Electronic Lab Reporting of Blood Lead Results – A Regional View

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State Lead Programs Survey
- Developed by Rick Leiker and J.A. Magnuson
- Distributed Fall 2001 to Region IX and X States – AK, AZ, CA, HI, OR, WA
- Purpose – gather information about state EDI capacities and blood lead reporting 

Why EDI?
- New national requirements for reporting ALL lead tests ⇒ huge test volume increase: EDI reduces data entry burden
- Demonstrated ability of ELR to increase reporting timeliness and completeness
- Merge incoming electronic datasets with existing data systems
State Lead Programs Survey

Three parts of survey:
- I. State Blood Lead Information
- II. Lab Specific Information
- Glossary

I. State Blood Lead Information
- General reporting info:
  - Number of labs; lead tests/month; reportable lead level
  - Electronic Data Interchange (EDI) info:
    - HL7; security; report methods and formats; coding

II. Lab Specific Information
For six major (high volume) labs in each state:
- Lowest BLL reported
- # Tests/year (Adult and Children)
- Main method of reporting
II. Lab Specific Information - Continued

Info on reported variables:

- **Patient** – Name, Tel, Address, County, DOB, Sex, Race, Medicaid, SS#
- **Provider** – Name, Tel, Address, County, ID#
- **Occupation** – Type, Code, Employer Name, Address, Tel
- **Test Info** – Lead Level, Spec Type, Draw Date, Lab Analysis Date

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Glossary

Sample Data

- The six states represented eight state lead programs
Coding systems utilized by labs reporting to programs

Number of programs

FIPS  LOINC  ICD  Proprietary

0  2  4  6  8  10

No labs  Some labs  Most labs  All labs

State ability to receive an HL7 message; n=6

No 17%

Yes 83%

Patient info variables reported by major labs to the eight programs

Variables

Name  Tel  Street  City  County  Zip  DOB  Sex  Race  Medicaid  SS#
Provider info variables reported by major labs to programs

Percentage of labs reporting

Name | Tel | Street | City | County | Zip

Variables

Test Info Variables Reported by Major Labs

Percentage of labs reporting

Whole # | Decimal # | Draw Type | Draw Date | Lab Analysis Date

Variables

Standard Deviations within Same/Related Lab Groups

Standard deviation of reported variables

Groups of same lab/parent lab

A B C D E F G H I J
Conclusions

- Lead programs are in good position to pilot state ELR development for other reportable conditions
  - HL7 readiness
  - High volume of reports
  - Basic data capture present
- Benefits to lead programs: data entry, timeliness, completeness

Conclusions – Cont.

- Only basic info (such as patient name and DOB) reliably present – wide variation in reporting of other variables
  - Between states
  - Between labs within a state
  - Between labs within same parent lab group

Actions

- Committee formed – one/more representative from each state
- Investigations include:
  - For individual labs, what are other states receiving, and is this different from my state?
  - How can we improve the general state of reporting in our region? For example, a coordinated approach to regional labs.
- Developed regional standard HL7 format
Regional Blood Lead Message

Health and Human Services Region X and \nRegional Blood Lead Reporting HL Message

Table of Contents

Table 1: Blood Lead Values

- Elevated
- Normal
- Temporary
- Non-Detectable
- Unknown

Table 2: Blood Lead by Age Group

- 0-5 Years
- 6-11 Years
- 12-17 Years
- 18+ Years

Table 3: Blood Lead by Race/Ethnicity

- White
- Black
- Hispanic
- Other

Table 4: Blood Lead by Gender

- Male
- Female

Table 5: Blood Lead by Occupation

- Worker
- Non-Worker

Table 6: Blood Lead by Education Level

- Less Than High School
- High School
- Some College
- College

Table 7: Blood Lead by Income Level

- Low Income
- Middle Income
- High Income

Table 8: Blood Lead by Housing Type

- Rent
- Own

Table 9: Blood Lead by Environmental Exposure

- Indoor
- Outdoor

Table 10: Blood Lead by Transportation

- Car
- Bus

Table 11: Blood Lead by Dietary Habits

- Vegetarian
- Omnivore

Table 12: Blood Lead by Medical History

- Yes
- No

Table 13: Blood Lead by Social Contact

- Regular
- Minimal

Table 14: Blood Lead by Travel History

- Domestic
- International

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