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Lessons learned from the Salmonella Saintpaul outbreak

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Disclaimer

"The findings & conclusions in this presentation have not been formally disseminated by CDC & should not be construed to represent any agency determination or policy."

Changing Epidemiology of Foodborne Outbreaks

Old scenario:

- Acute local event
- Sudden rise in acute illness
- Detected by cases, MD or lab
- Local investigation
- Point source
- ≥ 1 food handling error(s)
- Local solution
- Local implications

New Scenario:

- Multi-state, multi-county
- Increase in "sporadic" cases
- Detected by lab subtyping
- Multi-state investigations
- System error(s)?
- Industry-wide implications

- Not simple investigations
- Not easy to investigate
- Scientifically/technically challenging

Changing Epidemiology of Foodborne Outbreaks

"Church picnic":

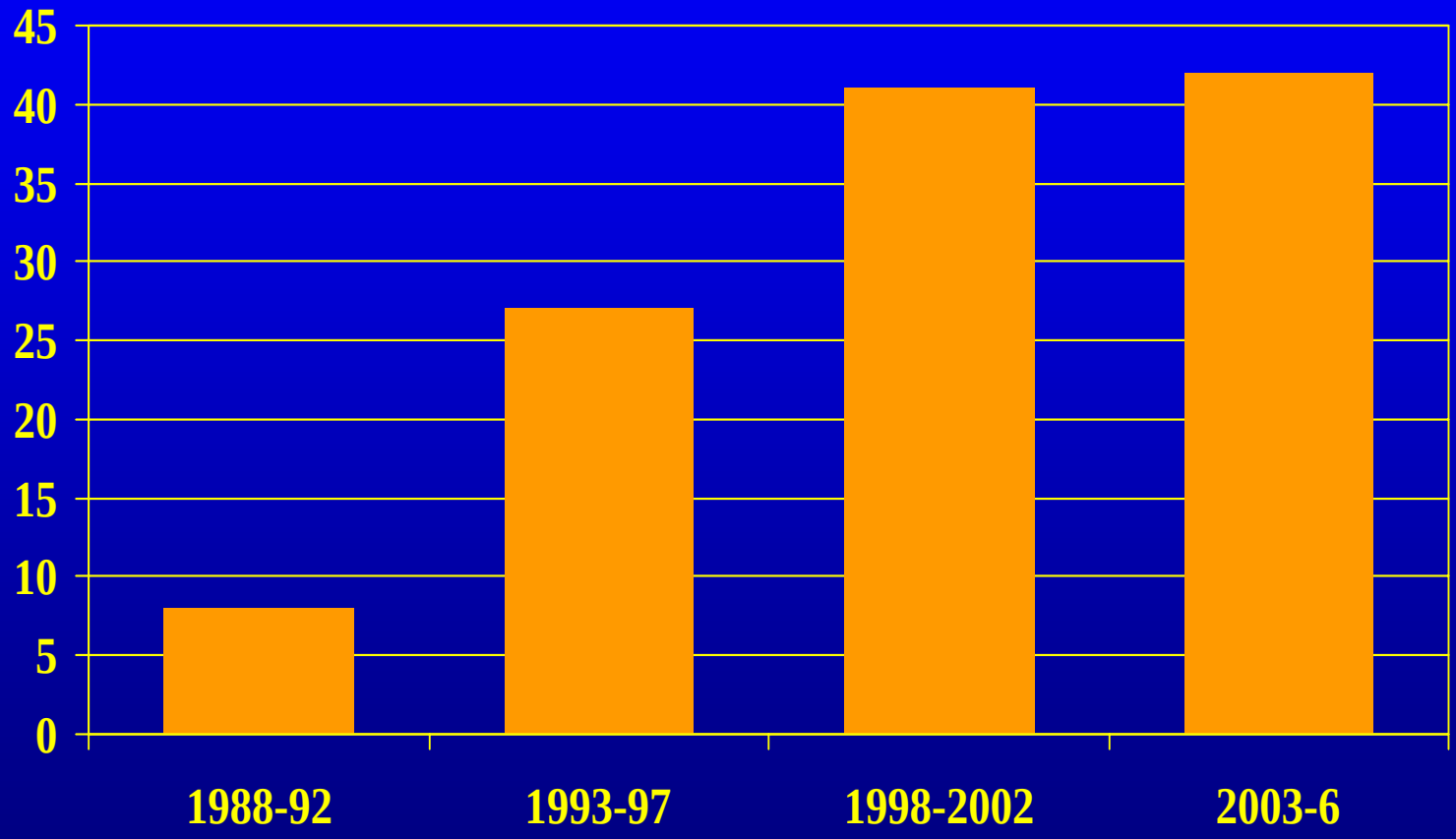
- Defined population at risk
- Quickly recognized acute illness
- Finite menu
- Local implications
- "When in doubt, throw it out"

