Adult Lead Poisoning and the RRP Rule in Iowa

Kathy Leinenkugel, MPA, REHS, MT
Lead Poisoning Prevention Program
  • Lead Certification Program
  • Pre-renovation Notification Program
  • Mandatory Blood Lead Testing
  • CLPPPs – local and state coverage
  • State Lead Data

Occupational Health & Safety Surveillance Program
## Iowa Housing Data

### 2000 CENSUS

<table>
<thead>
<tr>
<th>Age of Housing</th>
<th>Iowa Average</th>
<th>National Average</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-1940</td>
<td>31.6%</td>
<td>15.0%</td>
<td>3rd</td>
</tr>
<tr>
<td>Pre-1950</td>
<td>39.3%</td>
<td>22.3%</td>
<td>5th</td>
</tr>
<tr>
<td>Pre-1960</td>
<td>51.1%</td>
<td>35.0%</td>
<td>6th</td>
</tr>
</tbody>
</table>
PERCENT HOUSING BUILT BEFORE 1950

IOWA AVERAGE = 39.3%  U.S. AVERAGE 22.3%

SOURCE: 2000 CENSUS
Chapter 1- Mandatory Reporting of all Blood Lead Tests
Chapter 67- Mandatory Lead Testing
Chapter 68- Control of Lead Based Paint Hazards
Chapter 69- Pre-Renovation Notification Rule
Chapter 70- LRRP and Certification Requirements

www.idph.state.ia.us/eh/lead_poisoning_prevention.asp
Mandatory Reporting Blood Lead Tests

Iowa Administrative Code
Public Health [641] CHAPTER 1
REPORTABLE DISEASES, POISONINGS AND CONDITIONS, AND QUARANTINE AND ISOLATION

Last Update: 10/07/2009
1.6(1) Who is required to report.

a. Health care providers, hospitals, and clinical laboratories and other health care facilities are required to report cases of reportable poisonings and conditions. Health care providers are exempted from reporting blood lead testing if the laboratory performing the analysis provides the report containing the required information to the department.
1.6(2) What to report.

Each report shall contain all of the following information:

a. The patient’s name.
b. The patient’s address.
c. The patient’s date of birth.
d. The sex of the patient.
e. The race and ethnicity of the patient.
f. The patient’s marital status.
g. The patient’s telephone number.
h. The name and address of the laboratory.
i. The collection date.
j. The analytical result.
1.6(2) What to report.

Each report shall contain all of the following information:

k. In the case of blood lead testing, whether the sample is a capillary or venous blood sample.

l. For conditions not identified by a laboratory analysis, the date that the condition was diagnosed.

m. The name and address of the health care provider who performed the test. (i.e. ordered the test)

n. If the patient is female, whether the patient is pregnant.

o. In the case of occupational conditions, the name of the patient’s employer.
Occupational Health & Safety Surveillance Program

- Fundamental Surveillance
- Pesticide Expanded Program
  - Iowa Statewide Poison Control Center
- Fatality Assessment & Control Evaluation (FACE) Expanded Program
  - Subcontract with University of Iowa Injury Prevention Research Center (IPRC)
  - Iowa Office of the State Medical Examiner

ABLES
NIOSH MMWR: 2007 Annual state prevalence rate categories for state resident adults with elevated blood lead levels (≥25 µg/dL) per 100,000 employed adults aged ≥16 years.

States Rates ≥ 20: AL, IN, TN, PA, KS, MO, IA
Reduce to zero the prevalence of BLLs ≥25 ug/dL among adults

**National Rates:**
- 1994: 14.0
- 2005: 7.2
- 2006: 7.4
- 2007: 7.4
- 2008: TBA

**Iowa Rates***:
Healthy People 2010
National Public Health Objectives

- Reduce to zero the prevalence of BLLs ≥25 ug/dL among adults

**National Rates:**
- 1994: 14.0
- 2005: 7.2
- 2006: 7.4
- 2007: 7.4
- 2008: TBA

**Iowa Rates***:
- 1998: 19.9
- 2005: 16.3
- 2006: 15.5
- 2007: 20.3
- 2008: 17.8

*IDPH Data
7 employers accounted for:

- 80% of BLLs $\geq$ 10 in 2006
- 86% of BLLs $\geq$ 25 in 2006
- 76% of BLLs $\geq$ 10 in 2007
- 85% of BLLs $\geq$ 25 in 2007

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brass foundry, plumbing fixtures and trim mfg</td>
<td>Brass &amp; aluminum foundry, industrial machinery mfg</td>
<td>Iron &amp; brass foundry, valve and pipe fittings mfg</td>
<td>Lead smelter, primary &amp; storage battery mfg</td>
<td>Lead smelter, primary &amp; storage battery mfg</td>
<td>Storage battery mfg, automotive parts mfg</td>
<td>Lead pigment mfg, industrial inorganic chemicals mfg</td>
</tr>
</tbody>
</table>

Also Note Company #8: Stain Glass Artisan Company
The Lead Certification Program requires training and certification of lead professionals, including lead inspectors, elevated blood lead inspectors, visual risk assessors, lead abatement contractors, lead abatement workers, and lead safe renovators.

