

**Technical Assistance
for Code Transformation
and Innovation Collaborative
(the TACTIC Project)**

Final Report

by

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for the

**Michigan Department of Health and Human Services,
Child Lead Exposure Elimination Innovations Grant**

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**National Center for
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Introduction

The Technical Assistance for Code Transformation and Innovation Collaborative (TACTIC) Project includes a review and recommendations of how lead poisoning prevention activities can be integrated into existing housing codes in four Michigan jurisdictions: Battle Creek, Detroit, Flint, and Grand Rapids. Implementation of the recommendations will occur during 2019-2020 pursuant to a newly awarded grant to the National Center for Healthy Housing (NCHH) from the State of Michigan.

This final report for 2018-2019 includes information and recommendations for the State of Michigan, as well as the full reports for Battle Creek, Detroit, Flint, and Grand Rapids (the jurisdiction-specific reports are in the attachments).

Review of Michigan Requirements

Michigan Lead Abatement Act

Although the Michigan Lead Abatement Act (“Act 368”)¹ and associated regulations² are consistent with EPA’s lead abatement regulations, they fail to address how housing codes are related to lead-based paint hazards. Updating Act 368 should include requirements related to both housing code inspections and compliance, because these activities likely involve identification of potential lead hazards as well as their repair. For example, a code violation involving deteriorated paint would likely involve repair of that deteriorated paint, whether it contains lead or not. Deteriorating lead paint and its repair to obtain code compliance could result in generation of lead dust, which would not be covered by Act 368.

Rather than separate maintenance and housing improvements that are not expressly “intended” to address lead paint, Act 368 should directly address the situation where building improvements could generate lead-based paint hazards. This might be most easily done by state enforcement of the U.S. Environmental Protection Agency’s (EPA) Renovation, Repair, and Painting (RRP) Rule. Such state enforcement has been proposed in the past but not implemented to date; it is reportedly under further consideration. The RRP Rule regulation does address repairs not included as “abatement”; instead, it addresses routine housing

¹ Public Health Code Act 368 of 1978 Part 54a The Lead Abatement Act as Amended.

² Department of Community Health: Health Legislation and Policy Development Lead Hazard Control by authority conferred on the department of community health by sections 2226, 5461 to 5464, 5466, 5468 to 5470, 5473a, and 5475 to 5477 of 1978 PA 368, and Executive Reorganization Order No. 1996-1, being MCL 333.2226, 333.5461 to 333.5464, 333.5466, 333.5468 to 333.5470, 333.5473a, 333.5475 to 333.5477, and 330.3101.

improvement and maintenance. Seamless enforcement of both abatement and RRP requirements are likely to bring the greatest benefit to children.

For example, it makes little sense to regulate replacement of lead-painted windows as an abatement activity and then fail to fully enforce lead-safe work practices for that same window replacement activity merely because it is not an expressly stated “abatement job.”

Act 368 *does* include some provisions about education of homeowners and contractors in lead-safe work practices (Sec. 5473a, the Pre-Renovation Education Rule³), but it does not appear to impose any requirements beyond those required by EPA’s Renovation, Repair, and Painting Rule. The State does not enforce the lead-safe work practice, trainer accreditation, and certification parts of the EPA RRP Rule, although it could, as approximately 12 states have already done (see <https://nchh.org/information-and-evidence/healthy-housing-policy/national/keystone-federal-policy/rrp/authorized-states/>).

The State of Michigan does have requirements to make rental units lead-safe, but these do not appear to be integrated with the State Housing Code.⁴

State Lead Action Plan

A more recent action plan from the Michigan Child Lead Exposure Elimination Commission provided these recommendations: “Adopt a consistent, statewide housing code enforcement model that is proactive and explicitly addresses exposure from lead based paint. Pass legislation requiring a contractor seeking a building or renovation permit on a pre-1978 home to provide proof of his/her Lead-Safe Certification as required by the federal Renovation, Repair and Painting Rule of 2010.”⁵

But the word “code” and how housing codes interact with lead abatement requirements is not described in Act 368 or in Michigan’s Statewide Housing Regulations (discussed in the next section). Instead, there is only general language regarding exemption of routine building maintenance or improvements, which is what most building codes cover. For example, Act 368 or the Housing regulations could reference the National Healthy Housing Standard (available at <https://nchh.org/tools-and-data/housing-code-tools/national-healthy-housing-standard/>), a model code that contains specific lead poisoning prevention requirements.

