Pneumococcal Serotype Replacement and Distribution Estimation (PSERENADE) Project

INTERNATIONAL VACCINE ACCESS CENTER

Objectives

- Estimate the change in vaccine-type (VT), non-vaccine type (NVT), and all IPD incidence by age group following introduction of PCV10/13 compared to pre- any PCV use

Aim 1: Change in IPD incidence after PCV introduction

Estimate the change in IPD incidence by age group following introduction of PCV compared to pre- any PCV use.

- All IPD
- VT (by product)
- NVT (by product)
- Serotypes of interest (3, 19A, 8, 12F, etc…)

How much has the PCV program reduced all IPD incidence?

Are VTs eliminated?

What is the magnitude of NVT replacement?

Is replacement disease the result of few or many serotypes?

Feikin et al., 2013

Aim 2: Post-PCV10/13 serotype distribution analysis in <5s

Estimate the serotype distribution of remaining IPD among children <5 years of age in mature PCV10/13 settings.

How does the distribution vary by:

- Product use (PCV10 vs. PCV13)
- Region
- Vaccine uptake

What proportion of disease is still caused by vaccine type serotypes? Which serotypes? Which serotypes have been eliminated?

Which non-vaccine type serotypes are emerging?

What is the potential impact of upcoming higher-valency PCV products in eliminating remaining IPD?

