

Multicenter Evaluation of the Impact of Just-in-Time Viral Testing on Guideline Concordant Management of Febrile Infants 8-60 days

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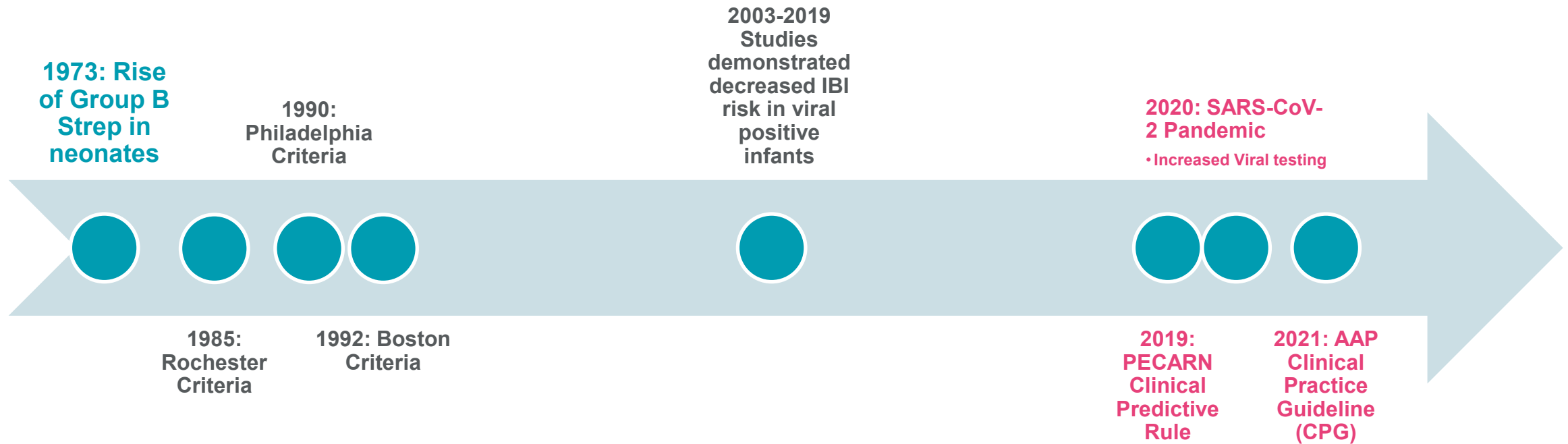
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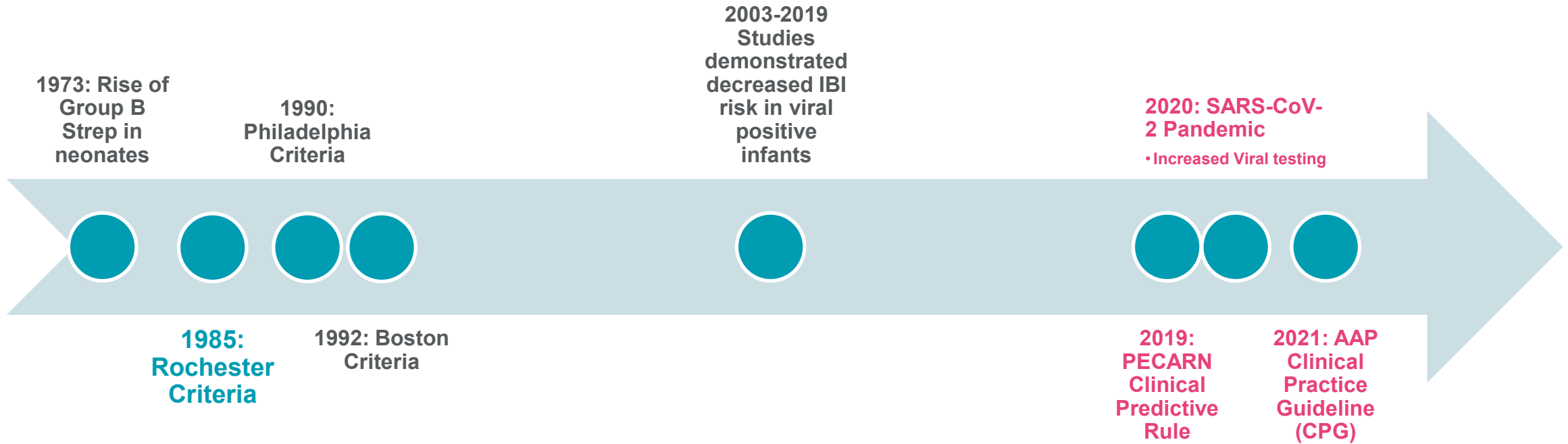
Background