³ Michigan Lead Hazard Control Rule 325.99409.

⁴ Michigan Department of Health and Human Services. (2018, May). Lead penalty law flyer. Retrieved May 23, 2019, from https://www.michigan.gov/documents/lead/Landlord_Penalty_Law_Flyer_5-2018_V.1_ADA_625580_7.pdf

⁵ Michigan Department of Health and Human Services. (n.d.). *Child Lead Exposure Elimination Commission action plan*. Retrieved May 23, 2019, from https://www.michigan.gov/documents/mdhhs/CLEEC_Action_Plan_613287_7.pdf

Local Michigan Code Requirements and National Best Practices

Local housing codes vary widely across Michigan with regard to lead paint issues. Many have adopted the International Property Maintenance Code (IPMC), which essentially calls for all paint to be kept in an intact condition. For example, Grand Rapids has adopted the 2012 IPMC with local addenda for its rental housing stock code. The Grand Rapids code provides for all paint to be kept in an intact condition. The code states that if the loose paint can be demonstrated to not contain lead, it will no longer be a hazard but does not appear to separately require testing of paint, dust, or soil to determine lead content or risk. Such measurements are typically made by the health department only in the event that a child already has an elevated blood lead level or for certain other lead hazard control grant programs (from both state and federal funding sources). Other best practices for rental housing codes across the country provide for proactive paint, dust, or soil testing, instead of only requiring that after a child has been exposed.

Battle Creek has also adopted the IPMC. Battle Creek has a rental property registration process and a planned proactive scheduled inspection process, both of which are enormous strengths. This is superior to a solely complaint-driven reactive code inspection system, although many jurisdictions have moved to proactive systems in recent years. (Of course, the complaint-driven process needs to continue in order to respond to violations that may occur outside of the periodic scheduled inspection process.) The reactive system often relies on injuries, illnesses, or a resident's complaint and often occurs only after conditions have become quite serious. The reactive system also tends to produce more litigation and creates uncertainty in the rental market, because landlords may have to absorb unanticipated property repair and litigation expenses. It can also be problematic for residents who either don't know their rights or are fearful of exercising them (e.g., undocumented residents, tenants fearing eviction), leading to inequities. The presence of a proactive scheduled inspection process is a strength upon which the Battle Creek community (and other communities that have proactive systems) can build. The decrease in severe violations and high number of completed inspections demonstrate the existing effectiveness of this program.

Detroit's ZIP-code-by-ZIP-code lead inspection/risk assessment process appears to be unique in the nation. If substantial compliance is achieved by 2020 as intended, it will likely emerge as a best practice. Full lead-based paint inspections and risk assessments are currently required only in public housing, project-based Section 8 housing pursuant to the HUD Lead-Safe Housing Rule, units served by Detroit's Lead Hazard Control grant from HUD, as well as Michigan Department of Health and Human Services (MDHHS) HUD funding and MDHHS Medicaid funding.

Grand Rapids requires a certificate of compliance for its rental properties. Rental properties must be registered and undergo a visual inspection on a regular schedule. The schedules are on a two-, four-, or six-year cycle, with bad actors given two years and those with fewer violations given four to six years. Single-family properties are exempt from the two-year requirement. The

city began including single-family properties for the first time in 2012 and is currently undergoing the second round of six-year certifications for those properties. These provisions are important strengths that can be leveraged to help prevent lead exposure in children.

Flint also requires a certificate of compliance for its rental properties. Rental properties must be registered and undergo a visual inspection on a regular three-year schedule. These provisions are important strengths that can be leveraged to help prevent lead exposure in children. Flint is also undertaking a strategic review of its code compliance process and updating its housing code. The City of Flint has adopted the IPMC for its rental housing stock code. The IPMC provides for all paint to be kept in an intact condition, but does not require any actual testing of paint, dust, or soil to determine lead content. Flint has recently updated its code inspection systems as a result of a recent court decision.

Other best practices for rental housing codes across the country provide for proactive paint, dust, or soil testing, instead of only requiring testing after a child has been exposed. Several municipalities across the country have taken action to address lead hazards in housing through codes, which are reviewed briefly here.