*Data shown are preliminary and for illustrative purposes only

Goal 1. Data collection update

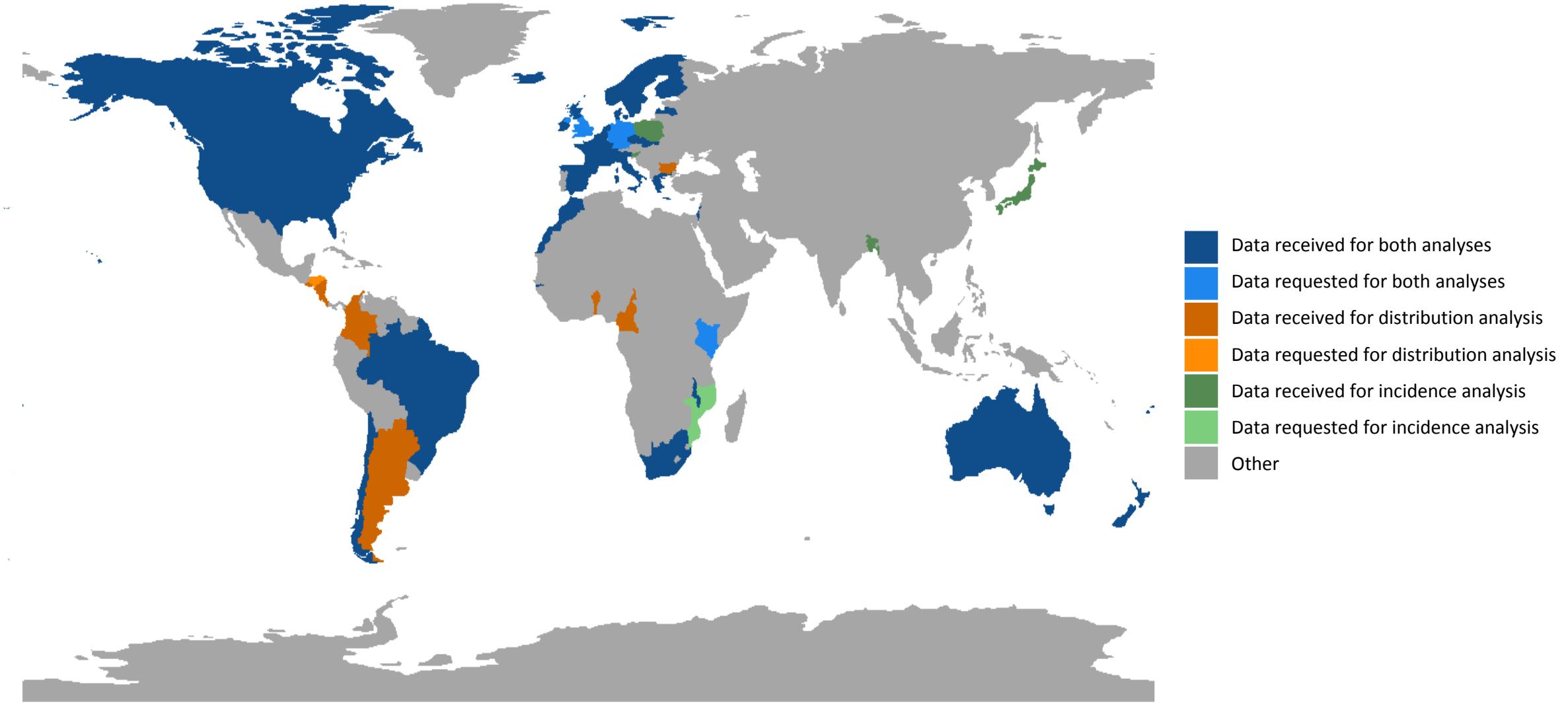
52 datasets received from 41 countries

42 datasets received for incidence analysis

41 datasets received for distribution analysis

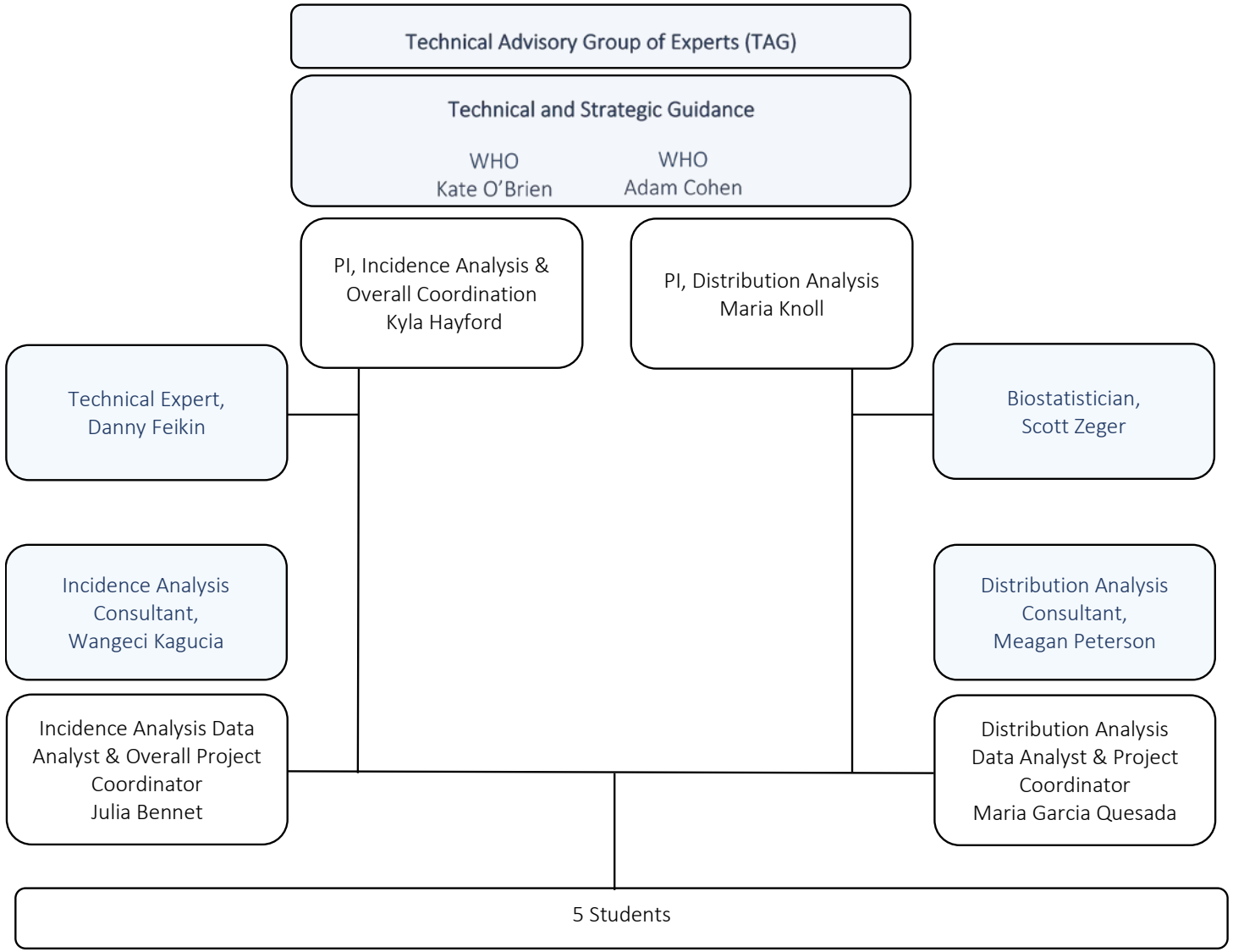
Expect to receive up to 11 additional datasets

