

2007 National Electronic Laboratory Reporting (ELR) Snapshot Survey

Summary of Results

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Interpretation

Survey questions are listed in numerical order, each followed by data presentation. In some instances, the survey questions are abbreviated or slightly changed for readability in this summary context. The author has appended notes to some of the tables and graphs to enhance interpretation of data.

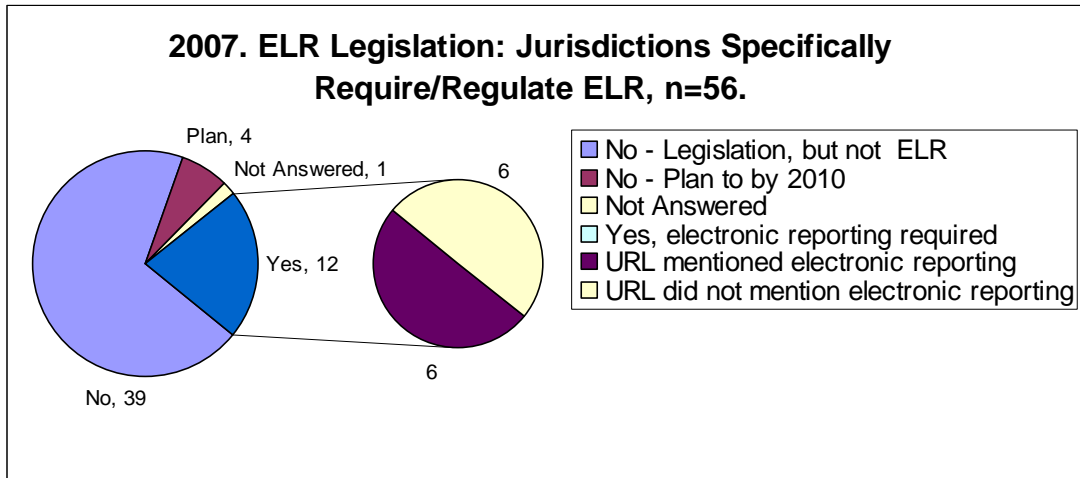
The 2007 survey consists of data gathered from:

- Each of the 50 states in the United States
- Puerto Rico
- Five US Metropolitan Areas (alphabetically, by state): Los Angeles, CA; Denver, CO; Chicago, IL; Indianapolis, IN; New York City, NY.

The final page of this report acknowledges the 18 members of the 2007 ELR Survey Editorial Board.

SECTION: STATE AND SCOPE OF ELR

2 Does your state/jurisdiction have legislation specifically requiring/regulating electronic lab reporting?

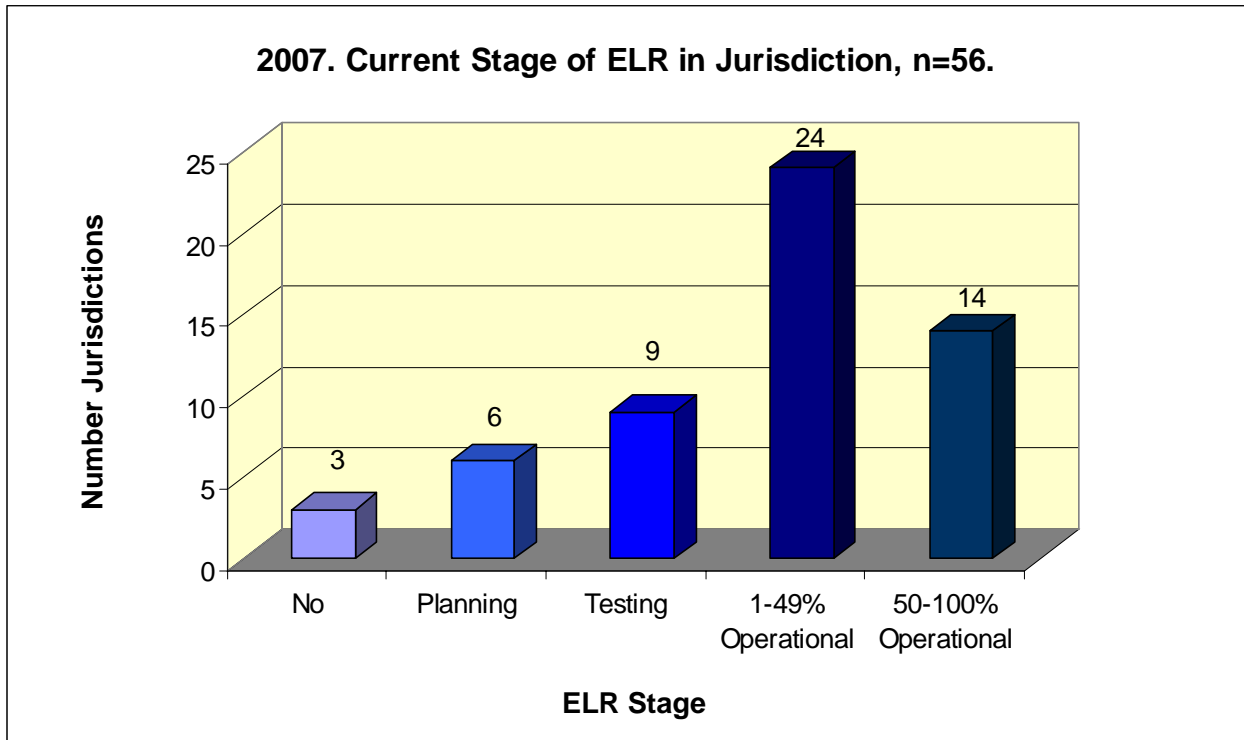


[Interpretive Note: Although 12 jurisdictions indicated they had legislation requiring/regulating ELR, upon review of the provided URLs, six did not have any apparent mention of electronic reporting.]

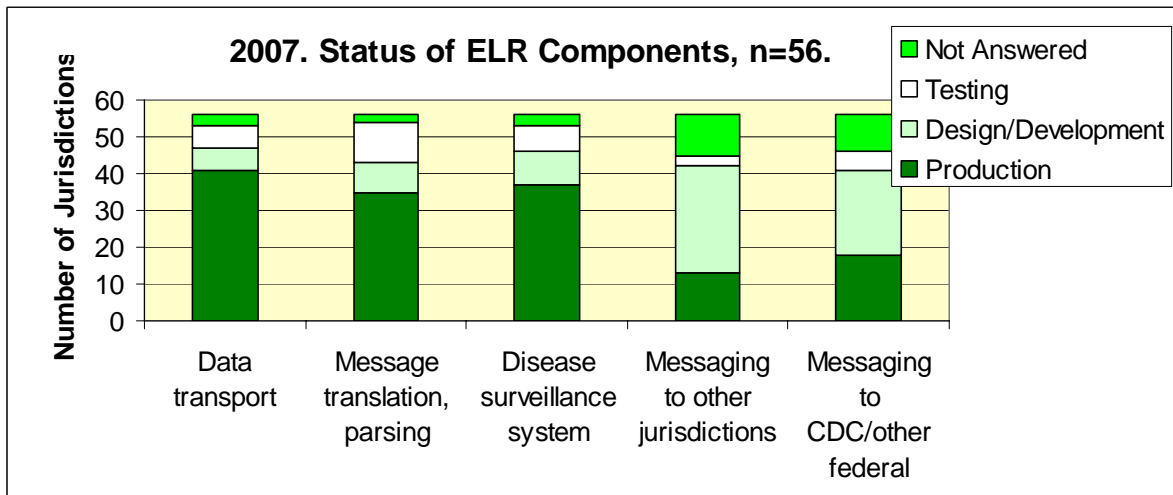
3 If legislative information is posted on a website or otherwise available for review, please list the URL or other access information:

2007. Jurisdictions Providing URLs Containing Direct Reference To Electronic Reporting.	
Conn.	http://www.ct.gov/dph/lib/dph/infectious_diseases/pdf_forms_/vol27no1.pdf
Fla.	http://www.doh.state.fl.us/Disease_ctrl/epi/Epi_Updates/1999/rule98finadop.html
Ind.	http://www.in.gov/isdh/publications/comm_dis_rule.pdf
N.C.	http://reports.oah.state.nc.us/ncac/title%2010a%20-%20health%20and%20human%20services/chapter%2041%20-%20epidemiology%20health/subchapter%20a/subchapter%20a%20rules.pdf
N.M.	http://www.nmcpr.state.nm.us/nmac/parts/title07/07.004.0003.htm
Va.	http://www.vahealth.org/leadsafe/documents/11062006/12_VAC_5-120.pdf

