs or symptoms in the first RSV season (starting on day 15 after the injection).

**RESULTS**

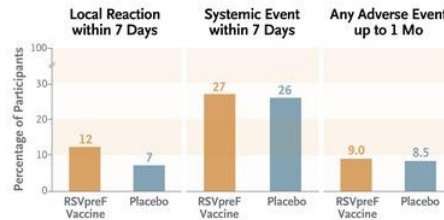
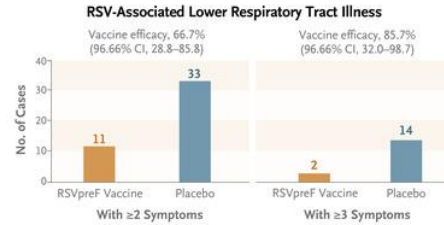
**Efficacy:** The RSVpreF vaccine was effective in preventing RSV-associated lower respiratory tract illness with  $\geq 2$  or  $\geq 3$  signs or symptoms.

**Safety:** Local reactions were more common with RSVpreF vaccine than with placebo within 7 days after injection; incidences of systemic events were similar in the two groups. Incidences of adverse events through 1 month after injection were also similar in the two groups.

**LIMITATIONS AND REMAINING QUESTIONS**

- Immunocompromised persons were excluded from the trial.
- Given the sample size, additional safety data are needed.
- The current prespecified interim analysis was limited to one RSV season; future analyses may assess whether vaccine efficacy persists beyond one season.

Links: [Full Article](#) | [NEJM Quick Take](#) | [Editorial](#)



**CONCLUSIONS**

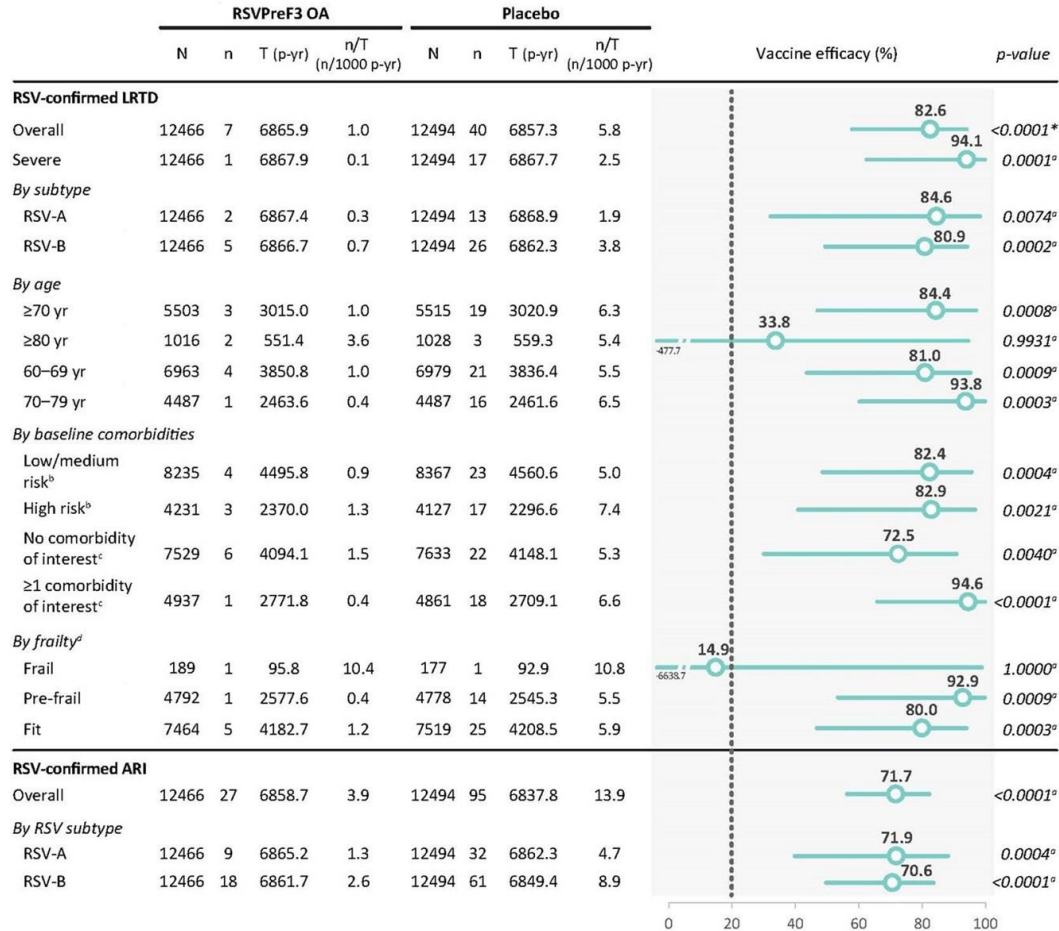
In adults  $\geq 60$  years of age, one dose of RSVpreF vaccine prevented RSV-associated symptomatic lower respiratory tract illness, with no apparent safety concerns, during a single RSV season.