Goal 1. Data collection update



Other includes countries with ineligible or unavailable data as well as those that have declined to participate

PSERENADE Team



Goal 4. Next steps

Q4 2019 – Q1 2020:

Finish data quality review & determine analytic eligibility criteria

Global analysis and preliminary results

→ Email update & discussions with individual sites

Q2 2020:

Share preliminary results (early Q2) and revised results (end of Q2) for feedback from sites

→ Analytic working group calls, written feedback, discussions with site investigators

SAGE Working Group on PCV use in adults

ISPPD Toronto June 2020 – results dissemination*

Q3 2020:

Circulate draft manuscripts

Note: Proposed timelines for ISPPD abstract submission –

- Sites eligible for distribution analysis will be sent a draft ISPPD abstract in the next two weeks: Dec 16 – 30.
- Request feedback in 1-2 weeks
- Submit: 13 January 2020
- Additional latebreakers

Technical Advisory Group (TAG)

Independent experts not directly responsible for a surveillance site providing data to the project

Provide advice on how best to accomplish PSERENADE objectives:

- Defining objectives
- Methodologic issues
- Analytic methods

Quarterly teleconferences

TAG members

Catherine Satzke

Cyndy Whitney

Elizabeth Miller

Marc Lipsitch

Shabir Madhi

Thomas Cherian

William Hausdorff

Extra Slides

Incidence analysis data collection eligibility criteria

Inclusion Criteria

1. Site or network reports IPD incidence or data to calculate incidence. IPD is defined as detection of pneumococcus from a normally sterile site. IPD incidence data should include:
    a) Annual serotype-specific and age-specific IPD case counts and
    b) A population-based denominator.
2. At least 50% of cases serotyped per year in at least one age stratum.
3. At least one complete year of data post-PCV10/13 introduction, excluding the year of introduction
4. At least 50% coverage for primary PCV series at 12 months of age in at least one year post-PCV10/13.
5. PCV10 or PCV13 is universally recommended in the infant immunization schedule.

Exclusion Criteria

1. Major changes or biases in surveillance that would affect estimates of serotype specific rates.

Distribution analysis data collection eligibility criteria

Inclusion Criteria

1. Study conducted in surveillance site that reports serotype-specific pneumococcal case counts that are:
   - Obtained from normally sterile sites,
   - Among children under five years of age.
2. Study conducted in a setting with mature* PCV10/13 immunization program (in NIP).

   *At least three years of post-PCV10/13 introduction surveillance data (excluding the year of introduction) and at least 50% coverage for the primary PCV series at 12 months of age in at least one year.
3. At least 50% of isolates serotyped.
4. Study reports a minimum of 12 months of continuous surveillance.

Exclusion Criteria

1. Major changes or biases in surveillance that would affect estimates of serotype specific proportions.
2. Study does not limit testing or reporting to HIV positive or immunocompromised populations.