4 What is the current stage of ELR for your jurisdiction?

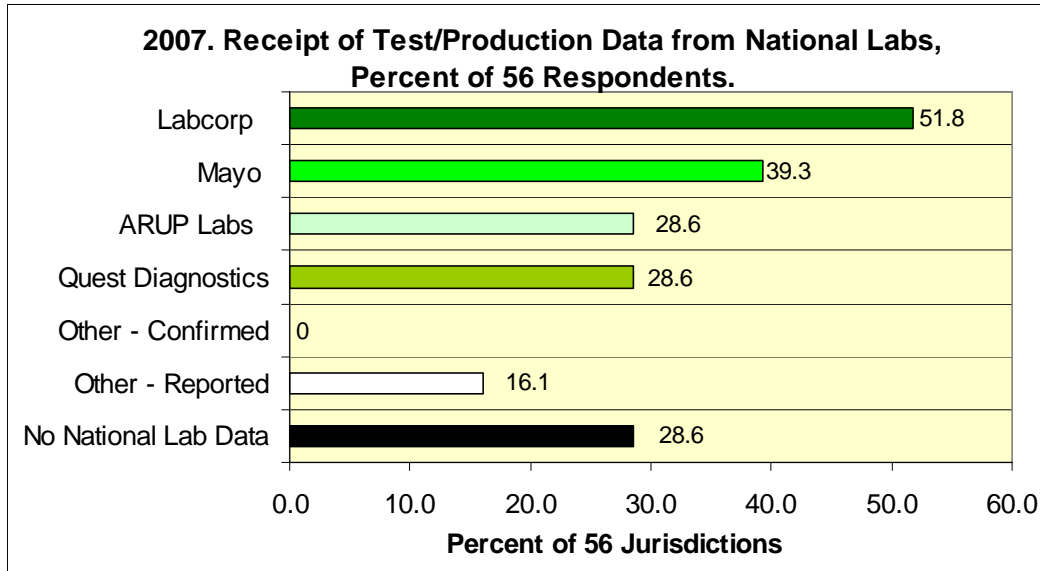


5 Specifically, what is the status of the individual components of ELR in your jurisdiction?

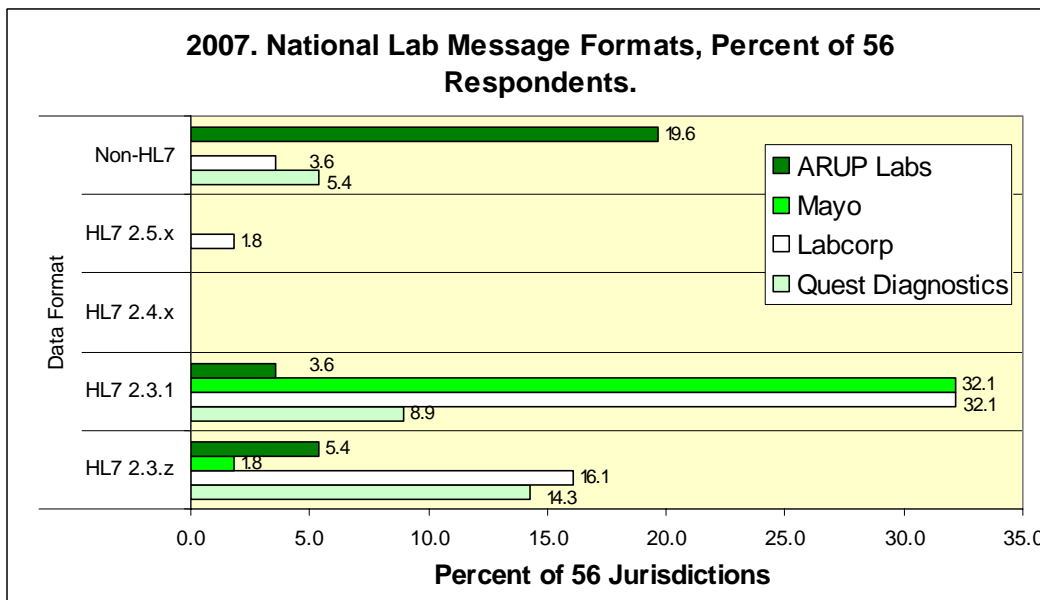


SECTION: ELR DATA SOURCES

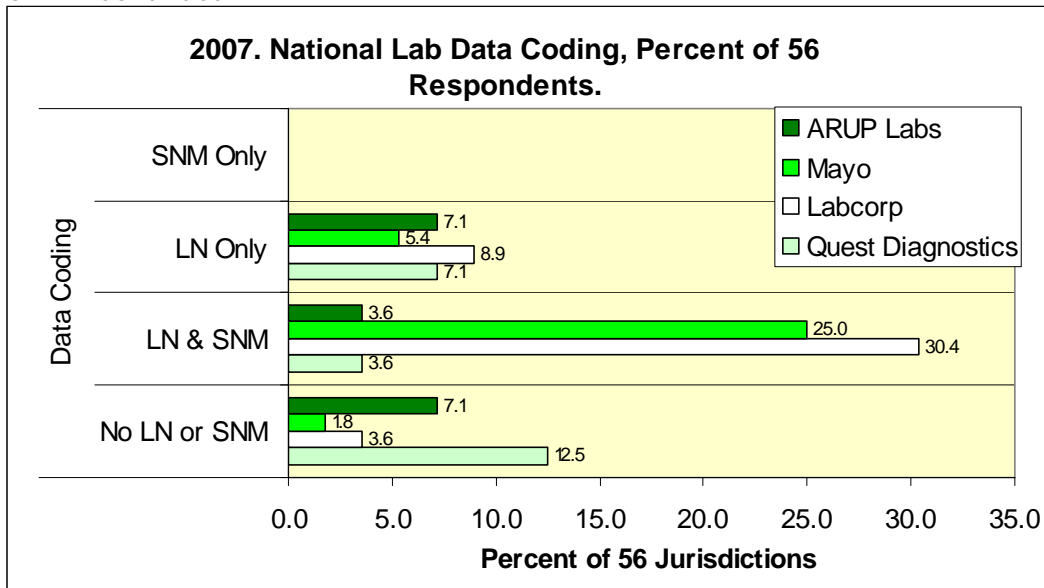
6 Reportable lab result disease data are being received electronically in TEST or PRODUCTION from which national labs. Also indicate format and coding.



[Interpretive Note: While some jurisdictions indicated receipt of data from “Other” national laboratories, the instances cited were not actual examples of national labs but instead regional or local laboratories such as state public health labs. Therefore I created the categories of “Other – Confirmed” and “Other – Reported”.]

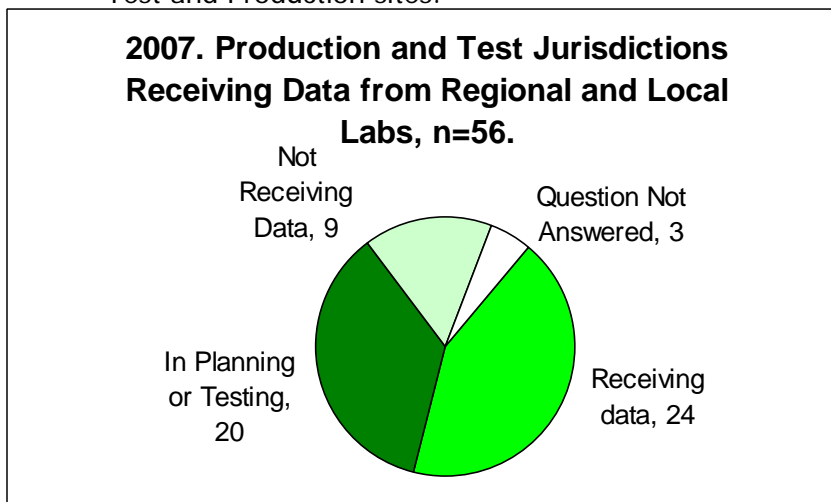


6 Continued.



[Interpretive Note:
 LN = LOINC® - Logical Observation Identifier Names and Codes
 SNM = SNOMED -Systematized Nomenclature of Medicine]

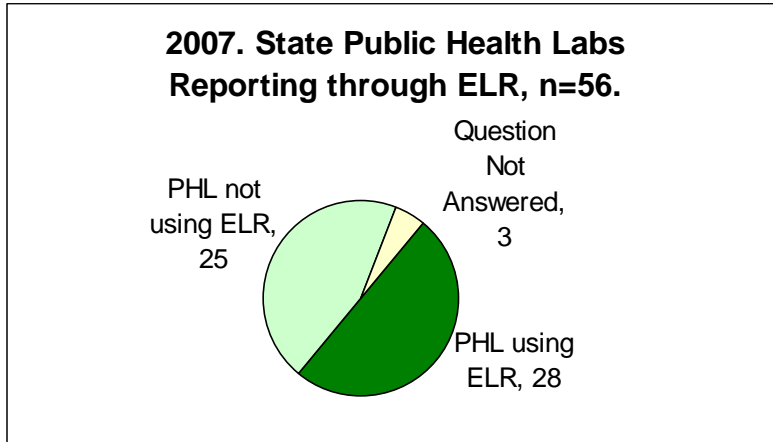
7 Are reportable lab result disease data being received electronically from regional (ex., SE United States) or local commercial/hospital labs? This question intended for both Test and Production sites.



2007. Production and Test Jurisdictions Receiving Data from Regional/Local Labs, n=24.

	No. of Labs	HL7 Format	Non-HL7 Format
Minimum	1	0	0
Maximum	300	100	5
Median	3.5	2	0

8 For your state/regional public health lab (PHL), select the appropriate answers.



For PHLs reporting through ELR,

- a) What LIS/LIMS is your PHL using to produce the reports it is sending your jurisdiction?
- b) Is this ELR bi-directional (can the PHL import specimen info, etc. from ELR)?