Certified lead professionals must provide services according to practices outlined in state rules.
Certification Program & RRP
(Renovation, Repair, and Painting Certification)

Iowa Chapter 70

EPA Certification Vs Iowa Certification
### RRP: What’s the difference...?

<table>
<thead>
<tr>
<th>Difference</th>
<th>EPA</th>
<th>Iowa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must be certified if disturbing more than:</td>
<td>6 ft(^2) interior and/or 20 ft(^2) exterior</td>
<td>1 ft(^2) combined interior AND exterior</td>
</tr>
<tr>
<td>Certification/Renewal</td>
<td>$300 every 5 years (firms)</td>
<td>Application yearly, firms $0, individuals $60; refresher course every 3 years</td>
</tr>
<tr>
<td>Compensation-only?</td>
<td>Yes</td>
<td>No, even volunteers must be certified</td>
</tr>
</tbody>
</table>
Exemptions to RRP Certification:

- Work done by owner on owner-occupied property
- New construction or properties built after 1978
- Disturbing less than 1 $\text{ft}^2$ of painted surface area
- Properties that have had a lead free-inspection by an Iowa Certified Lead Inspector, with documentation to verify
- Properties federally classified as elderly living residences
Renovator Requirements

- Work Safe
- Work Wet
- Protect yourself PPE
- Protect others
  - Post Signs
  - Containment
- Do Not Use Prohibited work methods.
- On-the-job training required for workers
- Perform verification card testing after the job is complete

CAUTION

RENOVATION WORK

DO NOT ENTER WORK AREA UNLESS AUTHORIZED
NO SMOKING, EATING, OR DRINKING
Prohibited Work Practices

- Abrasive blasting without HEPA recovery.
- Uncontained water blasting.
- Heat guns > 1,100 °F
- Machine sanding / grinding without HEPA recovery
- Open flame burning
- Methylene chloride paint strippers in unventilated areas.
- Dry scraping, except around electrical outlets and fixtures.
Prohibited Work Practices continued

- Allowing non-certified persons or persons who are not trained by the certified renovator on site
- Performing non-recognized EPA kit testing
- Performing work practices not in accordance with the law
- Performing renovation cleaning that is not in accordance with the law
Each firm must have their certificate available on site.

Each Individual Lead Safe Renovator must have their certificate available on site.
Iowa RRP

- 2nd state authorized by EPA to implement RRP
- Estimate 15,000 workers initially need to comply with the rule, including workers in:
  - Construction / Demolition
  - Painting/wall covering
  - Renovation & repair
  - Electricians
  - Plumbers
- As of June 2011, IA has certified (1st Year)
  - 45 Trainers
  - 3,500 firms
  - 5,500 individuals
  - 1,500 – 2,000 additional trained only
How will Increased Awareness (Training) Impact ABLES Program?

- More workers aware of potential lead exposure risks
- Potential to increase requests by adults to be tested for lead exposure
How will Increased Awareness (Training) Impact ABLES Program?

- Need to educate medical providers regarding lead exposure risks for construction workers and provide testing.

- Increased likelihood of test results for work-related exposures coming through from small contractors/self-employed workers:
  - More testing done by general medical providers rather than occupational med clinics.
  - Reports to IDPH less likely to contain work-related info.
Outgoing listserv from IDPH CADE to >1600 medical providers and public health contacts across the state

Released weekly

Typically 3-5 very brief articles (1-3 paragraphs) with links to additional information
Items for this week’s EPI Update include:

- Influenza testing and reporting reminders
- Elevated adult blood lead linked to home renovations
- Missionaries may be at risk
- Meeting announcements and training opportunities

Elevated adult blood lead linked to home renovations

Recently an Iowa adult was reported to have a blood lead level over 40 µg/dL (adult lead levels should be less than 10 µg/dL). This lead exposure likely occurred during renovations and repairs done on their 1900’s home. Elevated lead levels increase the risk of high blood pressure, kidney disease, cardiovascular disease, and other health problems.

Anyone involved with or around construction, renovation, or repair work needs to know how to protect themselves against lead exposure. This is especially important when working with walls or surfaces painted with lead-based paints. One should assume there is lead-based paint in any home built before 1978 unless environmental testing has proved otherwise. Lead may also be present in commercial buildings and structures. Visit www.idph.state.ia.us/eh/lead_poisoning_prevention.asp or www.cdc.gov/niosh/topics/lead/ for more information.

Medical providers should be aware of this risk, assess appropriate patients for possible lead exposure, and offer venous blood lead testing. For more information and assistance, contact the IDPH’s adult lead program at 800-972-2026.
Iowa ABLES - #s Tested

- # Tested unknown if work-related
- # Tested known work-related

Iowa Adult (16 yr +) Residents Tested in Calendar Year

2008:
- 1731 known work-related
- 861 unknown if work-related

2009:
- 1030 known work-related
- 1375 unknown if work-related

2010:
- 1950 known work-related
- 947 unknown if work-related
Iowa ABLES - #s EBL

# tested <10 ug/dL  # tested >= 10 ug/dL

2008: 1714 (1714) 694 (1714)
2009: 1711 (1711) 694 (1711)
2010: 2169 (2169) 736 (2169)

Iowa Adult (16 yr +) Residents Highest Test of Calendar Year
Iowa ABLES - #s Work-related EBLs

- **EBLs (10+) not work-related or unknown**
- **EBLs (10+) work-related**

<table>
<thead>
<tr>
<th>Year</th>
<th>Work-related EBLs</th>
<th>Non-work-related or Unknown EBLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>710</td>
<td>168</td>
</tr>
<tr>
<td>2009</td>
<td>620</td>
<td>74</td>
</tr>
<tr>
<td>2010</td>
<td>679</td>
<td>57</td>
</tr>
</tbody>
</table>

Iowa Adult (16 yr +) Residents Tested BLL ≥ 10 ug/dL in Calendar Year
Iowa ABLES - #s possible construction?

- **Potential Construction BLLs <10**
- **Potential Construction EBL >= 10**

<table>
<thead>
<tr>
<th>Year</th>
<th>Potential Construction BLLs &lt;10</th>
<th>Potential Construction EBL &gt;= 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1731</td>
<td>168</td>
</tr>
<tr>
<td>2009</td>
<td>1030</td>
<td>92</td>
</tr>
<tr>
<td>2010</td>
<td>1950</td>
<td>59</td>
</tr>
</tbody>
</table>

(Work Relatedness Unknown or Industry Unknown)
<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Adults tested</td>
<td>2592</td>
<td>2405</td>
<td>2905</td>
</tr>
<tr>
<td># All Persons Tested ID’d Construction Industry (NAICS 23; SIC 15-17)</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td># All Persons Tested ID’d Construction Industry &amp; EBL (10+)</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>
8 Iowa Construction Cases 2010

- **Gender**
  - 7 men, 1 woman

- **Race/Ethnicity**
  - 7 White, non-Hispanic
  - 1 race unknown, probably not Hispanic

- **Age**
  - range: 40-74  Ave: 56 yr

- **BLL range**
  - 16 – 51 ug/dL  Ave: 32 ug/dL

- **Status**
  - 7 incident cases; 1 prevalence case:
    - 1 had prior test, prior year in IDPH ABLES
    - 1 had prior testing, not in database (35 yr prior)

- **Time of Year**
  - Range: Apr – Dec  Apr – Aug: 7
8 Iowa Construction Cases 2010

- Work-relatedness:
  - 7 coded as 1 (yes)
  - 1 coded as 3 (both work & non-work: retired carpenter & shoots/reloads firearms)

- Industries
  - 236118 – Residential Remodelers: 5
  - 238350 – Finish Carpentry Contractors: 1
  - 238320 – Painting & Wall Covering Contractors: 2

- Occupations
  - 6230 – Carpenter
  - 6420 – Painter
  - 8140 – Solderer

- Type of Construction
  - 7 – residential
  - 1 – industrial
Case Study 1 – May 2010:

- 63 yo single male, large metro area

- Unemployed in usual occupation, but doing renovation at his 1890 family home
  - Used Heat Gun & dry-scraping on exterior porch, multiple layers of paint, lots of dust over 2-3 week period of time
  - Used household vacuum to clean up floor & carpet
  - No respiratory protection used

- Contacted state public health asking to be tested – no health insurance
Case 1...

- Referred to local public health for initial lead testing
- Symptomatic
  - Vomiting, lethargic to the point that he stopped doing work before finishing prep & painting
- LPH did blood lead test May 27 = 42 ug/dL
  - approx. 1 week after stopped renovation work
Follow-up phone interview by ABLES
- Additional symptoms – referred back to LPH for medical evaluation through community health clinic
- Concern other health problem

Seen July 2 at clinic
- blood glucose was >700 – admitted to hospital
- Repeat BLL = 23 ug/dL (5 wks after work stopped)

Lost to follow-up per clinic Nov. 2010
Case Study 2 – June 2010

- 48 yo male, large metro area
- Self-employed, small residential painting contractor, worked 20 years in industry
- Contacted his medical provider to ask for a blood lead test
  - 1st test done in 20 years per PCP
  - No prior BLLs on record IA ABLES
  - BLL = 25 ug/dL
Case Study 2 …..

- Records show he had taken training, but not completed certification process as of June 2010

- Subsequently had complaints filed by other contractors that his company was in violation of RRP and lead-safe work practice rules
  - IDPH Lead Bureau investigation/enforcement
  - 3 known workers no record of testing as of June 2011

- Did certify his firm & himself Oct. 2010
Case Study 3 – July 2010

- 52 yo female, rural area

- In April, began stripping old paint from pre-1978 house renovating to use as rental property

- Worked 10-12 hr/day for 2 weeks

- During that time she experienced episodes when she could not control her arms, would take a break, then continue

- Finally had to stop work on house mid-May
Had similar symptoms in prior years when worked on other houses – she thought fibromyalgia & menopause because of various transient symptoms (muscle aches, shaky, diarrhea, vision blurry, numb hands, joint pain, mental fog) – never confirmed, treated symptomatically

Symptoms had resolved over time prior years

When symptoms did not resolve this time, decided to look for more information
Heard some comments about lead poisoning, did computer search, and decided to ask her medical provider for a blood lead test (only has major medical insurance, so self-pay)

Tested July 22 – 8 ½ weeks after stopped renovation work

Also called Iowa Statewide Poison Control Center for advice on 7/23

Blood lead test results: 24 ug/dL
Doctor’s office called ABLES 8/4, ABLES did phone follow-up with patient 8/5

Patient called ABLES again 10/14

Still having major symptoms:
- Loss of balance (staggers, falls)
- Joint pain & stiffness
- Thumb joint “frozen”
Case Study 3

- Had not done any renovation work since mid-May because too ill

- Did not get a repeat test at PCP because of self-pay cost (> $100) but planned follow-up for complete neurological and medical evaluation with a specialist

- Concern: possible permanent neurological impairment from multiple (undocumented) lead exposures over time, or an underlying condition exacerbated by lead exposure
Case 4 – June 2010

- 51 yo male, small metro area

- Sought med care early June because he “felt the same as the last time he had this” – a history of lead poisoning 35 yr prior per patient (no records that clinic or IA ABLES)

- Symptoms: headache, fatigue, nausea

- BLL drawn June 4 = 51 ug/dL
Per clinic: patient told them tearing out old houses

Clinic recommendations: wear respirator or mask when doing demolition, retest 1 mo

ABLES received report 7/1
Phone call returned by patient 7/2:

- Patient expected the symptoms to go away quite soon if he wore his fume mask on the job; stated that the exposure was because he was using a heat gun to soften paint on window sashes w/o PPE
Case 4 …..

- Owner of a residential remodeling company with unknown # workers

- He had taken a Lead Safe Work Practices class 4 yr prior, but was not yet certified under the new RRP regs

- Not happy about the new RRP regs
Subsequent blood lead tests:
- 6/4/10 – 51 ug/dL (original test)
- 7/15/10 – 32 ug/dL
- 8/31/10 – 51 ug/dL
- 11/1/10 – 21 ug/dL

Still not certified under RRP as of June 2011
Residential construction activities are exposing workers in Iowa to lead.

Additional awareness activities needed for construction workers – especially those doing residential work and small firms - and medical providers.
Iowans Urged to Hire Only Certified Lead-Safe Renovators

The Iowa Department of Public Health (IDPH) reminds Iowans to ask if their home painting and remodeling contractors are certified as a lead-safe renovator. Since April, 2010, Iowa law (Iowa Administrative Code 641, Chapter 70) has required all companies or individuals who work in homes and child-occupied facilities (daycare centers, preschools, kindergartens) built before 1978 to be certified by IDPH as a lead-safe renovator. The ‘grace period’ for enforcement of the law ends this year and enforcement of the law will begin September 1.

To learn more about the lead-safe renovator certification requirements, visit [www.idph.state.ia.us/eh/lead_poisoning_prevention.asp#regulations](http://www.idph.state.ia.us/eh/lead_poisoning_prevention.asp#regulations).
Conclusions

- Expect test numbers to continue to rise as more workers receive training and certification.
- Need to identify options for workers without health insurance to obtain low-cost testing.
- Rates of exposure still not established for construction industry in IA.
  - Need to increase work-related info/industry reporting with BLL reporting – working with labs, med providers.
Iowa ABLES & OHSSP Staff

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Rob Walker: robert.walker@idph.iowa.gov

Rita Gergely – IDPH Lead Bureau Chief
www.idph.state.ia.us – follow lead program link

800-972-2026

(Note Emails Have Changed!)