## GSK RSVPreF3 (Arexvy)

- Monovalent recombinant subunit vaccine with glycoprotein antigen against RSV subgroup A
- Single IM dose 120ug with 50ug of same (but less) adjuvant in Shingrix
- 2 studies 2500 participants
- 1 main placebo-controlled trial 25k participants in 17 countries through 3 RSV seasons. First season:
  - 82.6% VE against LRTD, 94.1% against severe disease
    - Protection against both RSV A and B
    - 93.8% in age-group 70–79yrs

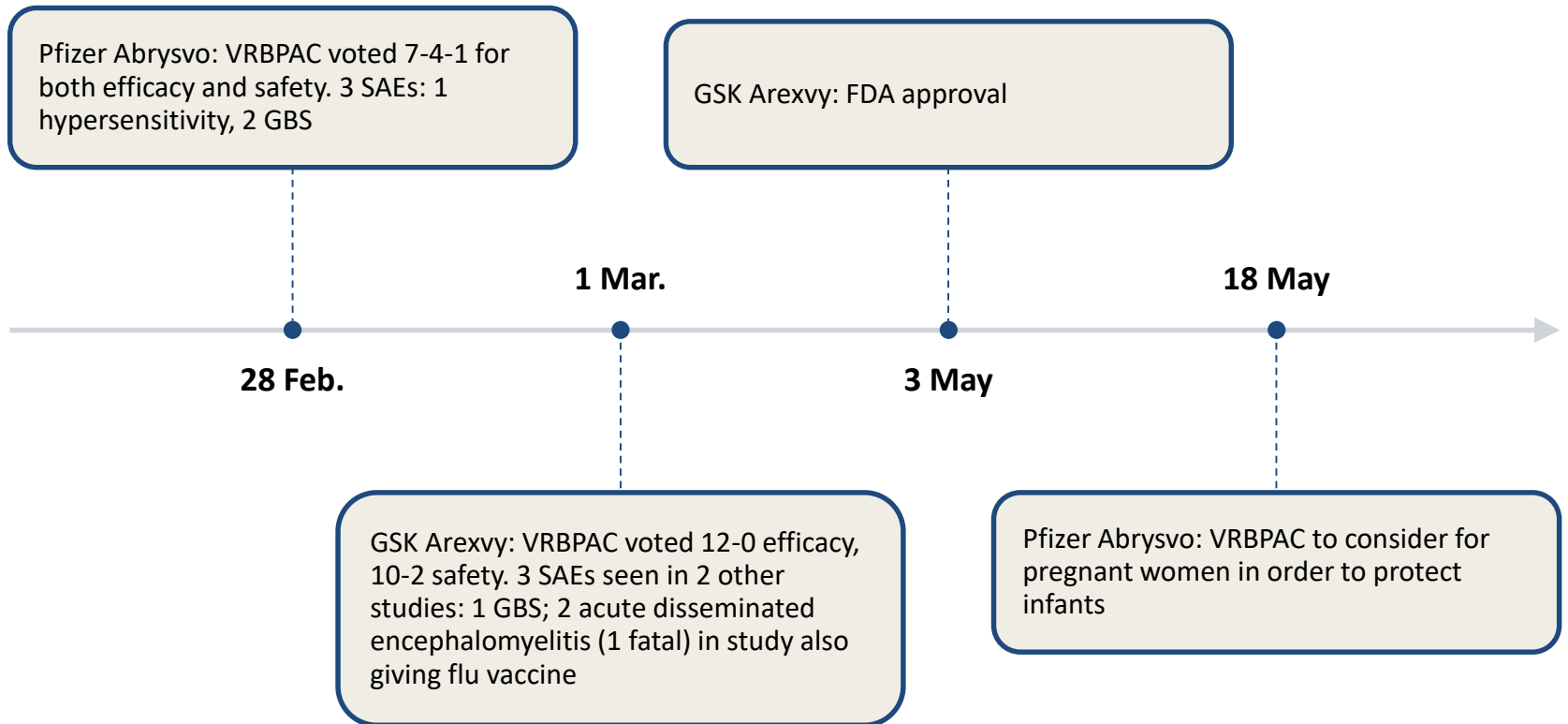
**Figure 1.** Vaccine efficacy against first episodes of RSV-confirmed LRTD and RSV-confirmed ARI (modified exposed set)



Cases reported up to the efficacy data lock point of 11 April 2022. **N**, number of participants in the modified exposed set; **n**, number of participants with ≥1 RSV-confirmed LRTD (identified by the adjudication committee) or ≥1 RSV-confirmed ARI; **T**, sum of follow-up time (from day 15 post-vaccination until first occurrence of the event, data lock point or drop-out); **p-yr**, person-years; **n/T**, incidence rate of participants reporting at least one event. Error bars represent 96.95% confidence intervals (CI) for primary objective (RSV-confirmed LRTD, overall) and 95% CI for other endpoints. <sup>1</sup>Two-sided exact p-value conditional to number of cases comparing incidence rates; <sup>2</sup>Two-sided exact nominal p-value conditional to number of cases comparing incidence rates. <sup>3</sup>Charlson comorbidity index: low/medium risk, participants with baseline comorbidity score ≤3; high risk, participants with baseline comorbidity score >3. <sup>4</sup>Comorbidities of interest included chronic obstructive pulmonary disease, asthma, any chronic respiratory/pulmonary disease, chronic heart failure, diabetes mellitus type 1 or type 2 and advanced liver or renal disease. <sup>5</sup>Frailty status assessed using a gait speed test: frail, participants with a walking speed <0.4 m/s or not able to perform the test; pre-frail, participants with a walking speed of 0.4–0.99 m/s; fit, participants with a walking speed ≥1 m/s. Note: RSV subtype was unknown for 1 RSV-confirmed LRTD and 2 RSV-confirmed ARI episodes.

# Toward Approved RSV Vaccine(s)

VRBPAC > FDA > ACIP > CDC



# Q&A

# Next Webinar is **June 8<sup>th</sup>**

- We will continue these webinars on a monthly cadence (2<sup>nd</sup> Thursday of each month from 12-1pm)
- Future Topics:
  - Mpox update
  - Long-COVID
  - RSV vaccine update