Multi-state Scenario:

- Diffuse population at risk
- Many clusters, few outbreaks
- Difficult to define exposure(s)
  - especially "ingredients"
- Coordinate > 1 investigation
- Economic implications

Multi-state foodborne outbreaks

1988-2006

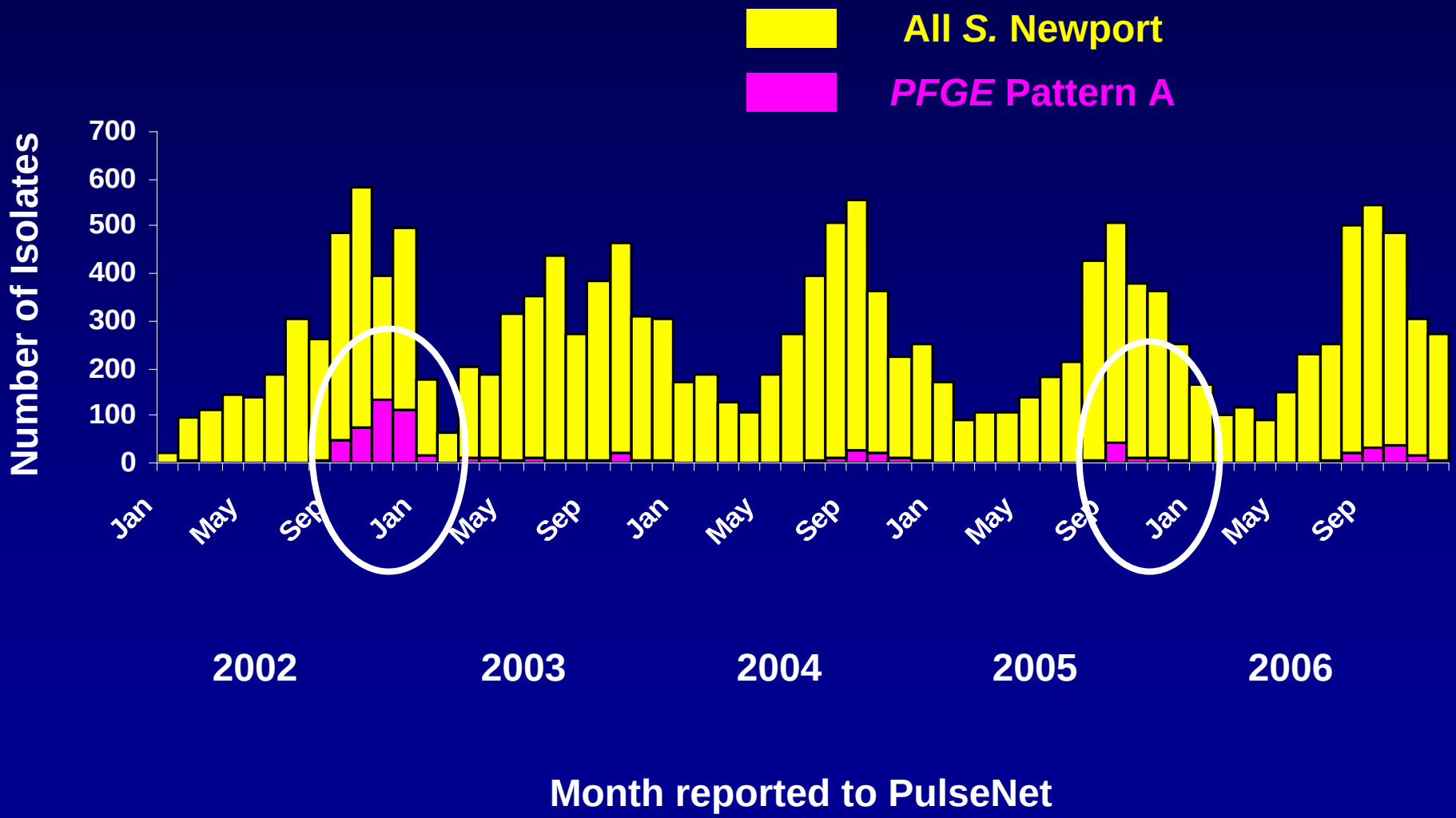


Preliminary data

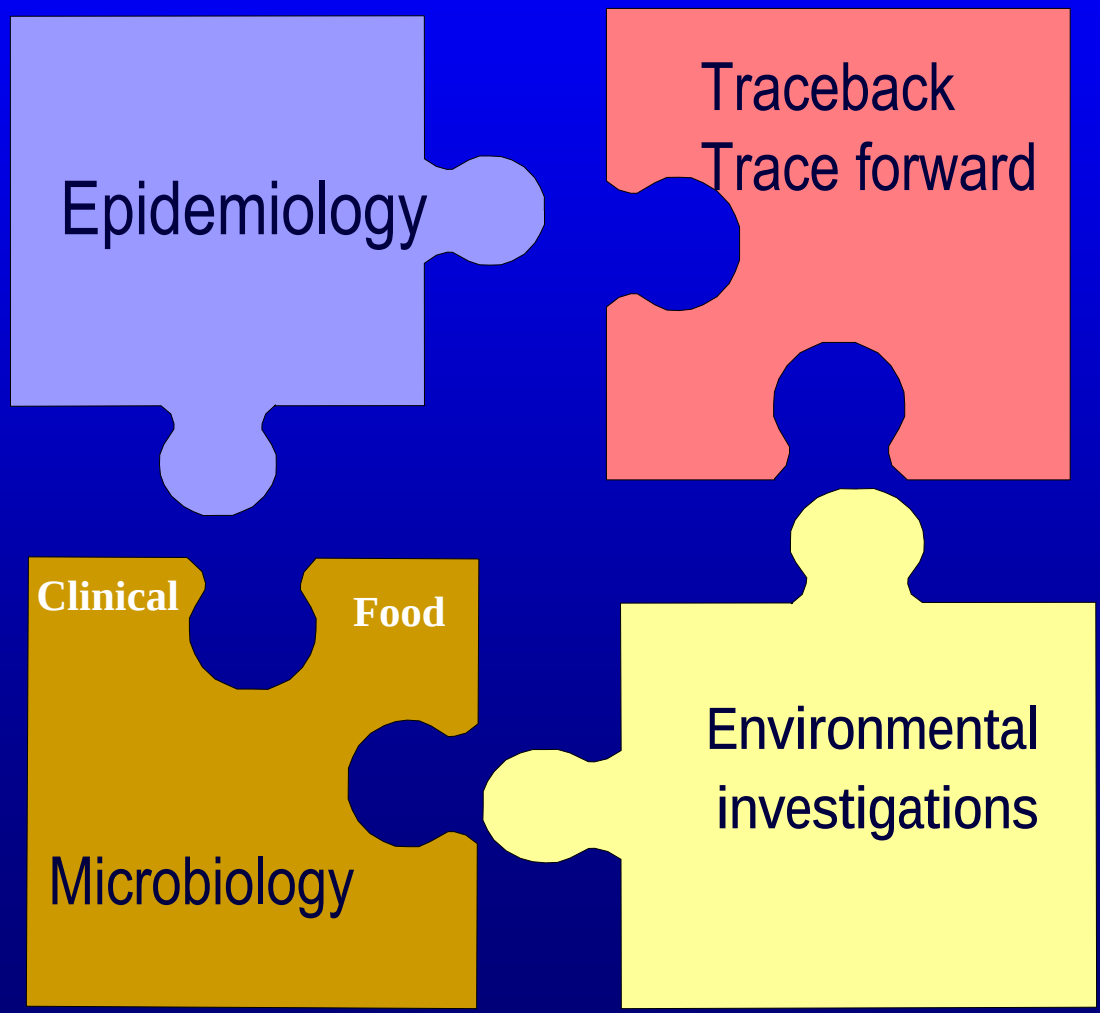
Source: CDC foodborne outbreak reporting system