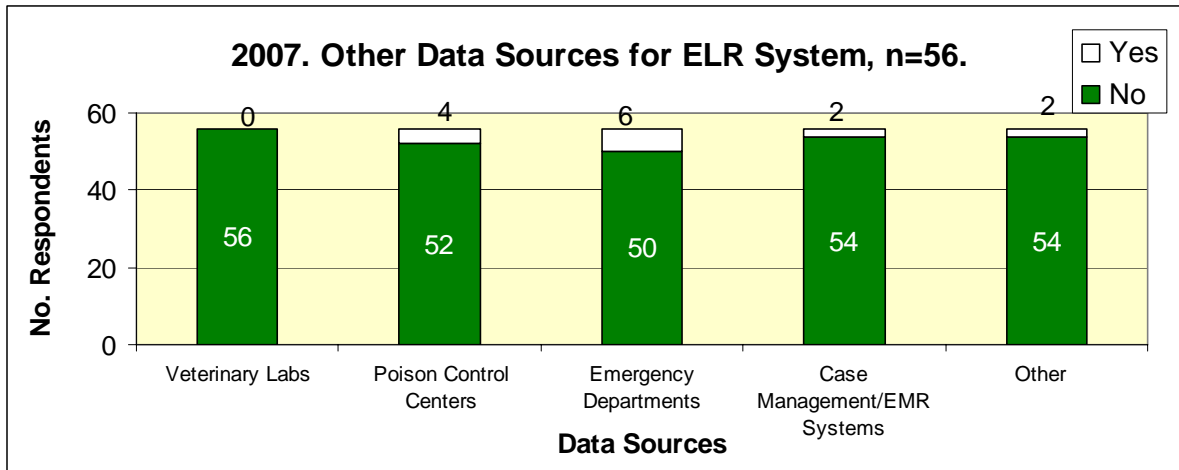
2007. PHL Reporting via ELR.		
LIS/LIMS		
	ChemWare's HORIZON	1
	EPIC	4
	LabWare	3
	LITS + and associated, such as PHIL or custom code	4
	M/LAB	1
	Orchard Software	1
	STAR LIMS	10
	Sunquest (MISYS)	2
	System developed in-house	4
Bidirectional		
	Yes	2
	No	28

9 If you chose "NO" to Question 8 (i.e., your PHL is not reporting through ELR), then please check the reasons your PHL is NOT reporting through ELR:

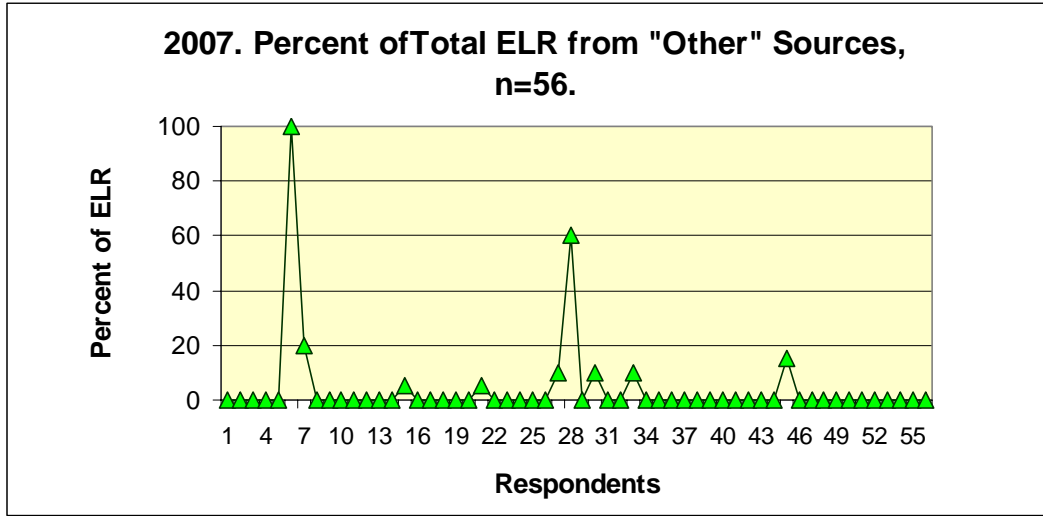
2007. PHL Not Reporting via ELR.	
Reason Not Reporting	No. Jurisdictions
LIMS not capable of producing HL7 message	8
Messaging transport not set up	7
No one has completed programming to be able to send HL7	9
Test and/or result coding is not completed or is problematic	15
Other	16

[Interpretive Note: Because respondents could select multiple options, the numbers in this table should not be interpreted as a direct representation of the number of respondents.]

10 Are other data sources transmitting data to your ELR system? If so, specify which sources.



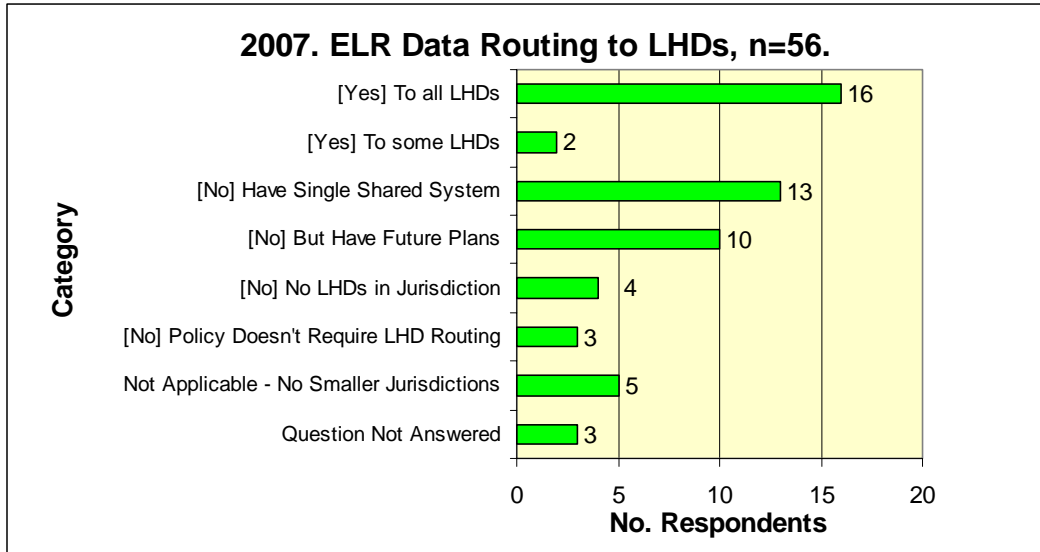
11 What is the overall percentage of total ELR data that is attributable to the "other" data sources in question 10?



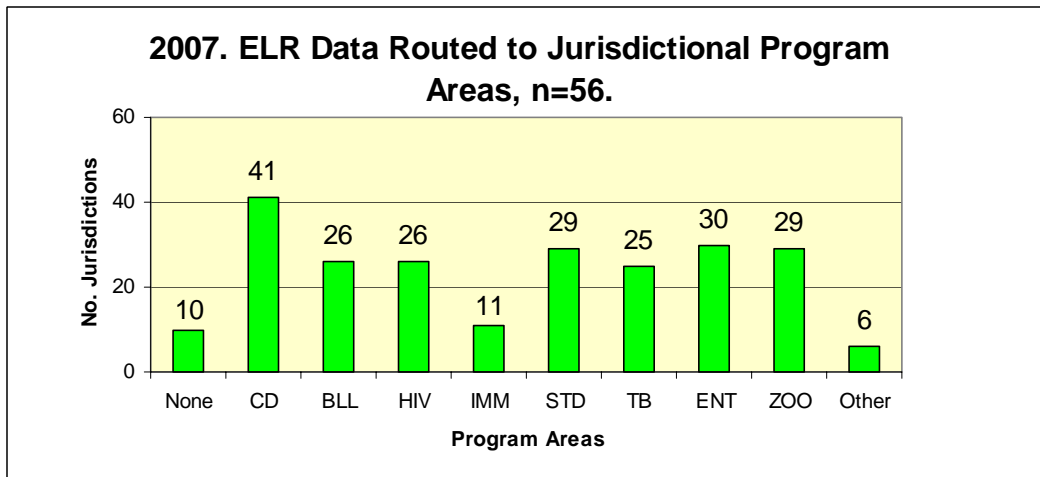
[Note: The 100% value was for "Case Management", the 60% value was for "Emergency Departments".]

SECTION: USE OF ELR DATA

12 Does your ELR system route lab data to appropriate county/local public health organizations (LHDs=Local Health Departments)?

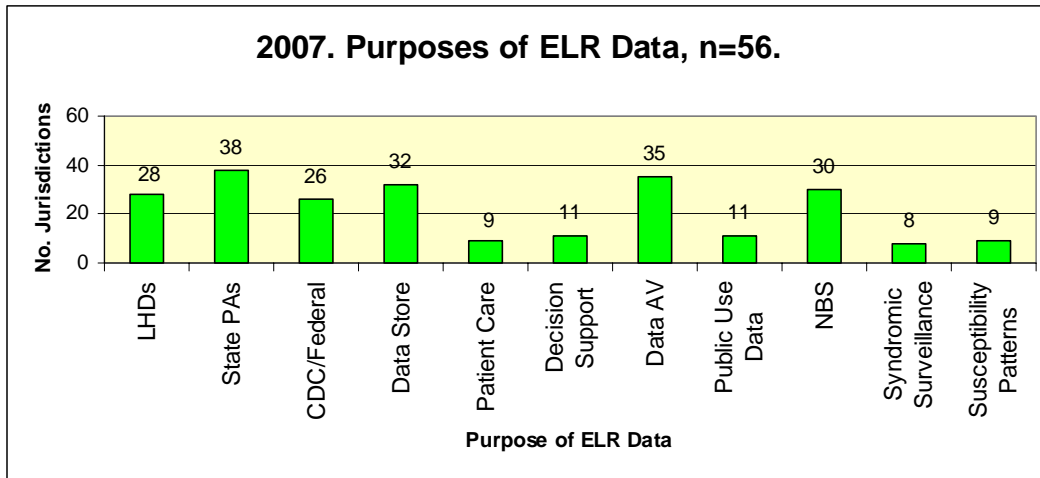


13 To which of the following state/jurisdictional public health personnel/programs are ELR data being routed?



[Interpretive Note: Because respondents could select multiple options, the numbers in this graph should not be interpreted as a direct representation of the number of respondents.]

14 For which purposes are your ELR data currently used?

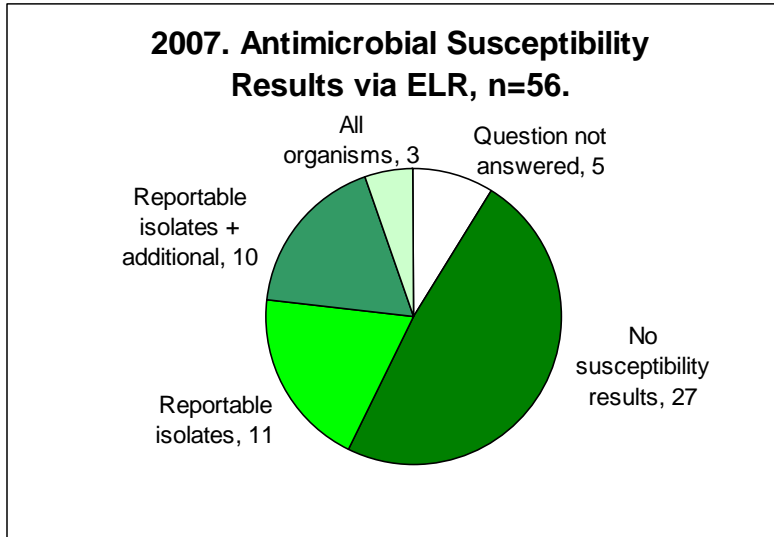


[Interpretive Note: Because respondents could select multiple options, the numbers in this graph should not be interpreted as a direct representation of the number of respondents.]

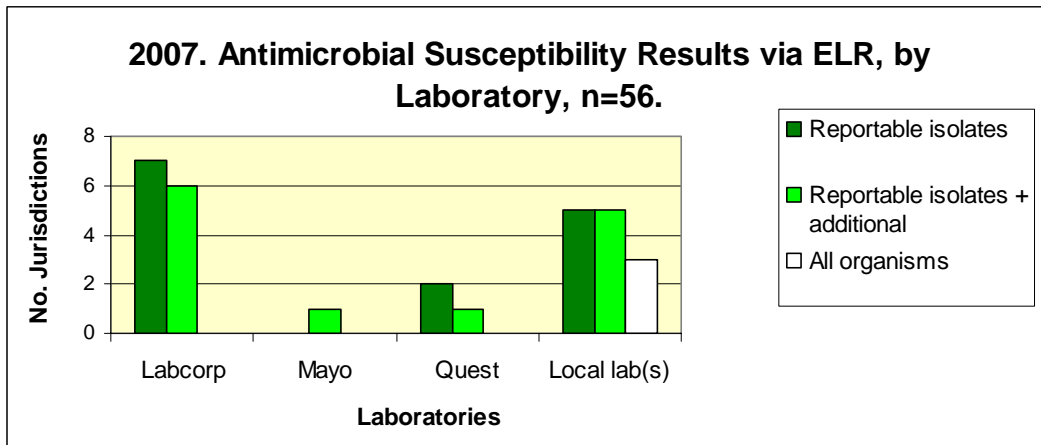
2007. ELR Data Routed to Jurisdictional Program Areas, n=56.		
Jurisdictions	Category	Full Description
28	LHDs	Provide data to county/local health departments
38	State PAs	Provide data to state program areas
26	CDC/Federal	Provide data to CDC or other federal agencies
32	Data Store	Populate an integrated, centralized data store
9	Patient Care	Assist in patient care (test ordering and result posting)
11	Decision Support	Offer health care decision support
35	Data AV	Contribute to data analysis and visualization
11	Public Use Data	Contribute to public use data available on the web
30	NBS	Integrate ELR with NBS or similar system
8	Syndromic Surveillance	Contribute to syndromic surveillance (lab test order patterns)
9	Susceptibility Patterns	Detect antimicrobial susceptibility patterns

[Interpretive Note: Because respondents could select multiple options, the numbers in this table should not be interpreted as a direct representation of the number of respondents.]

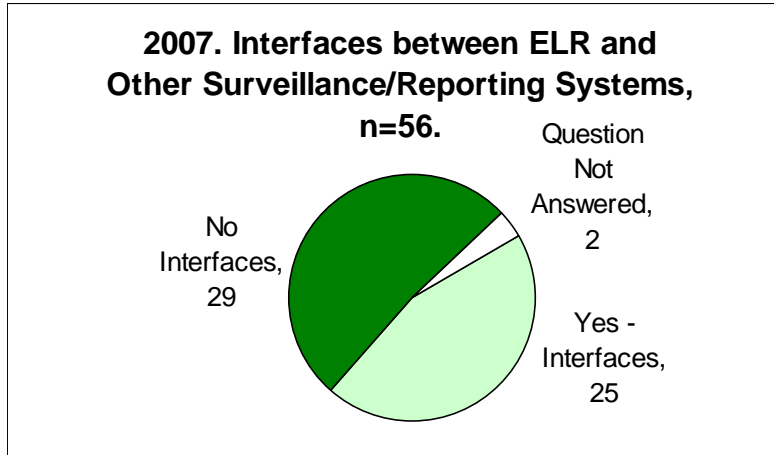
15 Does your jurisdiction receive antimicrobial susceptibility results via ELR?



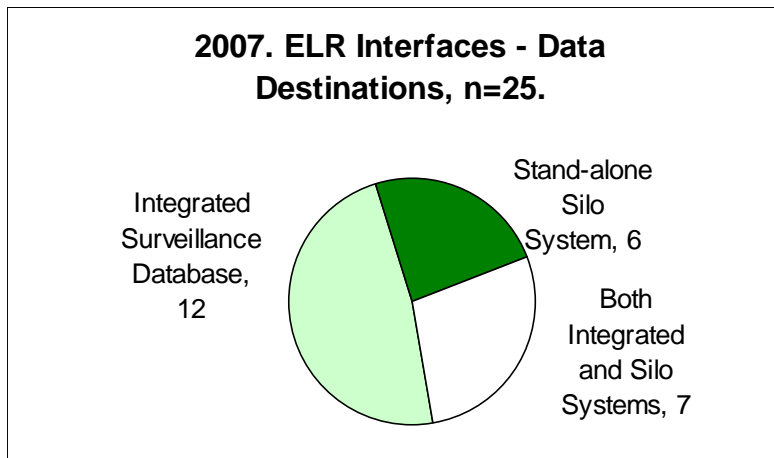
16 If you answered "Yes" to the antimicrobial susceptibility question above, what lab(s) is (are) sending you these data?



17 Do you have any interfaces between your ELR system and other disease surveillance/reporting systems?



18 If you answered "Yes" to the interface question above, then select from this list of data destination options:



- 19 If you indicated a stand-alone system above (re: ELR Interfaces – Data Destinations), then please specify system names (e.g. HARS, STD*MIS, etc.) and system formats (e.g. ASCII, CSV, XLS, HL7v?)

2007. Interface Data Destinations: Stand-alone Silo System.		
No. Jurisdictions	System Name	Data Format
2	eHARS	ASCII
5	STD*MIS	CSV, ASCII, DBF
5	In-house developed	ASCII, SQL Server, XML

[Interpretive Note: Because respondents could select multiple options, the numbers in this table should not be interpreted as a direct representation of the number of respondents.]

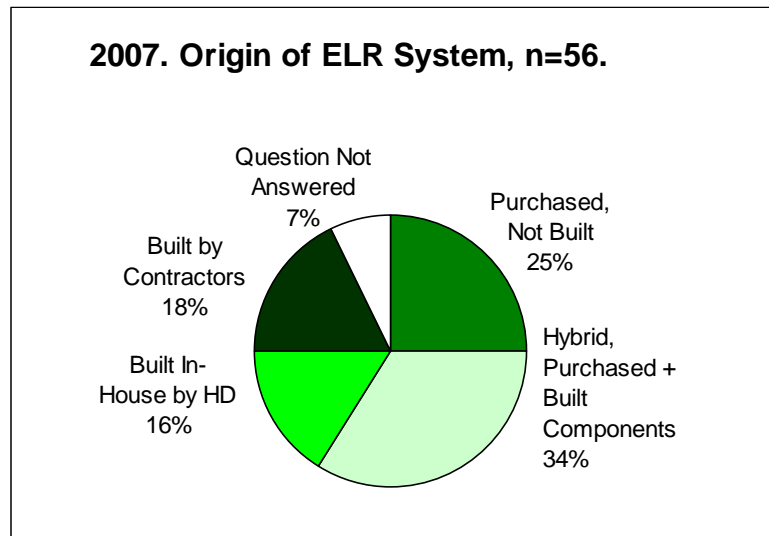
- 20 What do you think are the biggest challenges in creating such interfaces?

2007. Biggest Challenges in Creating Interfaces between ELR and other Surveillance Systems, n=56.		
Challenge		No. Jurisdictions
Lack of person-hours available to work on interfaces		41
Data variables not comparable		23
Lack of skills available to work on interfaces		20
Difficulty parsing values out of free text blocks or blobs		18
Inability to modify commercial data systems/applications		17
Other...		11
Specified in "Other"	Collaboration and coordination between entities	1
	Problems with commercial LIS HL7 capacities	1
	Lack of commitment/resources	3
	Funding	2
	HIPAA concerns	1
	Poor quality of incoming data	2
	Invalid survey response	1

[Interpretive Note: Because respondents could select multiple options, the numbers in this table should not be interpreted as a direct representation of the number of respondents.]

SECTION: SYSTEM INFO

21 Did you build your own ELR components/system?



22 If you purchased your ELR components/system, please indicate the vendor and system below. If the vendor is not included in the list, please select 'Other' for both vendor and system. If the vendor is included but you purchased a different system, please select the vendor and choose 'Other' under system. Note: If you are working with more than one vendor and system (for example, both Orion Rhapsody and IBM WebSphere), please utilize the "secondary" system option. If you are working with >2, then please just choose the top 2.

2007. Purchased ELR Components/System - Vendors.		
Vendor	Number of Jurisdictions Using Vendor for -	
	Primary ELR System	Secondary ELR System
Atlas	2	0
CDC	12	1
DiagnosisONE	2	0
Eclipsys	2	1
IBM	1	0
Information Technology International	0	0
Microsoft	1	0
NeoTools	1	0
Orion	6	3
Quovadx	1	1
Sybase	1	0
Other	9	5

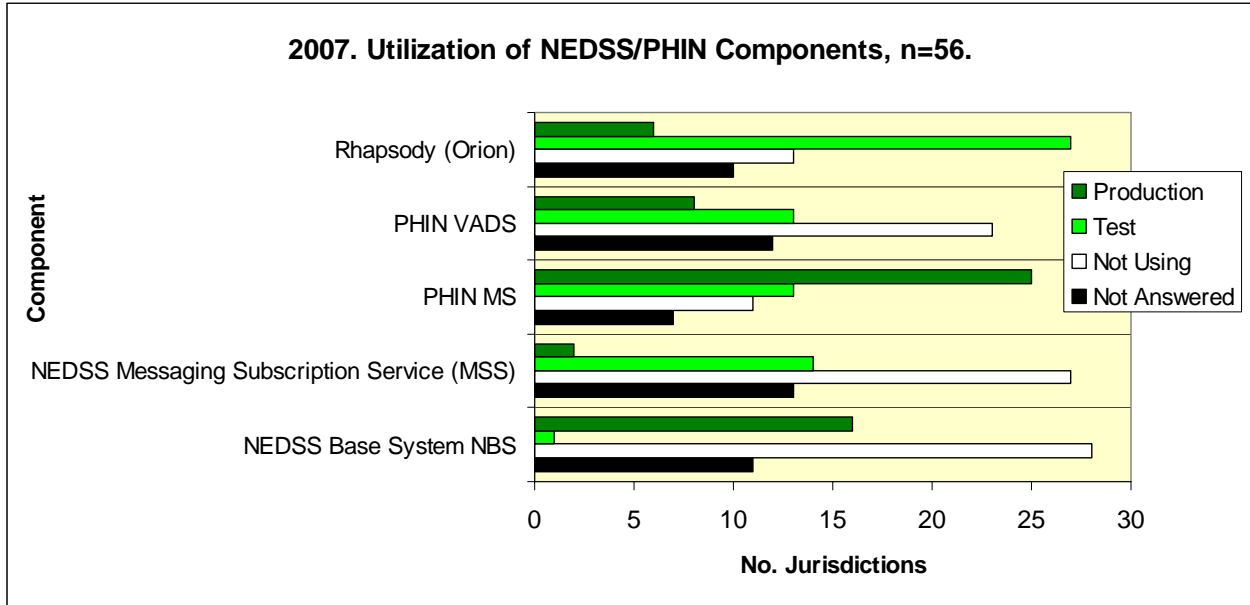
22 Continued.

2007. Purchased ELR Components/System – System.		
System	Number of Jurisdictions Using System for -	
	Primary ELR System	Secondary ELR System
BizTalk	1	0
Cloverleaf	1	1
ECMap, ECGateway	1	0
eLink	2	1
LabWorks	0	0
NBS/PHIN MS/MSS	9	0
NeoIntegrate	1	0
Other	11	5
PHS3	0	0
Rhapsody	6	4
WebSphere IIS DataStage Enterprise	1	0

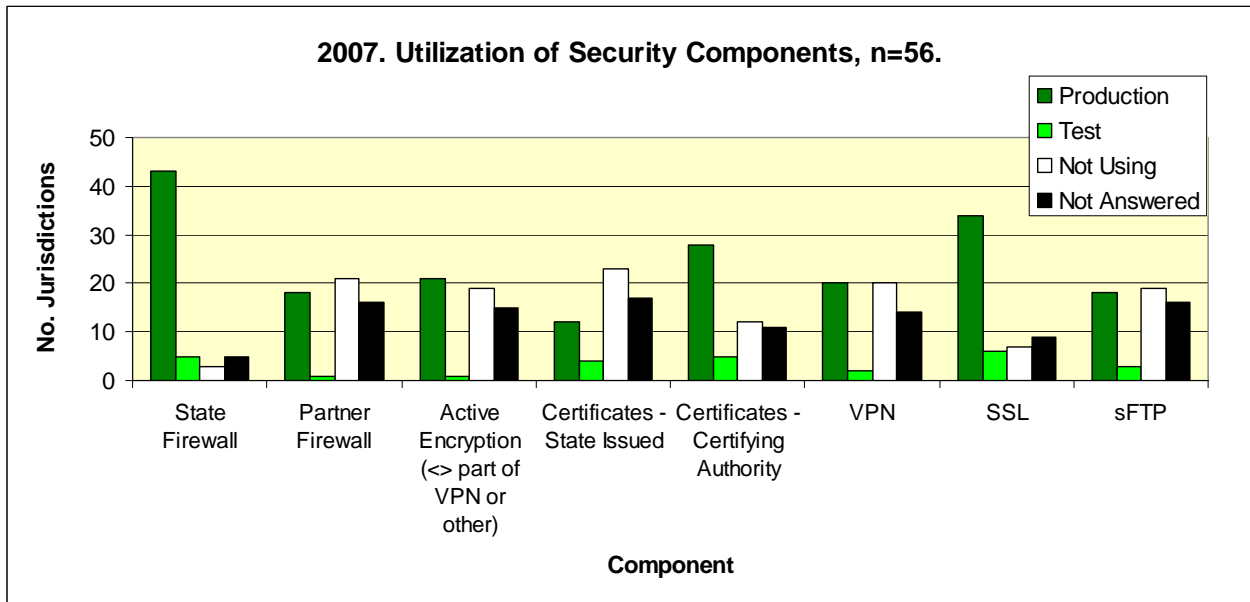
2007. Purchased ELR Components/System – Vendors and Systems Specified as "Other" (Includes Both Primary and Secondary ELR Systems). Vendor and System Are Not Correlated Here, but Are Instead Presented Alphabetically.			
Vendor		System	
1	Dynamics Research Corporation	1	Cohort
1	EMC	1	D1ELR
1	Emergint Technologies Inc.	1	DCTS
1	EPIC Systems	1	Diplomat
1	L-3 Communications	1	DOH interface; HL7 interfaces
1	LIS vendors - Sunquest, Meditech, Cerner, etc	2	DSMS
1	Local Talent	1	ELR, PHIL, Atlas Connect, etc
1	Northrup Grumman	1	ePHRS
1	SIMI Group	1	HealthDoc
4	STC	1	LIMS
1	Technology Consulting Inc.	1	PhedEx
		1	PHIDDO
		1	PHIELD and custom programming
		1	PHIL
		1	PHIN MS Only

[Interpretive Note: Respondents were allowed to free text their specifications for "Other", therefore these specifications are reported here "as is", with no corrections.]

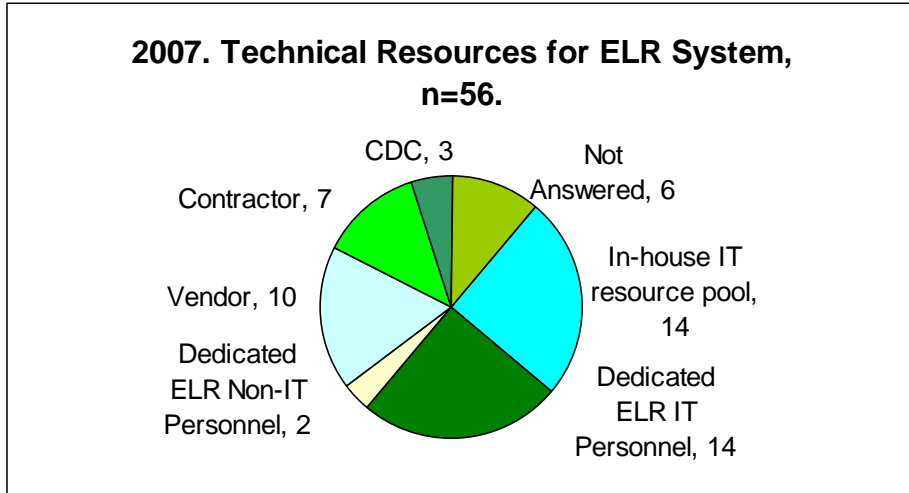
23 Which NEDSS/PHIN components are you currently utilizing in your ELR system? For each, indicate Production or Test status.



24 Which of these security components are you currently utilizing in your ELR system? For each, indicate Production or Test status.



25 For both Production and Test systems: In general, if you require technical changes made to your ELR system, to whom do you make your request?



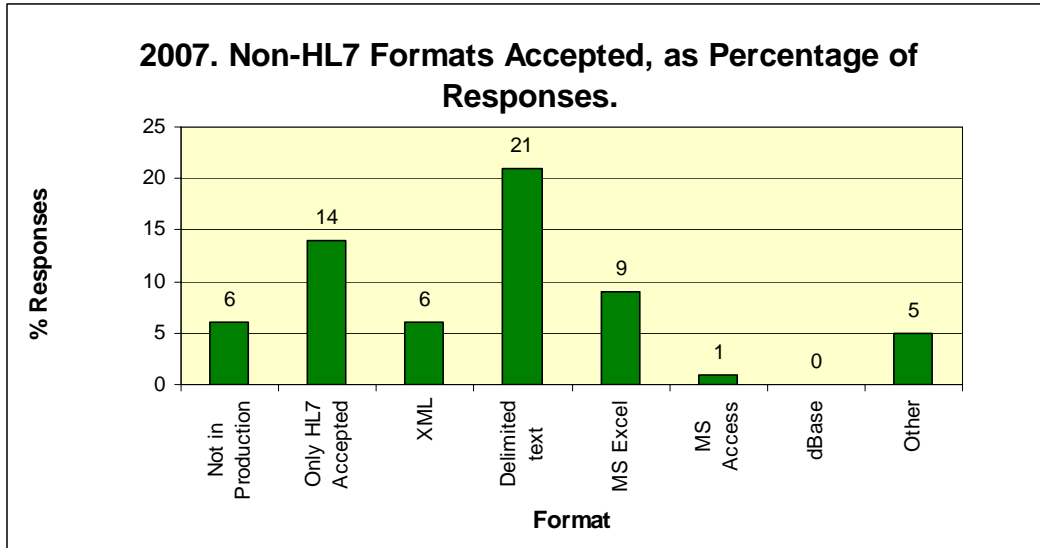
SECTION: ELR FORMATS

26 Which of the following Health Level 7 (HL7) formats will your ELR system ACCEPT and SEND: (Only indicate those currently accepted/sent, not formats that you COULD accept/send if you were to spend some time setting it up).

HL7 Versions	Accept						Send					
	2.2	2.3.z	2.3.1	2.4	2.5	2.5.1	2.2	2.3.z	2.3.1	2.4	2.5	2.5.1
Receiving in our production system	2	19	30	2	0	0	0	0	0	0	0	0
Receiving in testing/development stages	5	9	13	3	9	0	0	0	0	0	0	0
Not working with this	25	9	4	24	20	0	24	20	16	22	19	21
Not answered	24	19	9	27	27	56	31	28	26	30	30	29
Message Types	Accept						Send					
	ORU	OUL	ADT	ORM	CDA R1	CDA R2	ORU	OUL	ADT	ORM	CDA R1	CDA R2
Receiving in our production system	31	0	3	1	0	1	0	0	0	0	0	0
Receiving in testing/development stages	9	3	3	5	0	0	0	0	0	0	0	0
Not working with this	4	23	22	23	26	26	12	22	20	21	23	24
Not answered	12	30	28	27	30	29	28	33	32	31	33	32

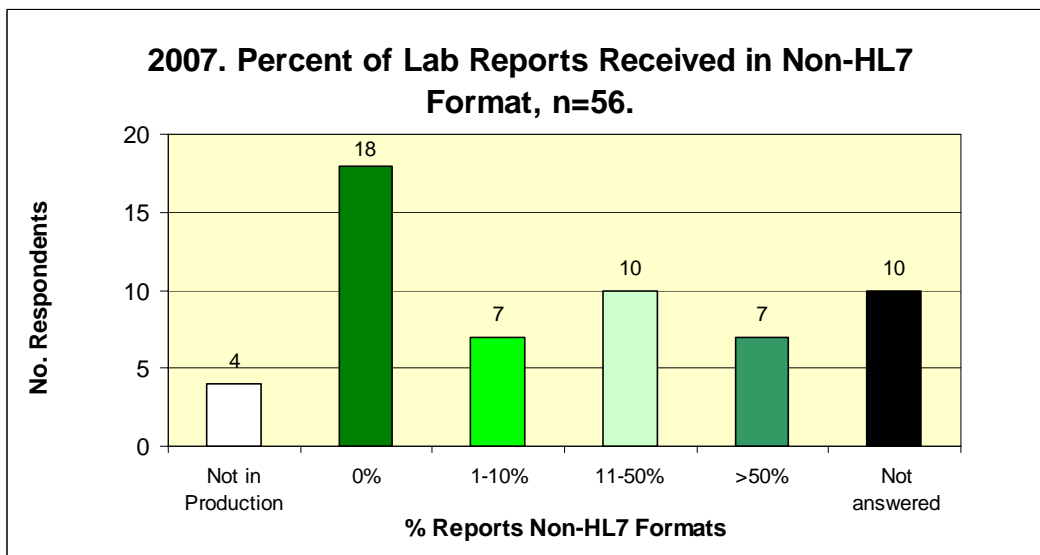
[Interpretive Note: Because respondents could select multiple options, the numbers in this table should not be interpreted as a direct representation of the number of respondents.]

- 27 Which of the following non-HL7 formats does your ELR system currently accept? (Only indicate those currently accepted, not formats that you COULD accept if you were to spend some time setting it up).

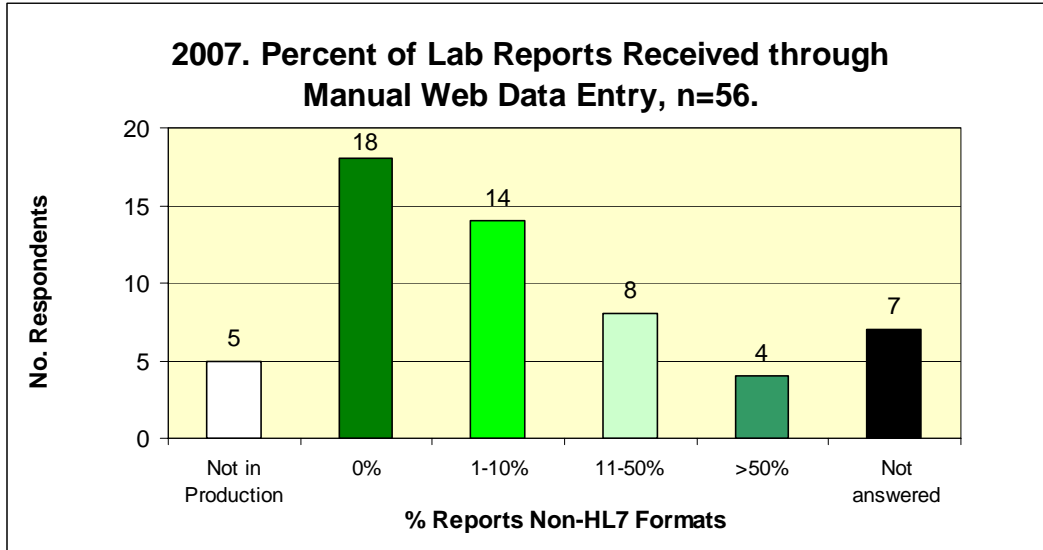


[Interpretive Note: Because respondents could select multiple options, the numbers in this graph should not be interpreted as a direct representation of the number of respondents.]

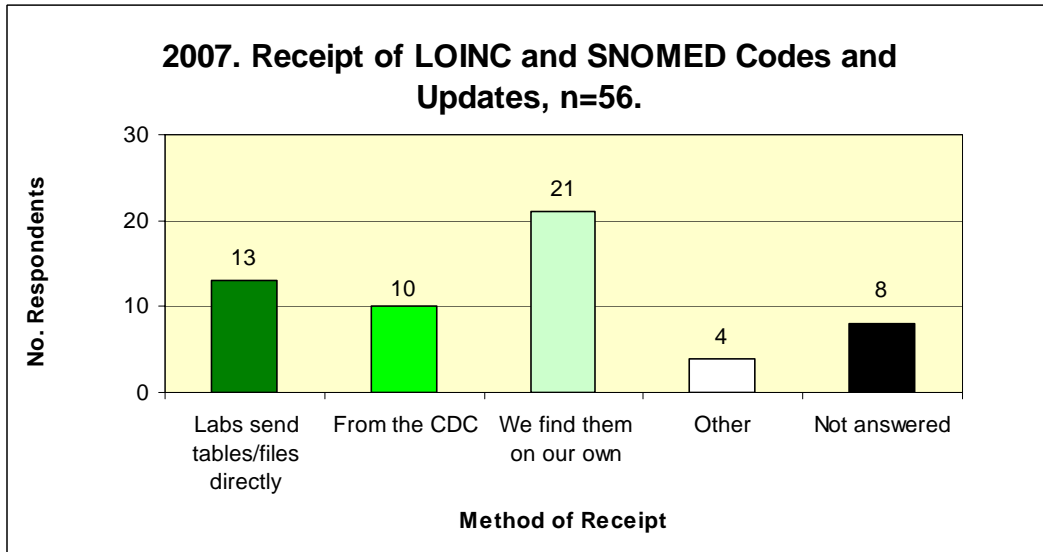
- 28 What percentage of the ELR lab reports you currently receive are non-HL7 format?



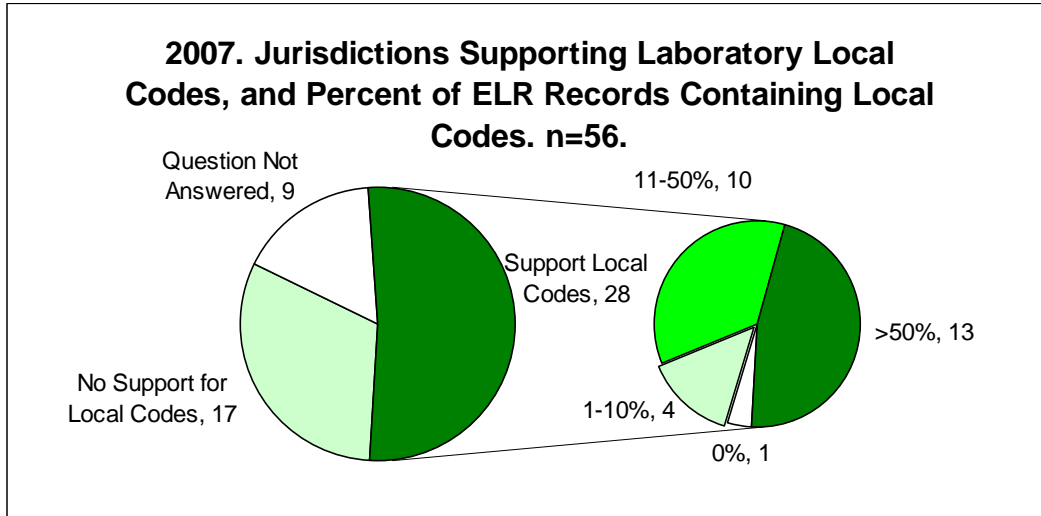
29 What percentage of the ELR lab reports you currently receive are transmitted to you through manual Web data entry?



