

Electronic Laboratory Reporting in Pennsylvania

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Electronic Laboratory Reporting

- Lots of promise for improving timeliness, completeness and accuracy of reporting,
- BUT...

Problems with ELR

- Labs don't use standardized coding schemes
- Not all labs use HL7 messaging
- Labs don't use HL7 segments consistently
- ELR often not integrated with other surveillance systems, requiring extra key entry and vigilance to ensure reports don't fall through the cracks

The PA ELR Solution

- Fully integrated with PA-NEDSS
- Accepts HL7 messages and non-HL7 files (ASCII, Access, etc.)
- For general infectious disease, NO standardized coding schemes necessary-- Preprocessor uses substring searching to assign code values for disease; test name, result, and method; specimen source; and organism

Labs Participating in ELR

- General infectious disease
 - 2 reference labs (HL7 messages)
 - State public health lab (Access file)
 - 1 large hospital lab (ASCII file)
 - Only 1 lab uses LOINC
 - Batch files received daily
- 33 STD/lead contract labs are mapped directly to PA-NEDSS

Example of Process for General Infectious Disease

Incoming HL7 Message

```
PID|1||11891928110^^^^^LABC||XXX^XXX^X||194805232016|M||U|111  
XXXX AVE^^E STROUDSBURG^PA^18301||^****|||SSSSNNNN  
  
OBR|1||11891928110|^008144^STOOL  
CULTURE^L||200304281130|||200304290843|H25407^|^^^|  
|F|||787.91^Diarrhea^IC9  
  
ZLR|^HACKETTSTOWN^NJ^07840|  
  
OBX|1|CE|11475-1^MICROORGANISM  
IDENTIFIED^LN^080173^RSLT#1^L|1|L-13505^Campylobacter  
jejuni^SNM^CAMPJE^Campylobacter jejuni ssp.  
jejuni^L||A||F||20030501|31D0125232^LABCORP RARITAN^CLIA  
NTE|1|L|Campylobacter jejuni ssp. jejuni  
NTE|2|L|Moderate growth  
  
MSH|^~\&|LABCORP-  
CORP|LABCORP^34D0655059^CLIA|PADOH|PA|200305030140||ORU^R01|2003  
0503021809521040|P|2.3
```

Portion of ELR Preprocessor Code

```
56*12010*Babesiosis*10*B.sp.*Babesia spp.*'BABE'*x*
67*80550*Botulism, other and unspecified*11*C.
botulinum*Clostridium botulinum*'BOTUL'*x*
4*10020*Brucellosis*12*B. abortus*Brucella
abortus*'BRUCE'*'ABOR'*
4*10020*Brucellosis*13*B. melitensis*Brucella
melitensis*'BRUCE'*'MELIT'*
4*10020*Brucellosis*14*B.suis*Brucella suis*'BRUCE'*'SUI'*
4*10020*Brucellosis*15*B. canis*Brucella canis*'BRUCE'*'CANI'*
4*10020*Brucellosis*16*B. sp.*Brucella spp.*'BRUCE'*x*
45*11020*Campylobacteriosis*17*C. jejuni*Campylobacter
jejuni*'CAMPY'*'JEJ'*
45*11020*Campylobacteriosis*18*C.coli*Campylobacter
coli*'CAMPY'*'COLI'*
45*11020*Campylobacteriosis*19*C. fetus*Campylobacter
fetus*'CAMPY'*'FET'*
45*11020*Campylobacteriosis*20*C. sp.*Campylobacter
spp.*'CAMPY'*x*
88*10274*Chlamydia trachomatis infection*22*C.
trachomatis*Chlamydia trachomatis*' CT'*x*
88*10274*Chlamydia trachomatis infection*22*C.
trachomatis*Chlamydia trachomatis*'CTAP'*x*
88*10274*Chlamydia trachomatis infection*22*C.
trachomatis*Chlamydia trachomatis*'AMYD'*'TRACH'*
```

```

data Disease;
  set Source;
%do J=1 %to 5;
  if TypeShort in ('CX.ID', ' ') then do;
    %let var=%scan(&varlist2,&J,*);
  end;
else do;
  %let var=%scan(&varlist1,&J,*);
end;
%if &var=blank %then %goto nextvar;
%do I=1 %to 10000 %by 8;
  %let A=%scan(%superq(matchlist),&I,*);
  %if &A=ListEnd %then %goto nextvar;
  %let B=%scan(%superq(matchlist),%eval(&I+1),*);
  %let C=%scan(%superq(matchlist),%eval(&I+2),*);
  %let D=%scan(%superq(matchlist),%eval(&I+3),*);
  %let E=%scan(%superq(matchlist),%eval(&I+4),*);
  %let F=%scan(%superq(matchlist),%eval(&I+5),*);
  %let G=%scan(%superq(matchlist),%eval(&I+6),*);
  %let H=%scan(%superq(matchlist),%eval(&I+7),*);
  %if &H=x %then %let crit=%quote(index(&var,&G)>0);
  %else %let crit=%quote(index(&var,&G)>0 and index(&var,&H)>0);
  if &crit and DsCode=' ' then do;
    DsCode=left(trim("&A")) !! '~' !! left(trim("&B"));
    Event=&B;
    Disease="&C";
    OrgCode=left(trim("&D")) !! '~' !! left(trim("&E"));
    Organism="&F";
    DsMatch="&var";
    DsString=trim("&G.&H");
    Position=index(&var,&G);
  end;
end;

```

Input from lab file

Output sent to PA-NEDS

PTLast	PTFirst	PTAge	PTDateofBirth	PTSex	PTZIP	MDZip	FACZIP
XXXX	XXX		9999999	M	99999	07840	07840

TName
STOOL CULTURE
SpecimenSource
TestName
MICROORGANISM IDENTIFIED
AltTestName
RSLT#1
TestResult
CAMPYLOBACTER JEJUNI L-13505 CAMPYLOBACTER JEJUNI SSP. JEJUNI CAMPJE
TestFlags
A: ABNORMAL
SensitivityData
ReferenceRange

TypeShort	TypeMatch	TypeString	
CX.ID	Loinc	PRID	
SourceCode	SourceName	SourceMatch	SourceString
94~STL	Stool/feces	TName	STOOL
MethodCode	MethodName	MethodMatch	MethodString
TstCode	TstName		
93~2046	Culture/identification of Campylobacter spp.		
DsCode	Disease		
45~11020	Campylobacteriosis		
OrgCode	Organism		
17~C. jejuni	Campylobacter jejuni		
DsMatch	DsString	Position	DsOrder
TestResult	'CAMPY"JEJ'	1	1 of 1
ResultCode	Result	ResultMatch	ResultString
14~AB	Abnormal	TestFlags	ABN
NumericResultTex	UnitName	LowerBound	UpperBound

Disposition	ReviewCode	LabName	ImportDate	ReportID	ELRID	RunDate
1		LABCORP	5/5/2003 9:39:57 AM	224915	1083157	15830

Record: 2 of 557

137176

MID_NAME.....A
SUFFIX.....
BIRTHDATE.....
GENDER.....
RACE.....
PAT_ADD_1.....

137177

Atomic_ID.....1014394
LAB_ID.....00000561
LAST_NAME.....
FIRST_NAME.....
MID_NAME.....
SUFFIX.....
BIRTHDATE.....
GENDER.....
RACE.....
PAT_ADD_1.....

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Commonwealth of Pennsylvania Electronic Disease Reporting

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Search Inboxes Patient ID: 200317 Report ID: 81115

Active User: kwaller Session Expires: 19 minutes

Location: [Disease Reporting](#) > Inbox

Inbox: All Reports > ELR

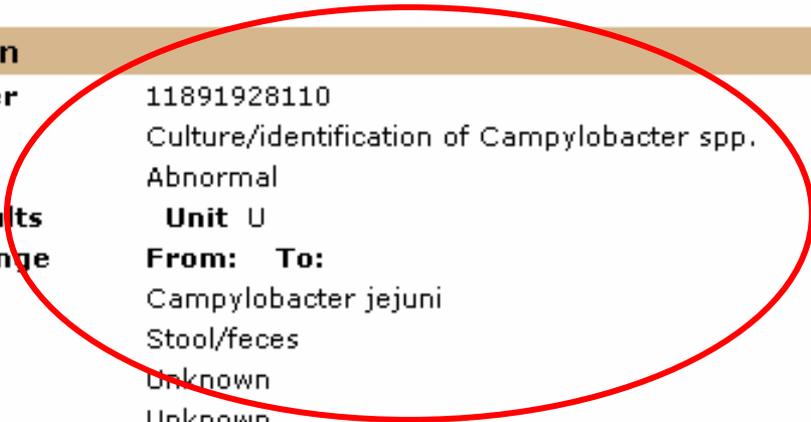
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Patient Name	Condition	Report Source	Date Received	Report ID	Assigned To	Linked Investigation ID	Investigation Status	
	Campylobacteriosis	LabCorp ELR	05/05/2003	81115 [View] [Edit]		81314 [View]	Open	U inves
	Rubella (German Measles)	LabCorp ELR	05/02/2003	79504 [View] [Edit]		Unlinked Start Investigation	N/A	I
					Re-Assign			
	Lyme Disease	LabCorp ELR	05/02/2003	79418 [View] [Edit]		79151 [View]	Open	U inves
	Lyme Disease	LabCorp ELR	05/02/2003	79392 [View] [Edit]		79151 [View]	Open	U inves
	Lyme Disease	LabCorp ELR	05/01/2003	78918 [View] [Edit]		79151 [View]	Open	U inves
	Lyme Disease	LabCorp	05/01/2003	78906 [View]		79159 [View]	Open	U

Test Details

Test Information

Accession Number	11891928110	
Test Name	Culture/identification of Campylobacter spp.	
Test Result	Abnormal	Other
Quantitative Results	Unit U	
Reference Range	From: To:	
Organism	Campylobacter jejuni	Other
Specimen Source	Stool/feces	Other
Test Method	Unknown	Other
Analysis Method	Unknown	Other
Test Purpose	Unknown	Other
Funding Source	Unknown	
Laboratory Name	LabCorp	
Specimen Collected Date	04/28/2003	
Laboratory Received Date	04/29/2003	
Test Completed Date	05/01/2003	
Additional Test Findings	Test Name: MICROORGANISM IDENTIFIED Result: CAMPYLOBACTER JEJUNI L-13505 CAMPYLOBACTER JEJUNI SSP. JEJUNI CAMPJE Lab: 31D0125232 LABCORP RARITAN	



Associated Follow-up Activities

There are no associated Follow-up Activities.

Record Information

Record Created By	LabCorp ELR	On Date	05-MAY-03
Record Modified By	LabCorp ELR	On Date	05-MAY-03



NEDSS Reports By Month As of 4/30/2003

