

Item #	Function	Step	Progress	Level of Effort (Low, Medium, High)	Frequency	Participants	Recommended	Optional	Deliverables	Description
Planning 1.0										
1.1.0	Obtain executive sponsorship (champion)						X			Project champion - this role may differ from jurisdiction to jurisdiction and may be more than one single sponsor / champion.
1.1.1		Define State Law/Regulation/Policy approach for ELR			one time	IT State Lab NEDSS / ELR Coordinator Epidemiologist Informaticist Outside PH partners	X		State and jurisdictional laws and / or regulations	Define, document and obtain necessary approval, sign-off for laws, regulations, and policy for implementation and maintenance of ELR.
1.1.2		Define Business Need			one time	NEDSS / ELR Coordinator Epidemiologist Informaticist	X		Project scope and business justification for ELR	Include high level alternatives analysis and feasibility study, define ROI, describe stakeholders, conduct cost benefits analysis, identify issues and risks and constraints.
1.1.3		Assessing Current Status			one time	IT State Lab & other labs NEDSS / ELR Coordinator Epidemiologist Informaticist	X		Document of current status and background	Analyze and review the current system to determine if system performance (data flow, reporting, alerting, hardware and software systems) are performing as expected and results are as expected. This step is intended to describe the current state of the "system", either paper or electronic, and address gaps.
1.1.4		Assess Current Business Need			one time	IT State Lab NEDSS / ELR Coordinator Epidemiologist Informaticist	X		Document of current business need	Based on on programmatic needs determine what is required to address these needs. This includes an understanding of where trading partners are in their capability.
1.1.5		Define Programmatic and IT System Scope			one time	IT State Lab NEDSS / ELR Coordinator Epidemiologist Informaticist	X		Detailed Programmatic and IT business scope	Describe the scope of the entire ELR System including the data flow from trading partners, data routing to surveillance systems. Include planning to manage process and paradigm change. This is a programmatic scope.
1.1.6		Identify and Secure Funding Sources			on going	State Lab NEDSS / ELR Coordinator State Epidemiologist / Epi Program	X		Detailed summary of all available funding sources	Identify and secure financial support to execute scope and objectives. Investigate and include all potential funding sources , grants and programs.
1.1.7		Project Charter			One time	NEDSS / ELR Coordinator Informaticist	X		Project Charter	Includes business need, alternative analysis, change management, and resource requirements.
1.2.0	Update policy and law									
1.2.1		Define data elements and reconcile data elements from multiple sources		Medium	One time	Program Epidemiologists NEDSS / ELR Coordinator, IT			Reconcile forms.	Reviewing the content of the report forms including the data elements to serve as a basis for fields to be included in an electronic exchange. Paper forms may be used as a back-up, web based entry may still exist for smaller sites

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1.2.2		Define what to report, who, when, and how			One time	Program Epidemiologists NEDSS / ELR Coordinator, State legal counsel, IT, PH Lab	X		List of what to report, who receives the reported items, and when and how the data are sent to public health.	For each jurisdiction - based on laboratory tests or results determine if this qualifies as a condition to report to public health. This must also factor in reporting requirements and reporting criteria specific to the jurisdiction. (e.g., Hepatitis A IgM positive). Further specificity by public health may indicate when a test result should be received (or sent) within a given time frame.
1.2.3		Create / update MOU or trading partner agreement			Periodic	Program Epidemiologists NEDSS / ELR Coordinator, State legal counsel, IT		X	MOU and / or trading partner agreement.	Create standard template for use in engaging trading partners and specify data transport method
1.3.0	Define Scope of IT System Development / Enhancements									
1.3.1		Engage trading partners			One time	Epidemiologist Program Management IT, ELR Coordinator	X		List of eligible trading partners	Determine the strategy for engaging data trading partners, surveillance programs and IT programs. Determine appropriate strategies for both internal and external data trading partners.
1.3.2		Determine Scope of IT System			One time	IT (business analyst) NEDSS Coord. Epidemiologist Informaticist ELR Coordinator	X		IT system scope	Describe the vision and scope of the systems work that needs to be done. This should include the business justification for the system, high level business requirements and functional requirements and a baseline alternatives analysis which supports the decision to buy or build the IT system.
1.3.3		Build IT Project Plan			One time	Project manager IT NEDSS / ELR Coordinator Informaticist Epidemiologist	X		IT Project Plan	Develop project management plan and other planning documents; Identify required resources for implementation of IT infrastructure to support ELR.
1.3.4		Develop / Update Technical Implementation Guide for Trading Partners			One Time with periodic updates	IT NEDSS / ELR Coord. Epidemiologist Informaticist	X		Technical implementation guide for Trading Partners	Provide guidelines for secure transport, message format, vocabulary usage and required data elements. Clearly identify reporting requirements.
1.3.5		Define continuity of operations			One Time with periodic updates	Epidemiologist Program Management IT ELR Coordinator Informaticist Trading partners Incident commanders	X		Disaster recovery plan	Ensure that ELR is able to continue in the event of loss of key personnel or loss of infrastructure (business continuity), including disaster recovery. Includes disaster recovery and may be part of the overall disaster recovery plan.
1.3.6		Define Surge Capacity Strategy (On-boarding strategy)				Epidemiologist Program Management IT NEDSS / ELR Coordinator		X	Surge capacity / on-boarding strategy	The strategy for supporting a dramatic increase in requests to support ELR due to recent public events or recent policy (e.g., Meaningful Use) and / or to support the increase in number of data trading partners.

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1.4.0	Define Training Needs									
1.4.1		Assess PH staff training needs and and plan training				Epidemiologist Program Management IT NEDSS / ELR Coordinator Informaticist	X		Public Health Staff training needs assessment / training materials	Identify/Assess training for IT personnel, Disease Intervention Specialist, Epidemiologists. "What are the training needs". Include training on standards, vocabulary, new systems being implemented and new information flows.
1.4.2		Design and Develop Trading Partner / Partner Staff training				Epidemiologist Program Management IT NEDSS / ELR Coordinator Infection Control	X		Trading Partner Training Plan / Materials	Identify/Assess training for Reporters (e.g., Hospital, Lab, and Physician). "What are the training needs". May consist of communications rather than training. Should include orientation or kick-off process / event for trading partners.
1.5.0	Communications						X		Communications package	This is internal and external communications with trading partners, with program areas, with users about training needs, with trading partners, with leadership. May also be with end users on what
1.6.0	Specify Laboratory Reporting Criteria				On going	State/Program Epidemiologist NEDSS / ELR Coord.	X		Laboratory Reporting Criteria Document	What tests should be reported for each organism, reference ranges, business rules. May include choosing which LOINC codes are acceptable, identifying specific diseases.
Engage 2.0										
2.1.0	Manage Trading Partners									
2.1.1		Identify, assess capability and Prioritize Trading Partners			On going	State/Program Epidemiologist NEDSS / ELR Coord. Informaticist IT	X		Proritized list of trading partners	Identify who the potential trading partners are, their readiness, coverage provided, and willingness to engage. Determine prioritization of trading partners who are ready for ELR and prioritize implementation based on factors such as: geographic coverage, population coverage, existing infrastructure and technology capability
2.1.2		Establish trading partner agreements				State/Program Epidemiologist NEDSS / ELR Coord. State Legal Counsel Trading Partners		X	Trading Partner Agreement	Define and document detailed agreements for trading partners regarding sending data to public health including parameters regarding all interactions between the trading partners and public health facilities.
2.1.3		Communicate reporting requirements			One time and then periodic as needed when changes occur	State/Program Epidemiologist NEDSS / ELR Coord. IT	X		Reporting requirements document	Communicate what will be reported and frequency / timeline; Communicate what data elements will be reported; provide IG and other implementation-related references to trading partners.
2.1.4		Assist Trading Partners to Map Data			One time and then periodic as needed when changes occur	State/Program Epidemiologist NEDSS / ELR Coord. IT Trading Partners		X	Data mapping guidelines and direction	Public health to work with trading partners if necessary to ensure appropriate mapping of data to message content and format standards. This could be performed by other programs.
2.2.0	Conduct Training									
2.2.1		Conduct PH Staff training			Periodic	Epidemiologist Program Management IT NEDSS / ELR Coordinator Informaticist	X		Implement public health trading plan	Provide training for IT personnel, Disease Intervention Specialist, Epidemiologists. "What are the training needs"
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Resource and Capacity	Assessment Workgroup	Conduct Trading Partner Staff Training			One time and then periodic as needed when changes occur	Epidemiologist Program Management IT NEDSS / ELR Coordinator	X		Implement trading partner training plan	Provide training for Reporters (e.g., Hospital, Lab, and Physician). "What are the training needs?" ELR Task Force
2.2.2										
2.3.0	IT System Development and Enhancement									
2.3.1		Finalize system requirements				Project manager IT	X		IT System requirements document	Gather requirements for software, hardware, security and maintenance for IT system to support ELR.
2.3.2		Develop Design Document				Project manager IT NEDSS / ELR Coordinator Informaticist	X		IT System design document	Creating a detailed systems design document that addresses the requirements defined for the surveillance system.
2.3.3		Develop System				Project manager IT	X		Develop IT system	Determine all IT requirements for developing IT infrastructure to support ELR system.
2.3.4		Integrate and Test System, including UA testing				Project manager IT NEDSS / ELR Coordinator Informaticist	X		Test IT system (testing, test results, implement fixes, etc.)	Execute test and QA plans to demonstrate that developed system conforms to requirements as specified in the Functional Requirements Documents.
2.3.5		Implement System				Project manager IT NEDSS / ELR Coordinator Informaticist	X		Implement IT system	Transition ELR system into production.
Connect and Test ELR System 3.0										
3.1.0	Initiate ELR implementation with trading partners (aka data provider)					Project manager IT NEDSS / ELR Coord. Epidemiologist				Check with trading partner to determine if their system is in place and they are able to send a message that complies with the implementation guide. Message should be compliant with structure as well as content requirements for public health.
3.1.1		Trading partner system (e.g., LIMS) able to produce standards-based structured message with appropriately Confirm Connectivity			Varies by jurisdiction and trading partner	Project manager IT NEDSS / ELR Coord. Epidemiologist, Trading Partners	X		Summary of trading partner status	Assess if trading partner is able to construct an appropriate standards-based message using the correct terminology and vocabulary
3.1.2		Validate the message				Trading Partner IT Health Department IT Project manager IT, Trading partners NEDSS / ELR Coord. Epidemiologist	X		Confirm network connectivity	Confirm that health department can receive message using transport method used by trading partner.
3.1.3		Test Routing and (transformation) of Message to appropriate recipients				Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Message testing and validation	Test and confirm message structure is correct, verify that content is correct.
3.1.4		Test consumption of message				Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Test message routing	Test and confirm transformation of message is as expected, this may include transformation and / or routing of data to all recipients.
3.1.5		Test DR system and process				Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Test consumption of message	Ensure successful data storage and usability of stored data.
3.1.6						Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Disaster recovery test	Ensure the disaster recovery system is functioning as expected.
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Validate 4.0										

Resource and Capacity	Validate content and structure of message					Project manager IT NEDSS / ELR Coord.				CSTE/CDC ELR Task Force
4.1.0										
4.1.1		Compare paper reports and			One time per trading partner	Project manager IT	X		Comparison of paper and electronic (ELR) messages	Verify that reports and content received by paper are also included in electronic form. Ensure that codes and message tables are updated on a regular basis. This step is intended to check the
4.1.2		Validate analysis and reporting of data in message				Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Message data validation	Verify that analyzed data shows the expected results and that reports include expected information. This step validates the message content and appropriate business rules for each condition received by ELR.
Operate 5.0										
5.1.0	Move data feed to production	Move data feeds to production					X			Partner / provider feeds - move to production
5.2.0	Alerting									
5.2.1		Distribute surveillance guidelines specific				Project manager IT NEDSS / ELR Coord.	X		Surveillance guidelines and reporting requirements	Send ELR guidelines / specific criteria for alerts and alerting to sub-jurisdictions, trading partners.
5.2.2		Receive and manage lab reports of an agent associated with etiology of an immediately reportable condition				Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Plan to manage lab results for an agent associated with etiology of an immediately reportable condition	Ensure that the right program and right staff receive an alert from their surveillance system that an agent associated with etiology of an immediately reportable condition is being reported
5.3.0	Manage IT Systems									
5.3.1		Maintain hardware			Ongoing	Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Hardware maintenance plan and schedule	Describe and define the maintenance necessary to support the system.
5.3.2		Maintain software and operating system			Ongoing	Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Software and operating system maintenance plan and schedule	Describe and define the software and operating system maintenance necessary to support the system
5.3.3		Monitor data flows			Ongoing	Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Data flow monitoring plan / process	Monitor data messaging from all trading partners is as expected and ensure timeliness of reports
5.3.4		Analyze data and generate reports			Ongoing	Project manager IT NEDSS / ELR Coord. Epidemiologist	X		Data analysis and reports	Ensure ability to analyze and report on ELR data to support disease surveillance
Process Improvement and Growth 6.0										
6.1.0	Conduct operational analysis					Epidemiologist Program Management IT				Analyze and review the entire ELR system to determine if system performance (message flow, reporting, alerting, hardware and software systems) are performing as expected and results are as expected.
6.1.1		Improve IT infrastructure			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator		X	IT infrastructure review / improvement plan / process	Based on results from ongoing operational analysis, determine if improvements are necessary for the IT infrastructure (to either enhance or correct issues with the ELR system).

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6.1.2		Identify additional training needs			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator		X	Periodic training needs assessment	Determine if additional training needs exist and how define a strategy on how to meet those needs.
6.1.3		Provide Ongoing Training			As needed and as possible	Epidemiologist Program Management IT		X	Periodic ongoing training plan	Provide training as needed to continue support of the ELR system and provide trained staff (including additional and / or back staff). This includes communicating changes in ELR functionality (e.g., viewing, managing, printing) with end-users
6.1.4		Improve communication			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator		X	Communications review / analysis and improvement plan	Provide communication updates regarding overall improvement of process and cost / time savings (if applicable) resulting from the implementation of the ELR system.
6.1.5		Streamline processes			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator		X	Process improvement analysis and plan	Analyze business and technical process and perform process improvement if necessary
6.1.6		Update planning documents			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator		X	Planning document review and updating process	Ensure ongoing process improvement plans are maintained and updated as needed to support active ELR system.
6.1.7		Develop methods to manage process and paradigm change			One time	Epidemiologist Program Management IT ELR Coordinator		X	Compilation of change management strategies	Strategies to manage the communication of business process changes - Shared vision, mental models should be developed. Strategy examples: How will resistance to ELR be handled (e.g., locals who are used to paper labs)? How do we obtain buy-in from ELR data users? What can the agency do to ensure entities / persons impacted by process changes are prepared and understand their role in the bigger picture.
6.2.0	Supporting Ongoing Changes									
6.2.1		Assess changes to reportable conditions list			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator	X		Reportable conditions list monitoring and updating plan	Continuously monitor and determine impact of changes made to reportable condition list or associated criteria or reporting requirements.
6.2.2		Assess impact of changes to standards			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator	X		Change review and assessment plan for standards	Determine impact of changes to standards on operations
6.2.3		Assess impact of change to trading partner's systems			As needed and as possible	Epidemiologist Program Management IT ELR Coordinator	X		Change review and assessment plan for trading partner systems	Determine how changes to the trading partners systems may impact agency operations
6.2.4		Assess impact of change to operating systems / system software			As needed and as possible		X		Change review and assessment plan for IT systems	Determine how changes will affect the operating systems and software of the IT system.
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Resource and Capacity	Assessment Workgroup	Assess impact of change to message transport mechanism			As needed and as possible		X	Change review and assessment plan for message transport systems	Determine how changes will affect the message transport system. CSTE/CDC ELR Task Force
6.2.5									
6.3.0	Implement and evaluate metrics (assess ELR coverage)					Epidemiologists NEDSS / ELR Coord.			
6.3.1		Assess percent of coverage by geography, by population, by conditions reported			Periodic	Epidemiologists NEDSS / ELR Coord.	X	Report on percentage of ELR coverage	* The percent of reportable conditions, including infectious and non-infectious, that are received from reporting laboratories. The percent of conditions reported by ELR is > 50% . Note: metrics are after split of message containing multiple metric items.
6.3.2		Percent of labs (e.g., hospital, private) sending standards-based ELR			Periodic	Epidemiologists NEDSS / ELR Coord.	X	Report on percentage of labs sending standards-based ELR	Assess percentage of public and private labs sending standards based ELR lab.
6.3.3		Assess percent of program area surveillance systems receiving and consuming ELR			Periodic	Epidemiologists NEDSS / ELR Coord.	X	Report on percentage of area surveillance systems receiving an consuming ELR	Assess percentage of program area surveillance systems receiving and consuming ELR data.
6.3.4		Assess timeliness of reporting			Periodic		X	Report on timeliness of reporting	Determine timeliness of reporting (using appropriate baseline measurement - which may differ from jurisdiction to jurisdiction)
6.3.5		Assess completeness of reporting			Periodic		X	Report on completeness of reporting	Analyze and determine completeness of reporting (using appropriate baseline measurement).