Applying modeling concepts to public health case studies

Activities

Four activities

Activity 1:

Three case studies – which modeling outputs are helpful?

Activity 2:

Interpreting modeling output for decision-making.

Activity 3:

Communicating public health recommendations based on modeling output.

Activity 4:

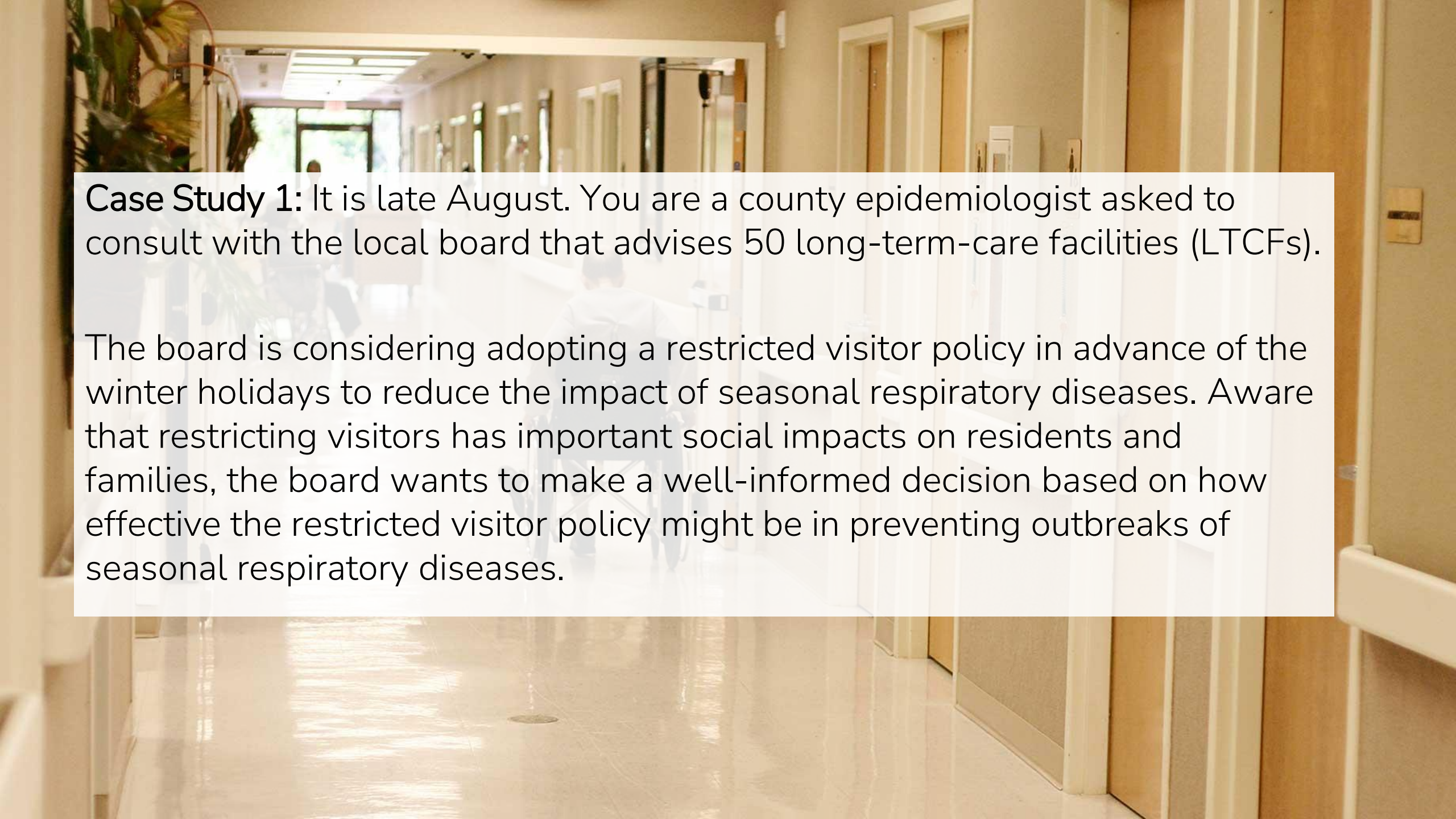
Evaluating public health action and wrapping up.

Activity 1: Deciding which analytic approach is best

Case Study 1 – Visitation policies for long-term care facilities

Instructions for Activity 1

- For each case study, review and answer these questions:
  - What type of analytic output would you ask for? Why?
    - Qualitative assessment
    - Nowcast
    - Short-term forecast
    - Scenario model
  - What information should you be prepared to provide to the modeling and analytics team?
  - What other epidemiological information would be useful and how would you explain it?
  - What sources of uncertainty might affect the outputs the team develops?



Case Study 1: It is late August. You are a county epidemiologist asked to consult with the local board that advises 50 long-term-care facilities (LTCFs).

The board is considering adopting a restricted visitor policy in advance of the winter holidays to reduce the impact of seasonal respiratory diseases. Aware that restricting visitors has important social impacts on residents and families, the board wants to make a well-informed decision based on how effective the restricted visitor policy might be in preventing outbreaks of seasonal respiratory diseases.

Which approach is best?

Scenario Modeling!

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Why scenario modeling?

- We are interested in comparing the outcomes of hypothetical scenarios to assess the potential impact of an intervention months away
  - Restricting visitors vs. not restricting visitors

- Scenario modeling can be a helpful tool when:
  - Weighing multiple intervention options
  - Deciding how to allocate scarce resources
  - Making difficult decisions with social implications
  - Trying to understand impact of factors beyond our control (e.g. new variants, behavior changes)
  - Communicating different options or outcomes to leadership, the media, or the public

Information relevant for the modeling and analytics team

- Data that would be helpful to share:
  - Historical data from previous years on respiratory illnesses in the community and in LTCFs
  - Size of the facilities
  - Number and pattern of visitors during the holidays
  - Whether there is ample supply of PPE
  - Staff vaccination rates, staff absenteeism rates
  - Other prevention policies in place and estimated adherence (e.g., masking, temperature screening, staff sick leave policies, etc.)
- Relevant epidemiologic information to share:
  - Transmission potential of respiratory viruses (probability of transmitting based on time visiting, especially if available for the LTCF population)
  - Patterns of transmissibility in people with/without symptoms

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov