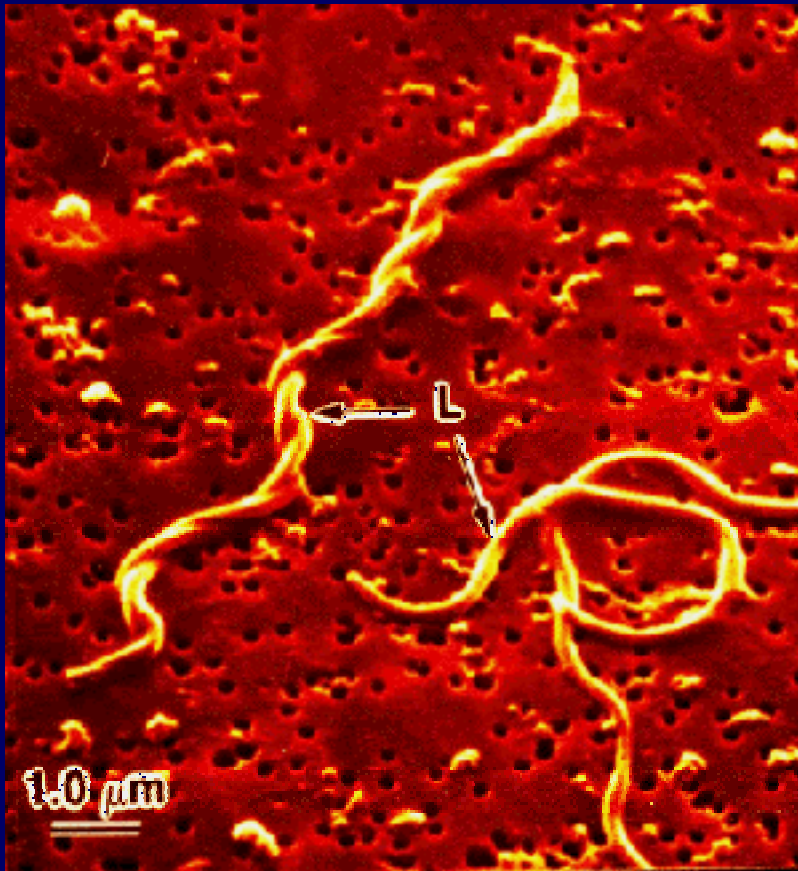


# Impact of Electronic Laboratory Reporting on Lyme Disease Surveillance Burden — New Jersey, 2001–2006

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and Senior Services



# Pathogen and Vector



*Borrelia burgdorferi*  
Courtesy NYS DOH Wadsworth Center



*Ixodes scapularis*  
Courtesy Kansas State University

# Background

- 1975 — Syndrome recognized
- 1982 — Spirochete identified
- Late manifestations incapacitating
- Notifiable disease
  - 1980 — Reportable in New Jersey
  - 1990 — Nationally notifiable

# Surveillance Case Definition

**Erythema migrans rash**

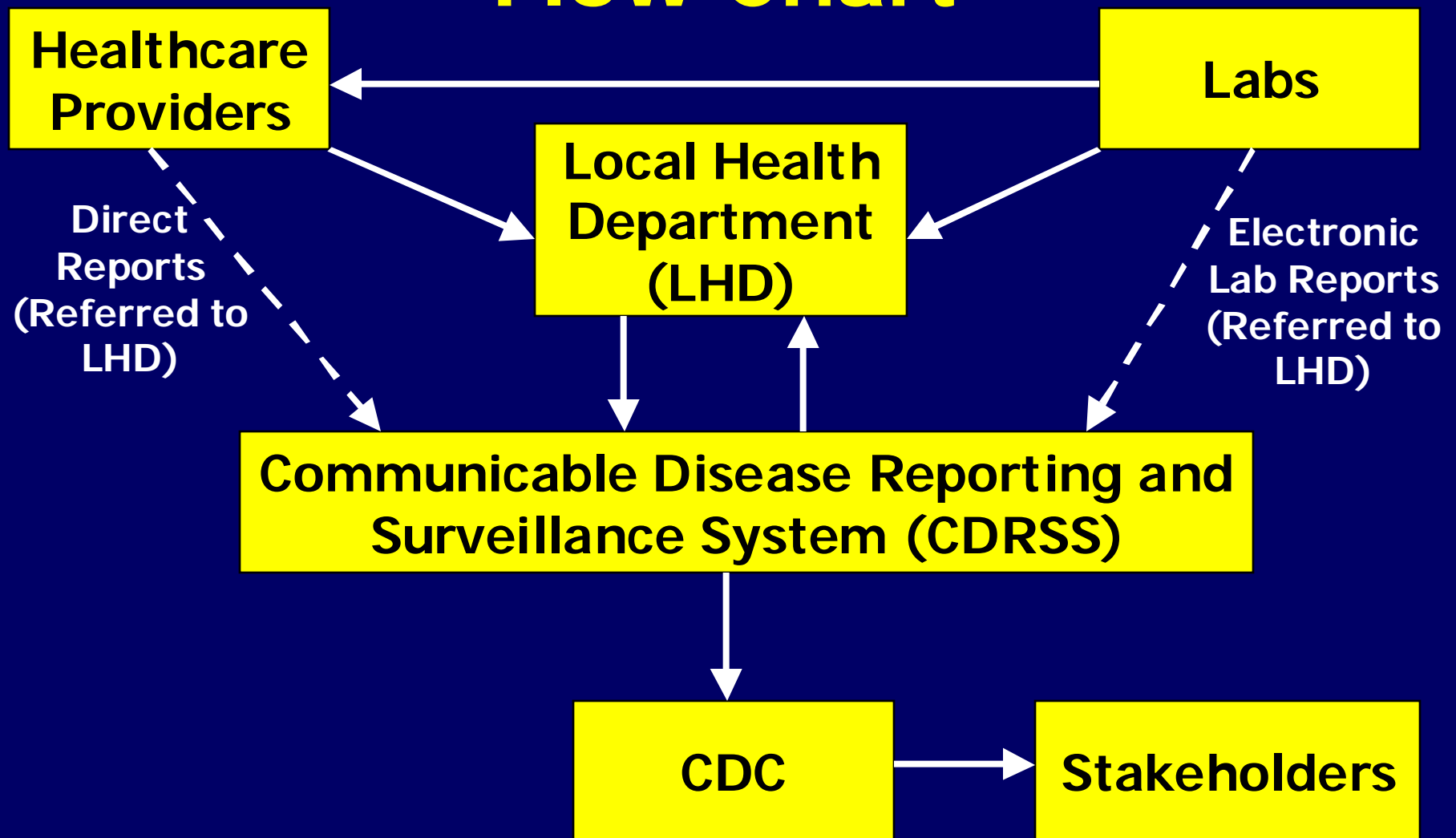
***OR***

**At least one late manifestation**

***AND***

**Laboratory confirmation of infection**

# Lyme Disease Surveillance Flow Chart



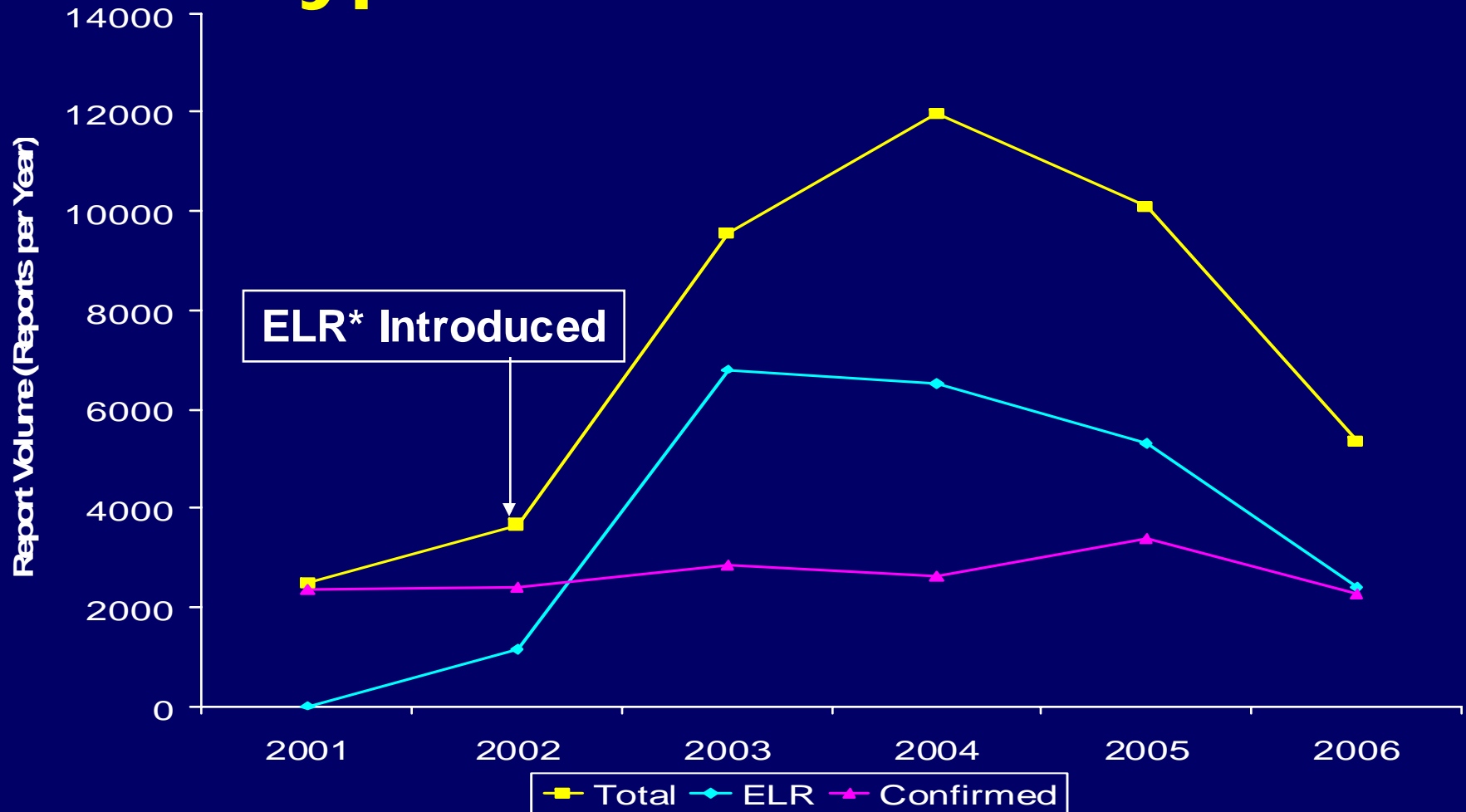
# So What's the Problem?

- 2002 — Electronic lab reporting (ELR)
- Local health departments (LHDs)
  - Major report increase
  - Volume exceeded investigative capacity
- 2006 — Surveillance system evaluation

# Objectives

- **Confirm increase in report volume**
- **Validate insufficient capacity**
- **Formulate solutions**

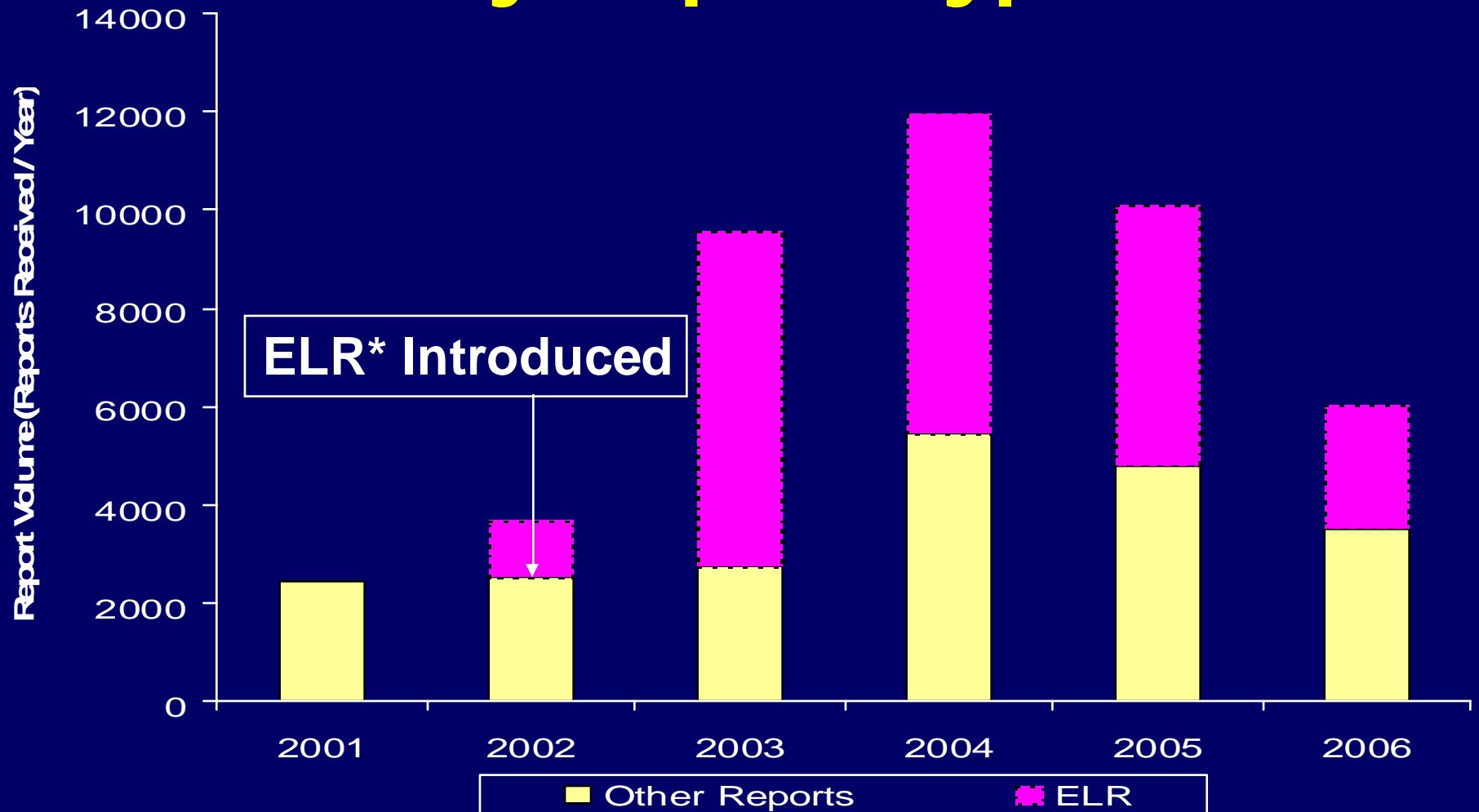
# Reporting Trends, by Report Type and Case Status



\* ELR: Electronic Laboratory Reports

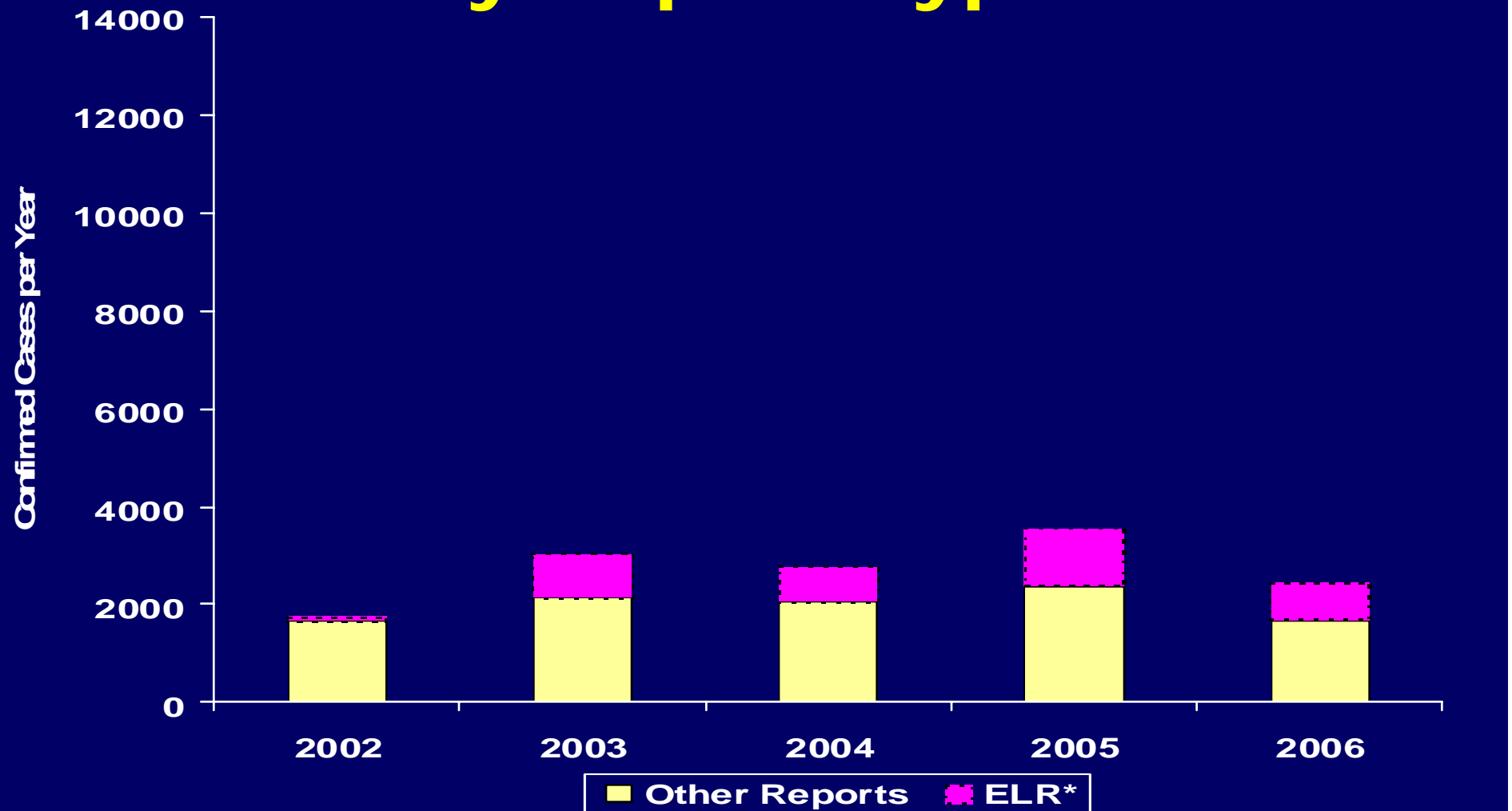


# Annual Reporting Volume, by Report Type



\* ELR: Electronic Laboratory Reports

# Annual Confirmed Cases, by Report Type



\* ELR: Electronic Laboratory Reports

# Competing LHD\* Priorities

- **Primary disease investigators**
  - >60 reportable diseases
  - Routine surveillance
  - Outbreak investigations
- **Other duties**
  - Environmental health
  - Immunization services
  - Sexually transmitted infection clinics
  - Others

\* Local Health Department

# LHD\* Investigative Personnel

- Communicable disease investigators
- Variable investigation capacity
  - Range <1 to several FTE
  - Some investigators part-time
  - Correlates with population
- Additional duties

\* Local Health Department

# Investigator Time

- **Investigation time requirement**
  - One hour of active investigation
  - <1 week–8 months total time
- **2004 — 5.75 full-time equivalents (FTE)**
- **Exceeds available investigator time**

# Increase LHD\* capacity

- Requires substantial investment
- LHDs funded by local property taxes
- Additional funding
  - Local funding unlikely
  - State funding unlikely
  - Small boost in federal funding possible

\* Local Health Department

# Drop Laboratory Reporting

- Would decrease surveillance burden
- Would decrease case finding
- ELR\* and non-ELR cases different
  - Geographic distribution
  - Seasonality
  - Might bias surveillance data

\* Electronic Laboratory Reporting

# Automated Follow-up

- **Generate automatic case report form**
  - ELR\* cases only
  - Mailed to healthcare providers
- **Only cases with forms classified**
  - No active follow-up if no response
- **Reduces surveillance burden**
  - Eliminates futile follow-up efforts
- **Potential for bias uncertain**

\* Electronic Laboratory Reporting



# New Case Definition

<http://www.cste.org/PS/2007ps/2007psfinal/ID/07-ID-11.pdf>

- **2007 — New case definition**
- **Confirmed case category similar**
  - Explicit definition of acceptable lab tests
- **Probable case category**
  - Unanticipated clinical syndromes
  - Encourages healthcare provider reporting
- **Suspect case category**
  - Tracks burden of unconfirmed lab reports

# Conclusions

- **Regulations currently under review**
- **Evaluation results to guide revisions**
- **Current system cannot be sustained**
- **Must balance costs and benefits**
- **Consider acceptability to stakeholders**

# Acknowledgments

- NJDHSS
  - L. McHugh
  - S. Brynildsen
  - C. Tan
  - F. Sorhage
  - C. Robertson
  - E. Bresnitz
- CT Dept. of Health
  - M. Cartter
- CDC
  - K. Bisgard (OWCD)
  - D. Bensyl (OWCD)
  - K. Griffith (DVBID)
  - P. Mead (DVBID)
  - H. Gould (DVBID)



*The findings and conclusions in this presentation are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention*



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