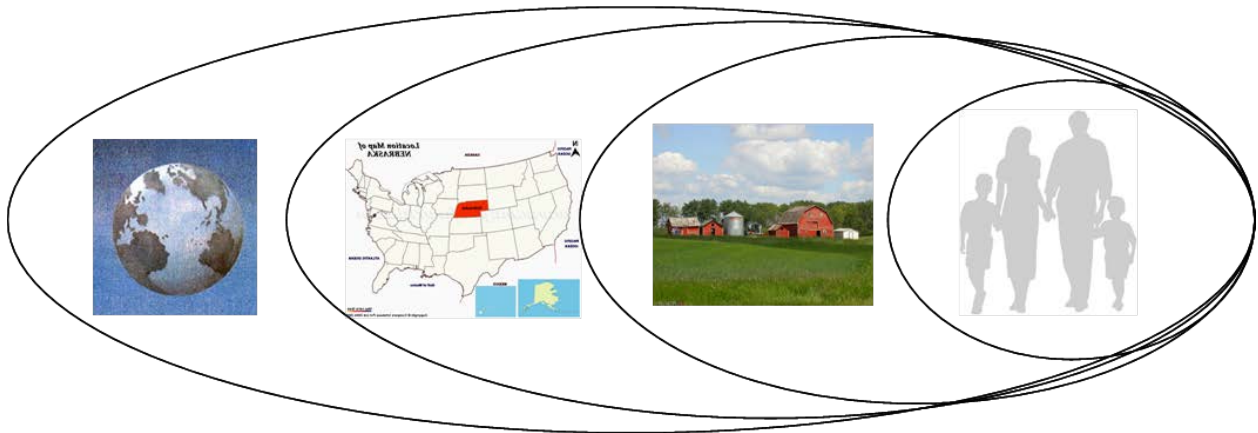


Solutions District Health Department

Serving Fillmore, Gage, Jefferson, Saline, and Thayer counties.

Environmental Health Status Reports



Healthy Housing Series

- Lead
- Radon
- Mold
- Rental Properties



February 2009

Overview

Lead:

- Lead is a toxic heavy metal that is very dangerous for all residents, but especially for children.
- It was once widely used in paint and other products, but is now banned for most uses.
- It remains a problem because the original layers of lead-based house paint and plumbing solder are still present.
- The lead becomes more “accessible” as the material breaks down over time, or during a major renovation project, contaminating the house dust, soil and tap water.
- Children can also be exposed to lead if their parents or primary care-takers work in lead industries.
- A number of risk factors for lead exposure exist in excess in the PHS district, including an aging housing stock, a prevalence of in-home day cares, low lead testing rates, a number of local industries that use lead in their work, and limited resource for intervention and case management.

Radon:

- Radon is a radioactive gas that is colorless, odorless, and tasteless.
- It is a natural by-product of uranium, which exists naturally in certain geologic formations.
- Radon enters the home through cracks in the foundation and other inlets.
- Radon breaks down and gets breathed in, where it causes lung damage. Over time, residents who are exposed to high levels of radon can develop lung cancer regardless of whether they smoke.
- The bedrock under the five counties in this service area is naturally very high in uranium, making this region a very high risk area for radon exposure.
- Very few homes are tested for radon, which is necessary to determine whether radon is present at unhealthy levels in the home.
- Radon levels can vary widely between homes, and can be present in high amounts regardless of the home’s age.

Mold:

- Mold is a respiratory and skin irritant and asthma trigger. It can be very dangerous depending on the mold type and amount, and on the person’s sensitivity to mold.
- Mold can grow on any surface where enough moisture is present.
- If the area is dried up, the mold will go dormant (stop growing) or die, but this does not do anything to reduce its ability to irritate a person or cause asthma attacks.
- Most materials cannot be cleaned up once mold starts to grow on them; these must instead be discarded. This is because mold essentially decomposes whatever it is growing on.

Rental Properties:

State housing codes and landlord-tenant statutes regulate how a rental property is to be kept up in order for it to be healthy for the occupant and the general public. A large number of calls to PHS each year come from tenants whose rental units are reportedly unsafe or unhealthy. Mold and pests are the most common problems reported.

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Lead (Pb)

Statistics

Housing Age.

The average age of the local housing stock is a major risk factor for lead exposure. This is because homes and apartment buildings built before 1979, and especially before 1950, were often coated inside and out with lead-based paint. As the paint chips, peels, cracks and crumbles, the house dust and foundation soil becomes contaminated with dangerous levels of lead. Children breathe it in and get it on their hands and in their mouths. If there are paint chips present they may also eat those, or even chew on window sills and other painted surfaces.

Housing Statistics for PHS District, compared to state and national statistics <i>Data from the 2000 Census</i>						
	# occupied housing units	% pre-1950	% pre-1959	% pre-1979	Median age, owner occupied	Median age, renter occupied
Fillmore	2689	51.06%	61.96%	86.69%	1950	1946
Gage	9316	44.51%	54.43%	83.04%	1956	1953
Jefferson	3527	55.83%	63.96%	88.23%	1940	1951
Saline	5188	47.84%	57.44%	84.08%	1951	1956
Thayer	2541	53.76%	64.62%	88.11%	1944	1948
Nebraska	666184	31.55%	43.29%	75.90%	1964	1967
US	105480101	22.17%	35.06%	67.36%	1971	1969

Table 1. A higher percentage of the housing stock in all five PHS district counties were built before 1979, 1959 and 1950, compared to state and national percentages. The Median age of both owner- and renter-occupied housing units is significantly older in each of the five PHS district counties as compared to both the state and national medians. **This represents an increased risk for residential lead exposure among PHS residents.**

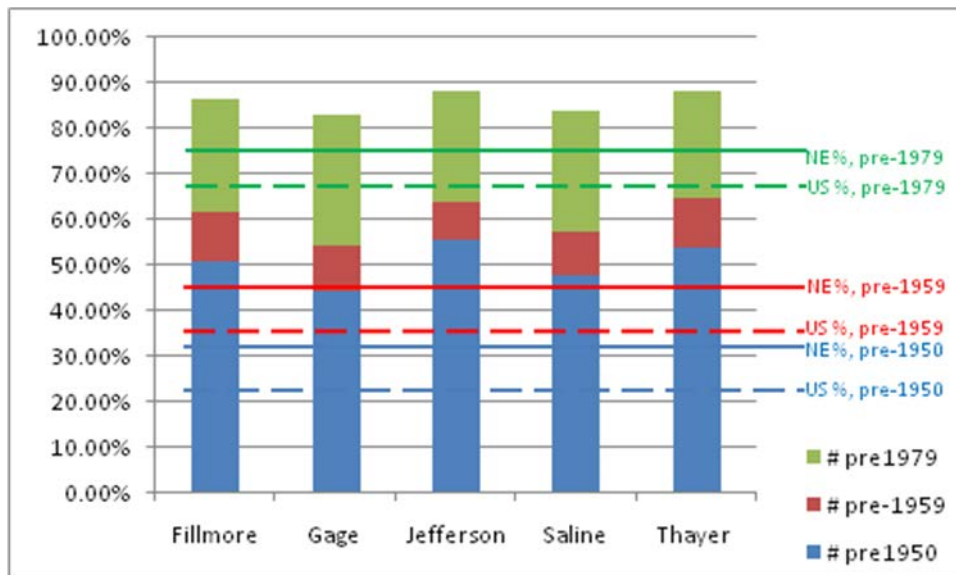


Figure 1. Graphic representation of Table 1.

It is also important to note that roughly 40% of licensed child care programs in the PHS district are operated from homes (as opposed to commercial sites). Unlicensed child care arrangements are also often “in-home” types, with children staying in the homes of friends and family members while the parents work. This means that the high percentage of old housing units carries extra weight and extra risk – **children under 6 years old are very likely to be spending their entire day and night in high risk environments for lead exposure.**

EBLL rate

EBLL rate is the percentage of those children who are tested for lead that have lead levels that are 10 or higher. A high percentage suggests that the local risk for lead exposure is being realized – lots of local children are likely being exposed to lead.

County	2004		
	# w/ EBLL	# screened	%
FILLMORE	5	83	6.02
GAGE	6	179	3.35
JEFFERSON	10	59	16.95
SALINE	15	283	5.30
THAYER	1	12	8.33
PHS	37	616	6.01
NE	520	19,985	2.60

Table 2. Each of the five counties and the district as a whole has a higher EBLL rate than the state.

SE BLL rate

SE BLL rate is the percentage of those children who are tested for lead that have lead levels between 5 and 9. A high percentage suggests that lots of local children are being exposed to lead. It also suggests that, without case management, the E BLL rate will remain high or even increase over time.

SE BLL rate is not typically tracked separately, so statistics are not available.

Testing Rates

Testing rate is the percentage of local children aged 6 and under who are tested for lead. A low rate means that lots of kids who should be screened for lead exposure aren't being tested. In areas with high risk for lead exposure, this also means that lots of children being exposed to lead aren't being helped – their levels are likely to continue to rise undetected.

The information available is primarily estimation, because lab tests are not all reported in the same way and local child populations are not always precisely measured.

County	2004		
	# 0-6 yrs (based on 2000 census)	# screened	%
FILLMORE	560	83	14.82%
GAGE	1933	179	9.26%
JEFFERSON	627	59	9.41%
SALINE	1213	283	23.33%
THAYER	461	12	2.60%
PHS	4794	616	12.85%
NE	N/A	19,985	14.03
US	N/A	N/A	12.81

Table 3. From state health and national lead reports. Comparing testing rates to E BLL rates, the picture is particularly troublesome for Jefferson and Thayer counties, where the E BLL rates are high but the testing rates are low.

One mechanism for reporting and tracking lead lab results is the Nebraska Electronic Data Surveillance System. We do now know what percentage of the labs ordered are actually entered into this system, so we use it primarily to direct case management, and to provide us with one view of data and trends over time.

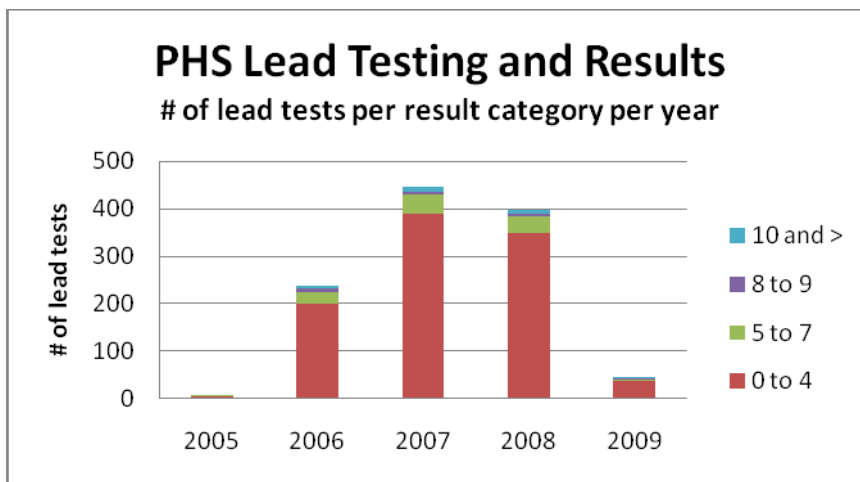


Figure 2. As of February 18, 2009. 2005 data is also incomplete, since NEDSS was not fully operational for lead labs during this year. PHS spearheaded a major grant-funded lead testing initiative in 2007 which resulted in almost 300 children being tested for lead in day cares and at immunization clinics. This program, which also had an education/outreach focus, is probably largely responsible for the uptick in 2007 (as is increased lab entry into the system).

Anecdotes

By crudely applying the risk of lead exposure due to housing age to the child population, factoring in the proportion of those tested in the past that have had significant lead exposure, the following risk table is the result:

	Not getting tested	Not getting tested, at-risk*
Fillmore	466	233
Gage	1481	740.5
Jefferson	510	255
Saline	981	490.5
Thayer	409	204.5
TOTAL	3831	1923.5

Though not scientifically valid, this table does give us a snapshot of the children in our district who are potentially at risk for living with dangerous lead exposure but are left without any intervention to help them stay safe and healthy. Detection is a crucial first step to make sure that children are provided with an environment that gives them their best chance at health and success.