defining a case vs defining exposure

Isolates of *S.* Newport Reported to PulseNet, 2002-2006



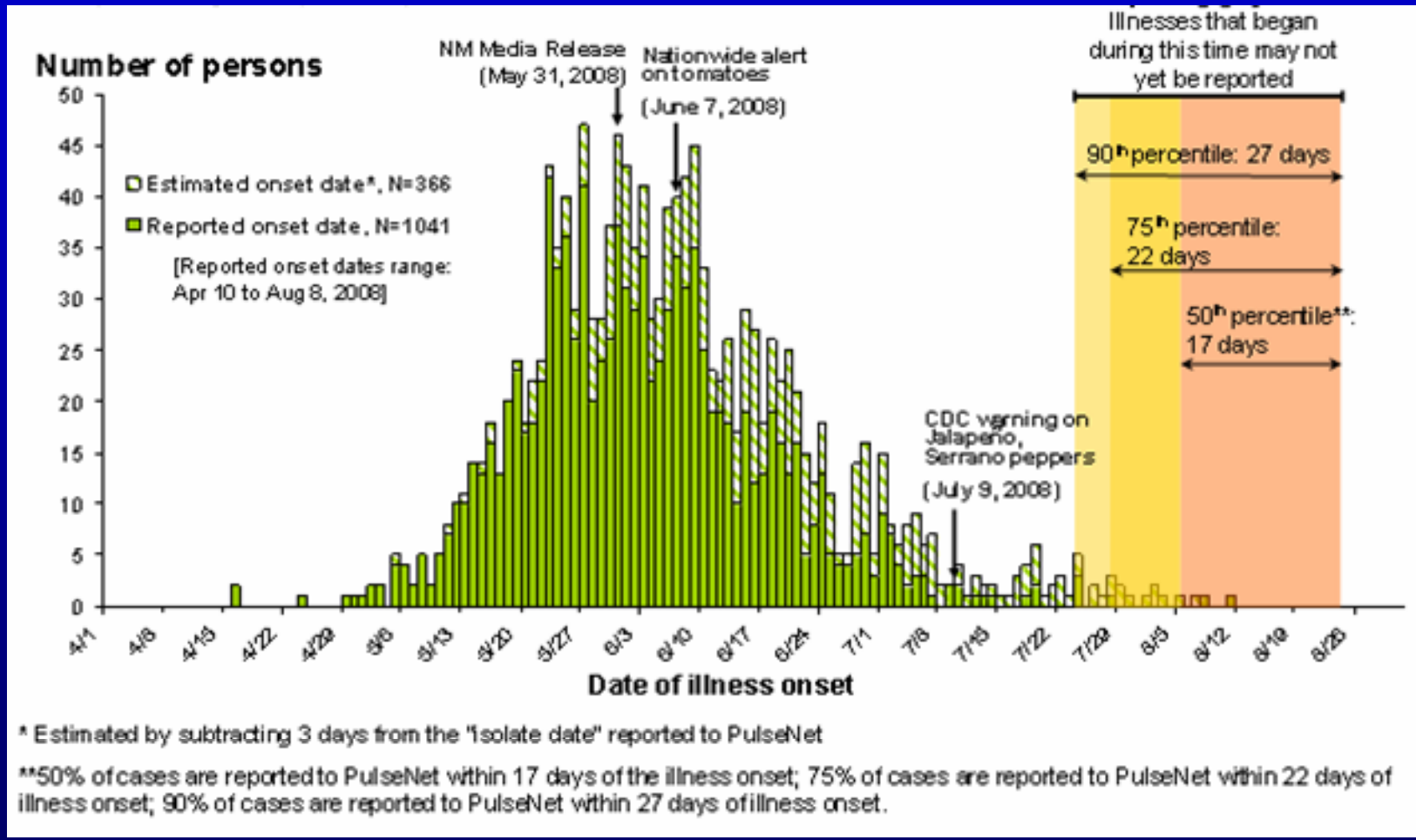
Improving epidemiologic methods:
To generate & confirm hypotheses



Improving Accuracy & Precision

- Investigation of clusters within larger outbreak very helpful.
- Use standard questions & questionnaires
- Getting all clinical isolates to Public Health labs

Multistate outbreak of *Salmonella* Saintpaul, 2008



* Estimated by subtracting 3 days from the "Isolate date" reported to PulseNet

**50% of cases are reported to PulseNet within 17 days of the illness onset; 75% of cases are reported to PulseNet within 22 days of illness onset; 90% of cases are reported to PulseNet within 27 days of illness onset.

Improving Timeliness

- Reduce time taken to interview cases & controls about exposures & product information.
- Reduce time to ship isolates from clinical to Public Health laboratories
- Reduce time taken to complete serotyping & ‘fingerprinting’ of important isolates at public health laboratories
- Electronic platform for collecting, storing, transmitting, & analyzing case information

Coordination/Communication

- Need to delineate roles & responsibilities of different agencies during outbreaks
- Need consistent messaging
  - Need to improve coordination of public communication among responding agencies & partners
- Need to manage public perception of risk
  - to motivate appropriate preventive actions
  - while minimizing needless economic disruption during & after outbreaks
- Need to create materials before an outbreak
  - that will help translate epidemiologic & microbiologic language & statistics into terms that are comprehensible to, & supported by, the media & the public

Thank you