30 How do you receive your LOINC and SNOMED codes/information and updates?



31 Do you support lab local codes (i.e., codes other than LN or SNM)?



SECTION: LIS/LIMS

32 Laboratories running which major LIS/LIMS* systems are currently sending/planning to send reportable diseases to your ELR system?

LIS/LIMS Systems*	HL7	Non- HL7	Prod	Test
Antek:LabDaq	0	0	0	0
Aspyra:CyberLab	1	0	0	1
Cerner Corp:Cerner Millennium PathNet	7	1	4	5
Cerner Corp:Cerner PathNet HNA Classic	5	0	3	2
Clinical Information Systems:CisLab	0	0	0	0
Clinical Software Solutions:CSS Win	0	0	0	0
ClinLab:ClinLab LIS	0	0	0	0
Comp Pro Med:Polytech LIS	0	0	0	0
Computer Service & Support:OCLS-2000	0	0	0	0
CPSI:CPSI System	0	0	0	0
Custom Software Systems:StarLab	0	0	0	0
eTeleNext:eTeleNext LIS	0	0	0	0
Fletcher-Flora Health Care Systems:encaLaber	0	0	0	0
Fletcher-Flora Health Care Systems:LabPak	0	0	0	0
GE Healthcare:Centricity Ultra Laboratory	0	0	0	0
Hex Laboratory Systems:Lab/Hex	0	0	0	0
Impac Medical Systems:IntelliLab	0	0	0	0
Labware:Labware LIMS	2	0	1	0
LabSoft:LabNet	0	0	0	0
McKesson:Horizon Lab	3	0	1	1
Medcom Information Systems:Medcom Lab Manager	0	0	0	0
Medical Information Technology (Meditech):Meditech LIS - client/server	4	2	4	2
Medical Information Technology (Meditech):Meditech LIS - Magic	1	2	3	1
MediSolution:MediLab	0	0	0	0
Misys Healthcare Systems:Misys Commercial Laboratory	3	0	2	2
Misys Healthcare Systems:Misys Laboratory	16	0	9	9
Multidata Computer Systems:MultiTech	0	0	0	0
NetLims:AutoLims	0	0	0	0
Omnitech:OmniLab	0	0	0	0
Opus Healthcare Solutions:OpusLab	0	0	0	0
Orchard Software:Orchard Harvest LIS	0	0	0	1
Psyche Systems Corp:LabWeb	2	0	2	0
QuadraMed:Affinity Laboratory	0	0	0	0
Quality Software Systems:QSS LabHealth	0	0	0	0
SCC Soft Computer:SoftLab	5	0	3	2
Schuyler House:SchuyLab	0	0	0	0
Seacoast Laboratory Data Systems:SurroundLab Plus	0	0	0	0
Siemens Medical Solution:Novius Lab	1	0	0	2

* LIS/LIMS list courtesy of Raymond Aller, MD, in CAP TODAY, November 2006.

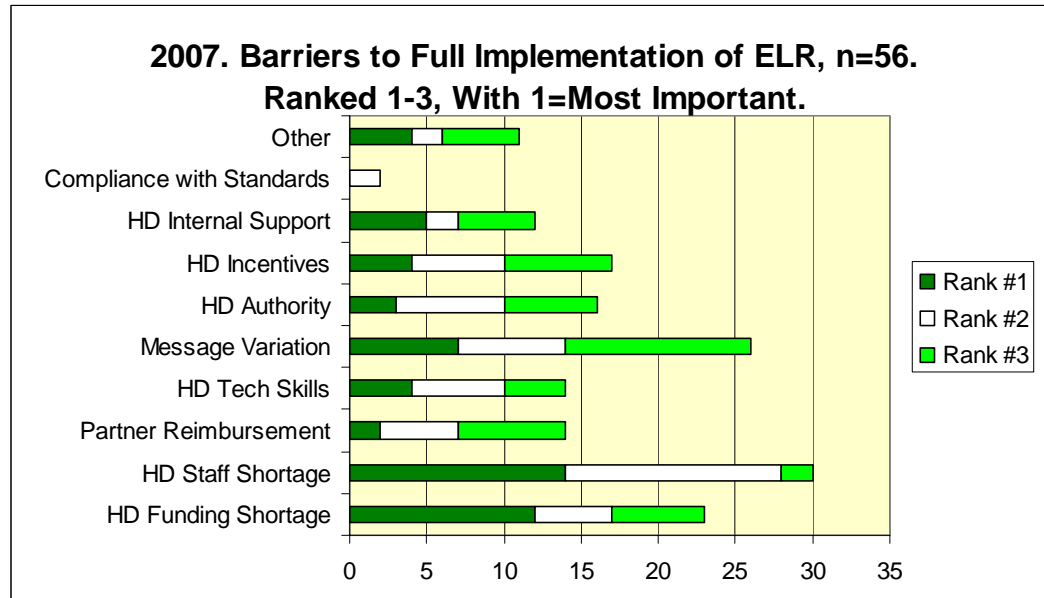
See Note, next page.

32 Continued, note for LIS/LIMS table.

[Interpretive Note: Because respondents could select multiple options, the numbers in this table should not be interpreted as a direct representation of the number of respondents. Also note that numbers are reported as received, and not corrected for synchronization of totals of HL7-NonHL7 and Prod-Test.]

SECTION: OPINIONS

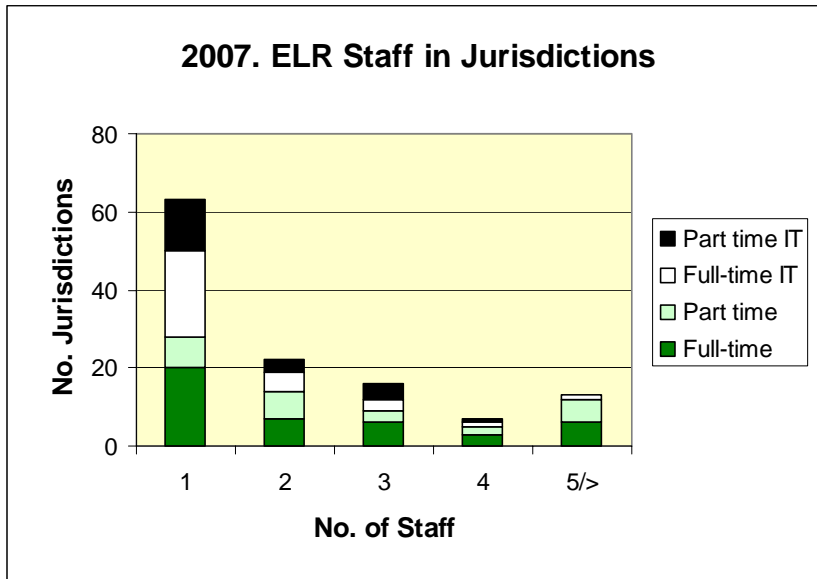
33 What are the three most important barriers to full implementation of ELR in your jurisdiction? Please rank three options from 1 (most important) to 3 (less important) by entering numbers in the corresponding cells.



2007. Barriers to Full Implementation of ELR, n=56				
Rank			Category	Full Description
1	2	3		
12	5	6	HD* Funding	Lack of funding at health department
14	14	2	HD Staff	Shortage of staff at health department
2	5	7	Partner Reimbursement	Hospitals and other Labs want reimbursement for their start-up costs
4	6	4	HD Tech Skills	Lack of technical skills and knowledge of health department staff
7	7	12	Message Variation	Variable content and format of ELR messages from labs
3	7	6	HD Authority	Lack of authority to compel compliance
4	6	7	HD Incentives	Lack of incentives to encourage compliance
5	2	5	HD Internal Support	Not enough internal agency support
0	2	0	Compliance with Standards	Compliance with jurisdiction or agency IT and/or confidentiality standards
4	2	5	Other	Other
			4	Lab lacks IT resources/funding
			2	LIS does not support vendor's claims of HL7 compliance, or other vendor non-compliance
			3	Competing priorities at laboratories
			1	Lack of patient address for specimens

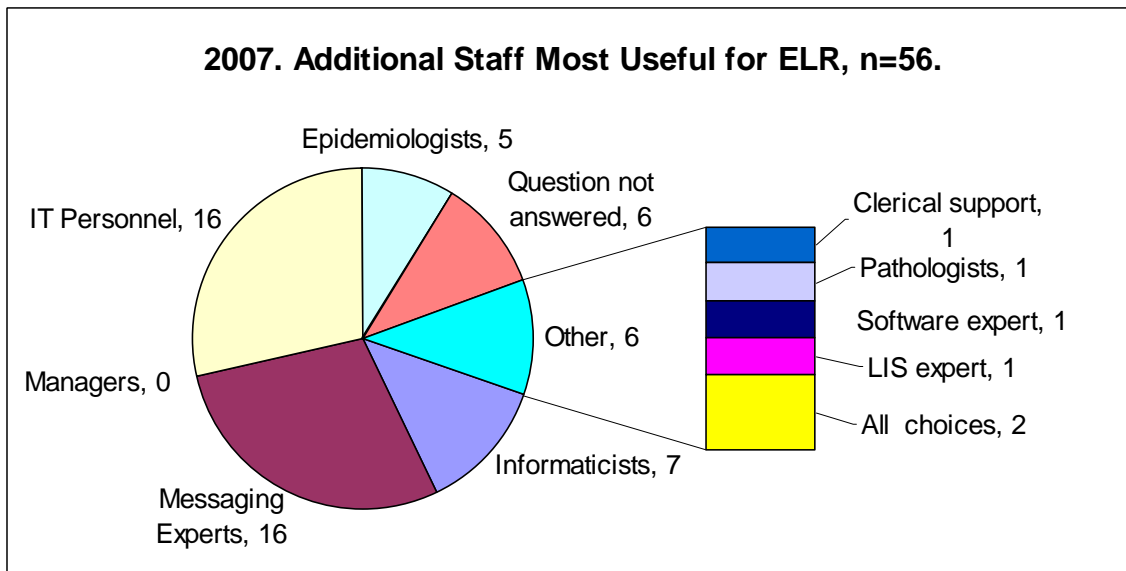
* "HD" refers to Health Department.