Awareness – among parents, child care providers, health care providers, law makers – is also key to protecting these children. Parents can work to make their home environment lead-safe whether they have had their child tested for lead or not. Child care providers can do the same in their facility. Health care providers can insist on compliance with the guidelines for lead testing, and counsel the parents on being proactive about identifying and controlling lead hazards in their homes. Law makers can ensure that rules

and regulations continue to strengthen the protections and resources available to help parents give their children a lead-safe environment.

Programs and Services

The state health department, prior to 2008, provided elevated blood lead level investigation services for children whose blood lead levels were 15-20 ug/dL or higher (depending on the type of blood test). Funding losses severely restricted this program, which was never designed to be proactive or preventive in nature.

PHS District Health Department initiated a number of lead exposure/poisoning prevention programs to fill gaps and increase reach into our district, including having a staff person trained and certified as a Lead Risk Assessor/Inspector.

Help Me Be Lead Free, 2005-2007:

- Free lead testing in day cares, immunization clinics
- Free workshops and manuals for day care providers
- Free lead hazard screens, hazard control plans for 10 day cares

Help Me Be Lead Free, 2009 (pending final grant approval):

- Free lead test kits for health care providers
- Free training manuals and consultations for DIY home renovators
- Free lunch-and-learns for health care providers and home health visitors

EBLL investigations and SEBLL case management:

- Free consultation for children with blood lead levels ≥ 5 ug/dL
- Free in-home lead hazard screen for ≥ 10 ug/dL
- Free follow-up for children with history of lead exposure

We are always looking for additional ways to improve and expand these programs and services, as well as funding sources to help sustain them.

Radon

Statistics

	% above 4 pCi/L	% above 10 pCi/L	% above 20 pCi/L	Highest pCi/L
Fillmore	71%	22%	4%	22
Gage	78%	35%	10%	50.9
Jefferson	75%	25%	6%	60.4
Saline	73%	28%	7.6%	45.9
Thayer	68%	27%	3%	23.9

Figure 3. Data up through 2005, from state radon report.