- Fever may be the only sign of infection in well appearing infants aged 0-60 days presenting to the Emergency Department (ED)
- Invasive bacterial Infections (IBI) and urinary tract infection (UTI) are a significant source of morbidity and mortality in young infants
- Infants <60 days with viral infections have lower rates of IBI but non-negligible
- Optimal risk stratification methods remain unclear

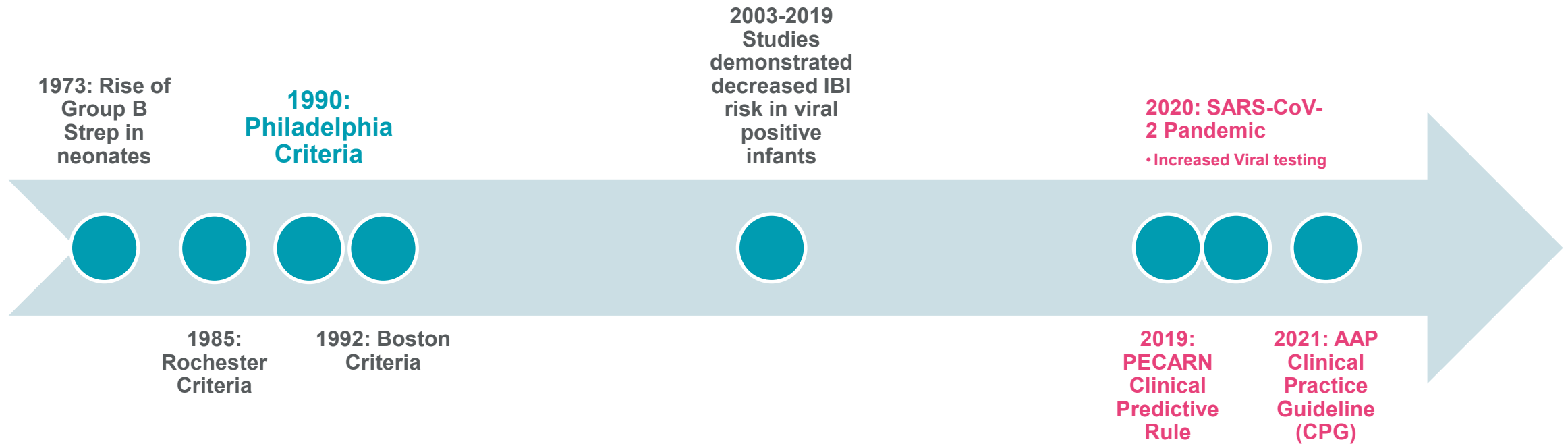
Timeline to Evidence Based Care



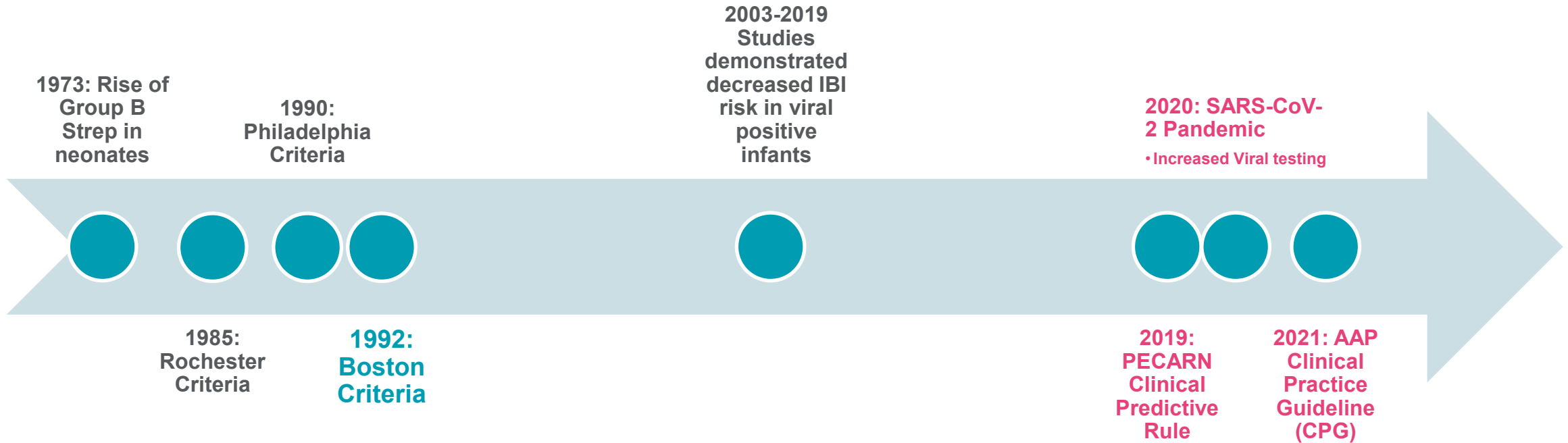
Timeline to Evidence Based Care



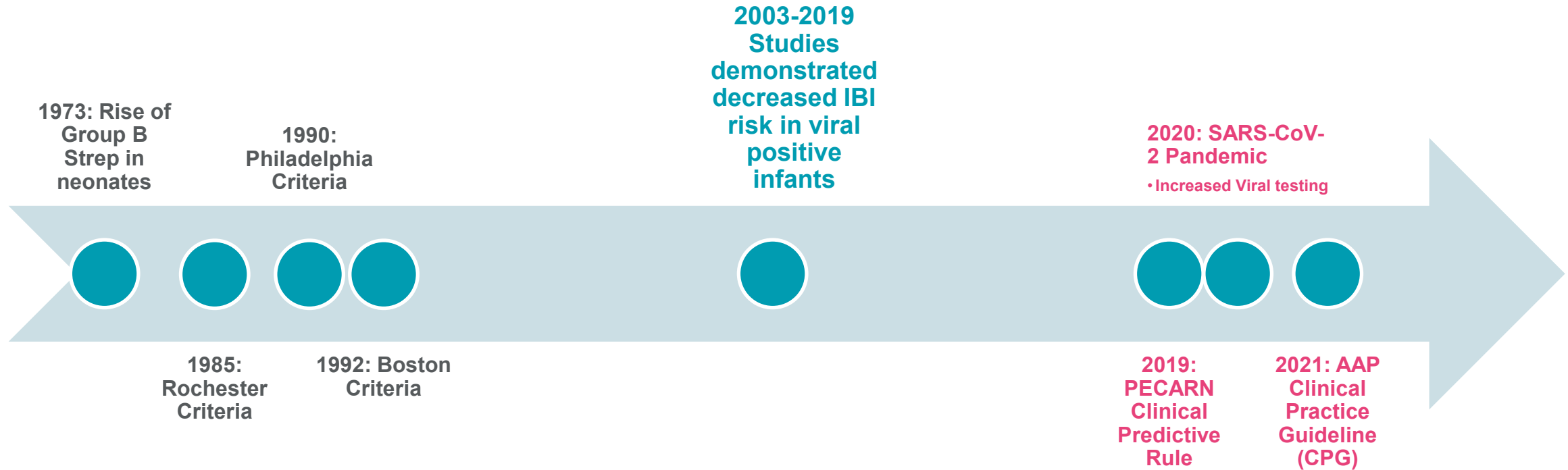
Timeline to Evidence Based Care



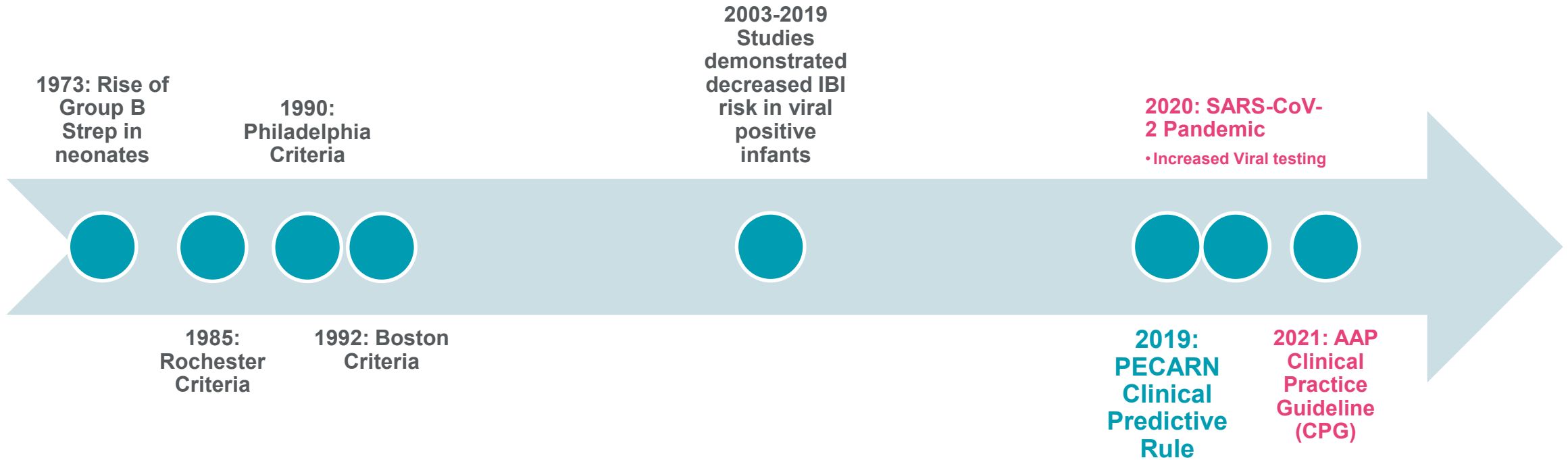
Timeline to Evidence Based Care



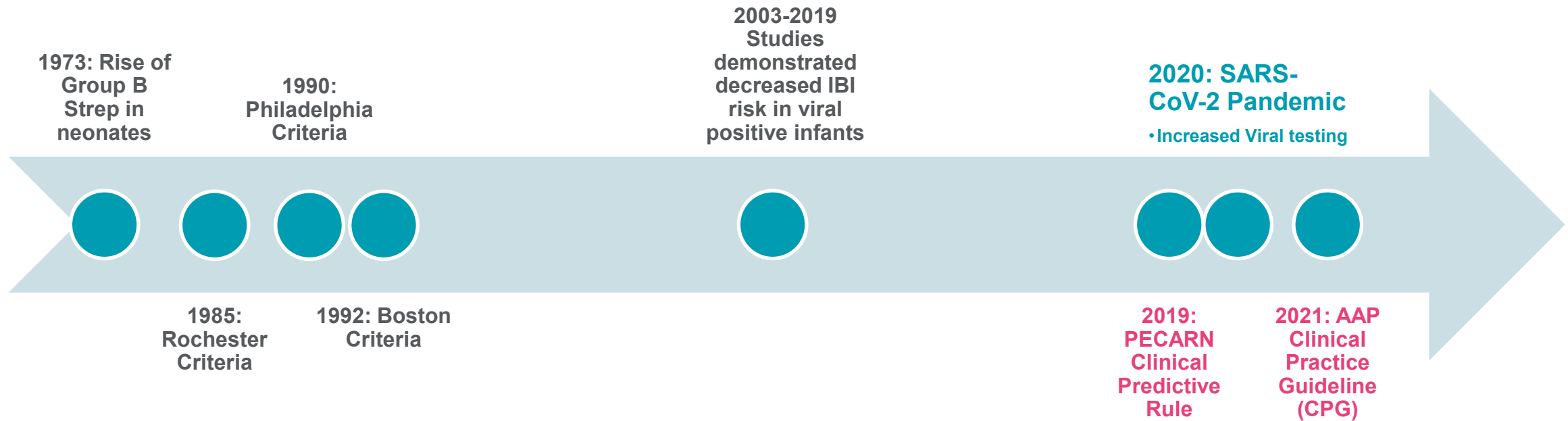
Timeline to Evidence Based Care



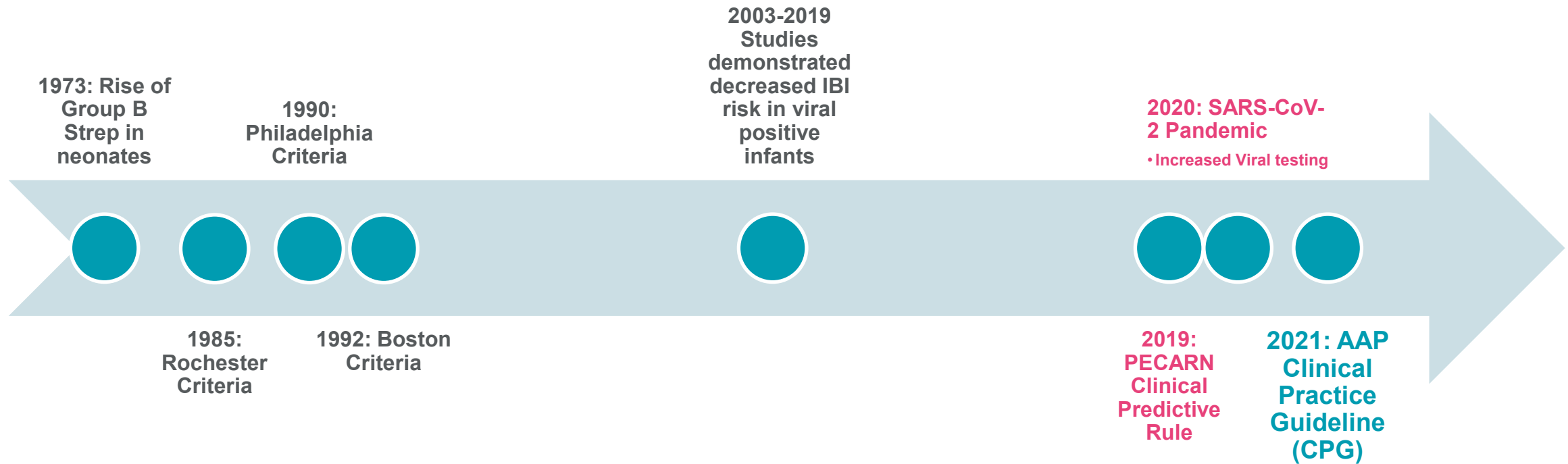
Timeline to Evidence Based Care



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Timeline to Evidence Based Care



Our Question:



With a pandemic resulting in an increase in viral testing, a new clinical predictive rule, and a new clinical practice guideline, did we change the way we evaluated febrile infants 8-60 days of age when we were privy to their viral test results?

Objectives

- **Objective 1:**
 - Describe ED IBI and UTI evaluation among infants who received just-in-time (JIT) respiratory viral testing overall and between those with positive and negative JIT respiratory viral tests
- **Objective 2:**
 - Determine the prevalence of IBI and UTI in febrile infants with and without documented respiratory viral co-infection who underwent respiratory viral testing in the ED
- **Objective 3:**
 - Evaluate the role of socioeconomic status on the administration of age-appropriate evaluation among febrile infants with JIT viral test results

Methods



Design: Retrospective cohort study of all febrile infants 8-60 days presenting to 17 PECARN affiliated EDs

Dates: 01/2019 – 04/2024

Inclusion Criteria

1. Documented Temp $\geq 38.0^{\circ}\text{C}$ at time of ED visit
2. Natural Language Processing identification of chief complaint of fever within 24 hours prior to presentation with at least 1 culture (blood, urine, CSF)

Exclusion Criteria

1. Infants without JIT respiratory viral test results
2. Afebrile or hypothermic infants evaluated for infection
3. Infants with focal bacterial infections
4. Infants who received systemic antibiotics within 48 hours prior to the ED visit

Exposure Variable: Just in Time (JIT) respiratory viral testing for Influenza, SARS-CoV-2, and/or RSV resulting during ED visit

Methods- Outcome



Pre-2021		Febrile Infants 8-21 days	Febrile Infants 22-28 days	Febrile Infants 29-≤ 60 days
	Blood Culture	Recommended	Recommended	Recommended
	Micro urine culture	Recommended	Recommended	Recommended
	CSF Culture	Recommended	Recommended	Recommended
2021 CPG	Blood Culture	Recommended	Recommended	Recommended
	Micro urine culture or urinalysis	Recommended	Recommended	Recommended
	CSF Culture	Recommended	Perform if inflammatory markers abnormal	Perform if inflammatory markers abnormal
	Inflammatory Markers PCT, CRP, and ANC	Consider but not required for compliance	Recommended	Recommended

CPG: Clinical Practice Guideline

Analysis: Chi-Square Testing

Results...in progress

- 8,567 febrile infants had JIT viral testing in 17 EDs
 - 99.8% had IBI and/or UTI evaluation
- **JIT-positive infants** were more likely to have age-based evaluations (92.3% vs 89.4%, $p < 0.001$)
- Post-CPG (2021), a higher proportion of JIT-negative infants received blood and urine testing but infants 29-≤60 days received less CSF testing
- Compliance with age-based evaluations improved from 88.8% in 2019 to 92.1% in 2023 ($p = 0.03$)

Conclusions & Next Steps



- Positive JIT respiratory viral test results prior to or during ED evaluation for bacterial infection did not lead to a divergence from any age-based standardized recommendations
- Abstract submitted to Pediatric Academic Societies
- Objective 2 underway to determine prevalence of disease during the pandemic

Questions?