34 How many staff (government or contractors) are responsible for ELR in your jurisdiction?

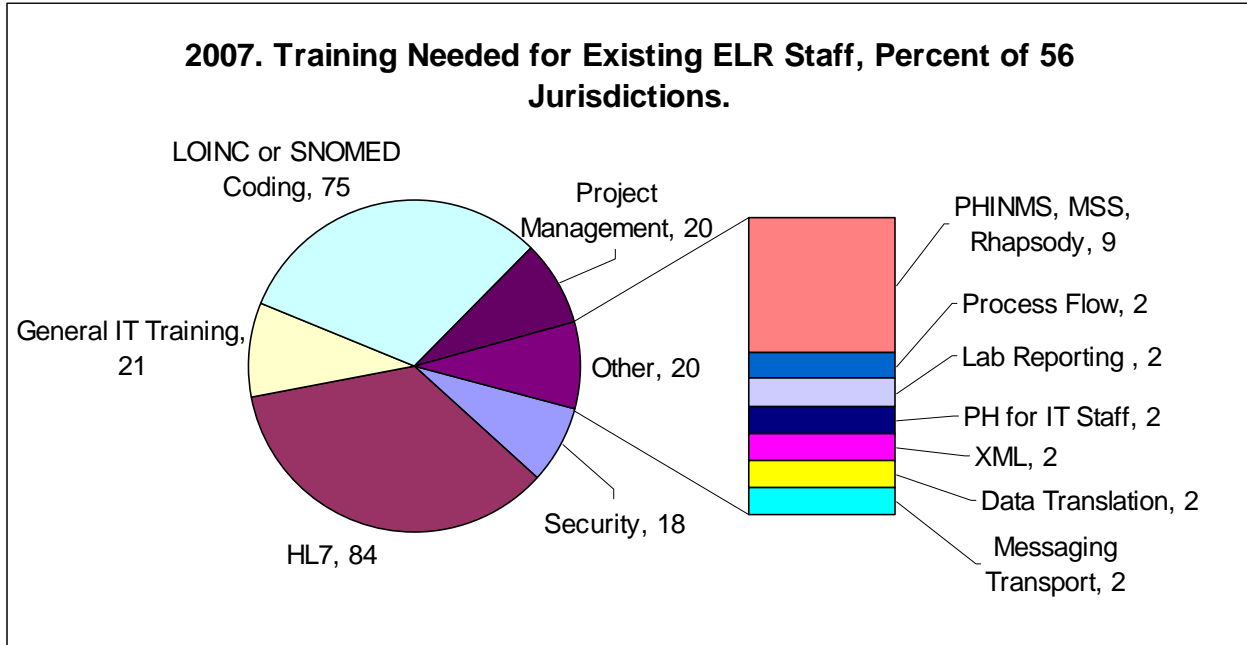


[Interpretive Note: These data should be regarded as indications of general trends, rather than exact data. The 2007 survey allowed too much latitude in choosing responses to this question, and so the resultant data are not precise. The question will be modified in the 2008 survey to correct this flaw.]

35 Addition of what type of staff would be most useful for your state in implementing or maintaining ELR?



36 What kind of training for existing staff would be most helpful in implementing or maintaining ELR?

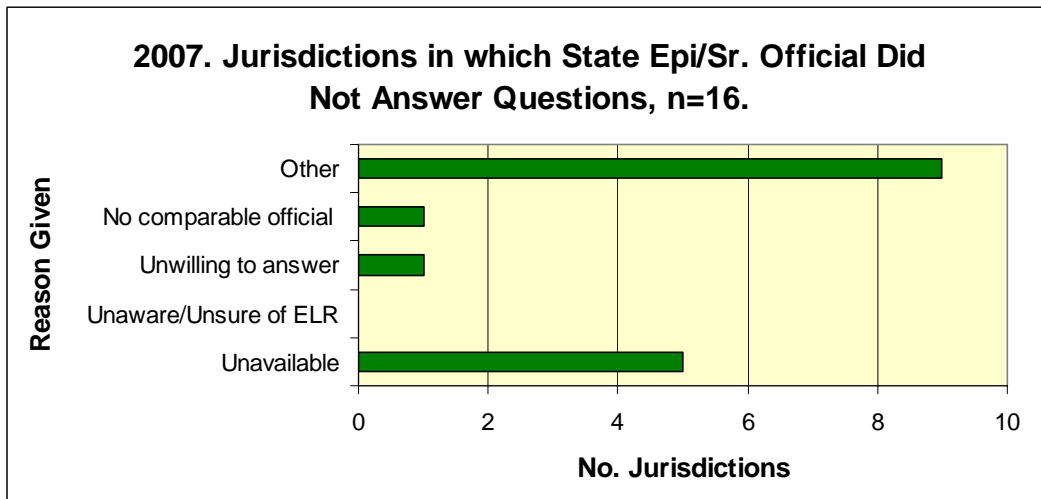


[Interpretive Note: Because respondents could select multiple options, the numbers in this graph should not be interpreted as a direct representation of the number of respondents.]

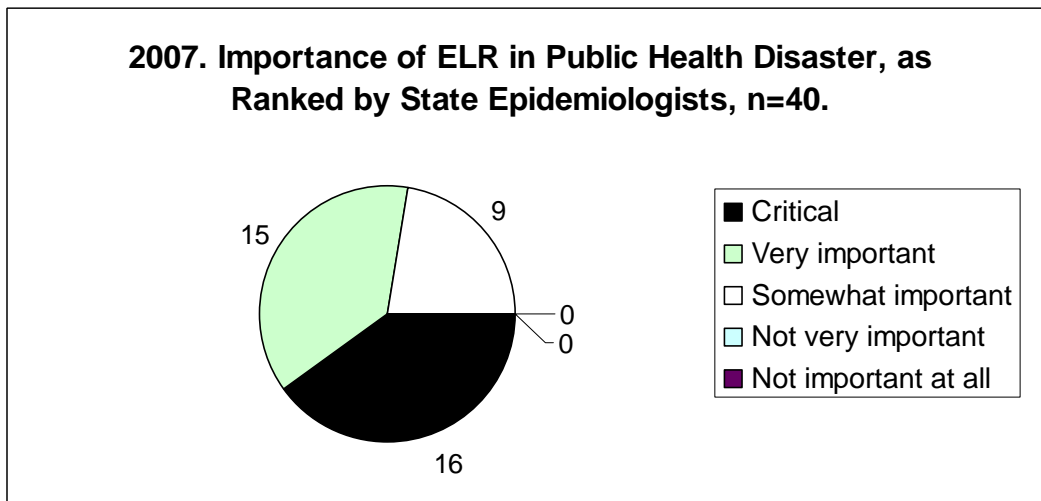
State Epidemiologist or Corresponding Senior Official

The following questions were addressed to the State Epidemiologist or, if the jurisdiction is not a state, a similar official. The answers were specifically designated as not being released in identifiable form, only as aggregate information.

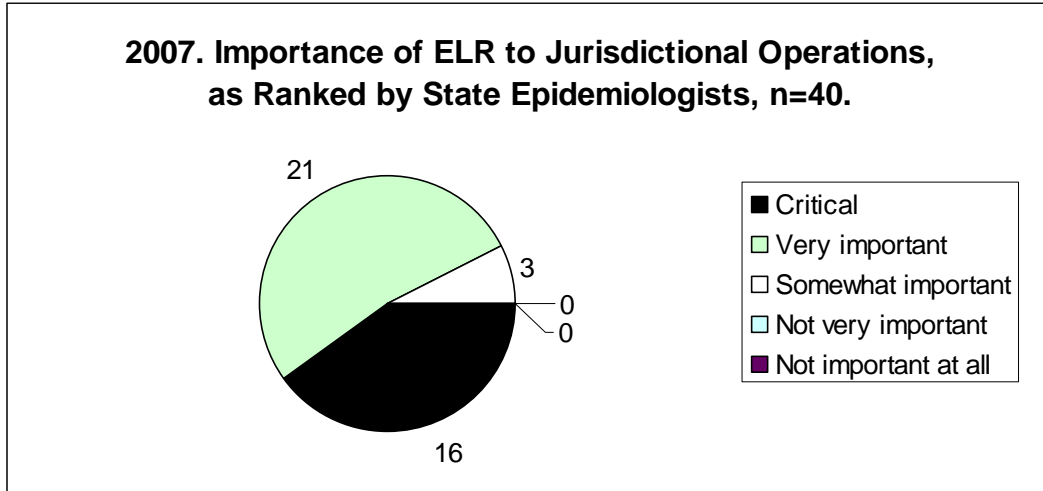
38 If you are UNABLE to have this official answer the questions, then please indicate the reason:



40 In the event of a public health disaster, how important would it be to obtain real-time laboratory data from your jurisdiction's hospitals and commercial laboratories?



41 In your opinion as State Epidemiologist (or similar position), how important is ELR to your jurisdiction's operations?



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The author gratefully acknowledges the contributions of the 2007 survey editorial board.

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