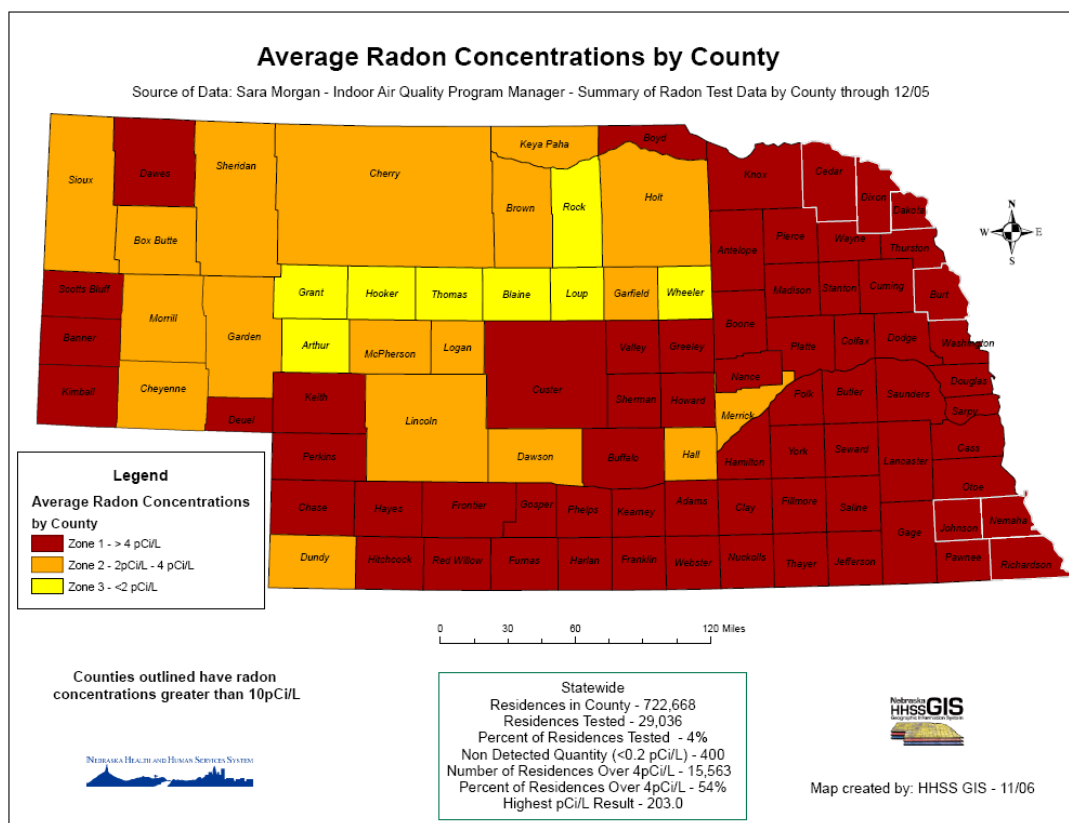


Figure 4. Radon map from state health department's radon report.

PHS analyzed testing "penetration" in 2007, using radon test data up through 2004.

County	Tests run ÷ # dwellings
Fillmore	4.6%

Gage	4.3%
Jefferson	5.8%
Saline	4.8%
Thayer	6.0%

Figure 5. Based on 200 census for # of dwellings, and a summary of tests run by Alpha Energy Labs (the most commonly used lab in this area) up through 2004. It does not account for duplicates, nor does it account for tests run by other labs.

Radon tests fluctuate over time, spiking when news media covers the issue with greater emphasis or when free test kits are provided, and declining when the issue fades from public view.

Anecdotes

Radon is a difficult public health issue to convey to residents. This is because 1) it is an invisible threat, 2) it represents increased risk of health problems (as opposed to certain health impact), and 3) it can be costly to mitigate.

Just as with lead-based paint hazards, home-owners tend to adopt the “what I don’t know can’t hurt me” attitude, which is much less costly in the short-term than dealing with the risk up front. Of course this is not based in reality, since the long-term effects of radon exposure can be extremely costly in both health and financial terms.

Programs and Services

The state health department offers free or low-cost radon test kits from time to time, as do county extension offices through periodic grant programs. The state also certifies and licenses radon testing and mitigation companies.

PHS offers consultation on radon testing, test result interpretation, and mitigation options.

Mold

Statistics

The only statistic related to mold that is tracked annually is complaints and reports filed with PHS District Health Department.

	2004-5	2005-6	2006-7	2007-8	2008-9 (incomplete)
% of total calls that related to mold	15%	2.4%	15.4%	6.3%	16.1%

Figure 6. Number of calls that related to mold divided by the total number of calls (complaints, inquires, requests, reports).

Most of these relate to rental properties, with the remaining coming from home-owners concerned about their home. A small percentage of calls come from employees concerned about their workplace environment.

Anecdotes

As would be expected, mold calls are highest in the spring and fall months, when Nebraska receives its highest rainfall and flood events.

Programs and Services

PHS District Health Department offers consultation to residents concerned about the health effects of mold, prevention, and mitigation. We also send out news releases about mold prevention after major flood events.

There is no state-sanctioned licensing, training or certification system for mold contractors – anyone can claim to be one regardless of their actual experience or training levels. Likewise, anyone can set up a mold training or certification program for contractors without any oversight of the actual quality or effectiveness of their program. Mold mitigation is very much a “buyer-beware” service.

Rental Properties

Statistics

Most of the rental property complaints are about mold or pests. The statistics on mold complaints from tenants are not tracked separately from general mold calls.

Anecdotes

Many complaints filed with PHS about rental properties have at least two sides to the story. Often times we find that the owner may not be fulfilling their responsibility to provide a safe, healthy environment for their tenants, and the tenant may also be in violation of their responsibilities. PHS keeps this in mind when responding to all rental property complaints.

Programs and Services

PHS provides consultation and assistance to residents and property owners on complaints and compliance with rental property regulations that relate to health and safety. In some cases this includes an on-site visit upon request.

Summary

Priorities

Future Plans