

Committee: Surveillance/Informatics

Title: Recommendations for the Implementation of Electronic Laboratory Reporting in the United States

I. Statement of the Problem:

Electronic Laboratory Reporting (ELR) is the electronic transmission from laboratories to public health of laboratory reports which identify reportable conditions. For the past several years public health surveillance experts at the state and local level have identified this as one of their top informatics priorities. The benefits of electronic reporting, including improved timeliness and completeness of reporting, reduction of data entry errors, and long-term savings to laboratories and public health programs are well-documented [1,2,3]. Development of this tool across states has been uneven. Many states have not begun to deploy ELR within their jurisdictions, or have implemented ELR only from national laboratories. Those states that have developed ELR interfaces find their ELR resources critically strained and overburdened. The shortfalls in ELR deployment require strategic planning, appropriate staffing, hardware and software, and access to technical consultants. Strategic options for ELR deployment need to be developed, including incorporation of ELR functionality within laboratory information systems (LIS) by LIS vendors, identification of third parties who can assist by providing ELR as a service, and identification of models for accomplishing ELR at laboratory and healthcare facilities without depending on functionality within the LIS. State and local public health agencies require dedicated staff to deploy ELR at the laboratories within their jurisdictions. Most jurisdictions have little or no dedicated ELR workforce. Such staff is needed for outreach to commercial and clinical laboratories, individual hospitals, health care systems, and health information exchanges (HIEs), all of which may have laboratory tests which need to be reported to public health.

To insure interoperability, laboratories will need to comply with published standards for the formatting and transmission of laboratory data including the conversion of local to standard codes. State and local public health systems must develop and maintain interfaces to both securely receive data, and to translate and present incoming data to their workforce responsible for detection and control of communicable diseases.

Technological solutions exist to address many of these challenges, but strategic planning and resources are needed for implementation and maintenance.

State and local public health informatics/epidemiology staff together with representatives from national laboratories and CDC have participated in the national ELR teleconference working group for more than seven years. This group comprises the majority of the nation's personnel resources for ELR, and as such needs to play a lead role in the national decision making in this arena.

II. Statement of the desired action(s) to be taken:

- (1) That CDC and CSTE convene an ELR taskforce*, to include, at a minimum, representatives from the state and local public health ELR working group, representatives from national laboratories and LIS vendors, and CDC stakeholders to address policy issues and implementation of ELR, and that this taskforce meet at least annually;
- (2) That CDC fund a minimum of two fulltime positions in each state/funded jurisdiction (*e.g.*, large metropolitan areas with their own ELR systems) to support ELR;
- (3) That CDC and HHS with the advice and guidance of the national ELR taskforce make provision for the establishment and funding of hardware and software to accomplish ELR.

*The proposed task force would work to:

- Determine national priorities for continued establishment and support of public health ELR systems;
- Identify challenges and obstacles to the implementation of these systems and propose solutions for consideration and funding;
- Help to prioritize the creation of functional ELR from all public health laboratories;
- Assist national laboratories with resolution of ELR problems; and,
- Promote the inclusion of ELR capabilities in vendor LIMS/LIS software, and investigate related ideas such as certification by a Recognized Certification Body (RCB), such as CCHIT.

III. Public Health Impact:

Benefits

- Improvement in ELR quality and coverage nationally;
- Identification and resolution of obstacles that have delayed rapid deployment of ELR;
- The potential for enhanced surveillance to include influenza and antibiotic susceptibilities for organisms of public health importance;
- Promote sharing of best-practices among jurisdictions to minimize duplicative efforts and to extract maximum benefit from novel applications and tools.
- Promote innovation, collaboration, and strategy-development by providing assistance to the current under-resourced ELR workforce.
- The ability to identify and track healthcare-associated infections through laboratory surveillance.

Costs

- Additional federal funding for a minimum of two fulltime staff per state.
- Federal funding for support of the proposed ELR Task Force
- Federal funding for the hardware/software/contractor costs to deploy ELR

IV. References

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2. Panackal AA, M'ikanatha NM, Tsui FC, McMahon J, Wagner MM, Dixon BW, et al. Automatic electronic laboratory-based reporting of notifiable infectious diseases at a large health system. Emerg Infect Dis. 2002; 8:685-91.
3. Overhage, JM, Grannis, S, McDonald, CJ. A Comparison of the Completeness and Timeliness of Automated Electronic Laboratory Reporting and Spontaneous Reporting of Notifiable Conditions. AJPH. 2008; 98(2):344-350.

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