For example, in December 2005, the City of Rochester (NY) passed an ordinance requiring regular inspections of most pre-1978 rental housing for lead paint hazards. Housing inspections typically occur every three years. To receive a certificate of occupancy, property owners must correct any identified lead hazard violations. Code inspectors examine paint condition and if it is intact, then they will collect dust wipe samples to ensure the home is safe for children. If paint is not intact, lead-safe work practices must be used, followed by dust testing to ensure cleanup is adequate (unless the home has been found to be free of lead-based paint). The city maintains an online database of all “lead-safe” units and properties granted a certificate. The code does not appear to have significantly impacted the housing market in Rochester, a key concern of code officials. Landlords have now accepted it as a routine cost of business. In the decade since the law passed, Rochester has inspected 141,474 individual dwelling units. Data show that blood lead levels in Rochester improved nearly twice as fast compared to the rest of the state. Eighty-six percent of inspections did not have an exterior lead violation, and 88% of those with a violation had complied with remediation as of June 30, 2016. For interiors, 95% passed the initial visual inspection, and among those with an interior violation, 86% had complied with remediation. Ninety percent of the units subjected to dust wipe testing (over 30,000 units as of 2016) passed. During the first 10 years, the city has issued 651 vacate orders for situations with severe hazards that put children at risk and 2,715 tickets for noncompliance. The frequency of violations has declined in recent years, as landlords know what to expect.

In Maryland, owners of older residential rental properties must register their properties annually with the Department of the Environment. Private inspectors issue a lead paint risk reduction certificate for each dwelling that passes the inspection, which includes both a visual examination of paint condition and dust lead testing. Rental properties covered by the law must

be free of chipping, peeling paint and lead-contaminated dust. To qualify for registration, owners must hire a certified contractor to address any defective paint and have an accredited lead paint inspector verify compliance before any change in occupancy. Inspectors issue a lead paint risk reduction certificate for each dwelling unit that passes the inspection. Whenever a tenant notifies an owner that there is defective paint or that there is a child with an elevated blood lead level, the owner has 30 days to conduct modified risk reduction measures and pass lead inspection certification. The rental property owner is responsible for temporarily relocating the family to a lead-safe or lead-free dwelling while the original dwelling undergoes risk-reduction measures. A key component in Maryland's substantial decline in childhood lead poisoning has been its strong public enforcement of the Maryland Reduction of Lead Risk in Housing Act coupled with local enforcement coordination and private enforcement actions by nonprofit agencies and *pro se* tenants. The Maryland Department of the Environment (MDE) files 500 to 800 violation notices annually, and a team from the state's attorney general's office is responsible for enforcing actions against noncompliant owners. Another highly effective best practice has been Maryland's policy of pursuing enforcement against a rental property owner's entire noncompliant housing portfolio once enforcement actions have been initiated against any one of the owner's properties. Local housing code enforcement and landlord licensing officials at the city and county level also help coordinate enforcement by referring noncompliant properties in their jurisdictions to MDE for enforcement of the registration and risk reduction requirements.

Rhode Island passed the Lead Hazard Mitigation Act in 2002 and implemented code regulations in 2004. Before any change in ownership or tenancy of a property and at least every two years, the property owner must have the property inspected and demonstrate via a certificate of conformance (COC) or a lead-safe or lead-free certificate that the dwelling is safe for children. Establishing lead safety includes dust testing. Under the law, rental property owners are required to attend a training on unsafe lead conditions, inspect/repair any lead hazards at their properties, make residents aware of their findings and actions, address residents' lead-hazard concerns, employ lead-safe work practices during maintenance, and verify each unit's compliance through a lead inspector. Typically, the owner must have the property inspected every two years and prove its safety for children by showing a COC or a lead-safe or lead-free certificate. Since the law's enactment the state has been challenged by compliance. In 2014, when the Providence Plan completed an evaluation of the Lead Hazard Mitigation Law, it found that only 20% of the covered properties had complied with the regulations within the first five years of implementation. Several cities have taken steps to improve enforcement. Providence, for example, created a separate division of Housing Court to address lead violations. The Inspection and Standards division reported that of 537 lead violation cases filed over the first four years, 484 resulted in corrective action. An analysis conducted by the Rhode Island Department of Health discovered that between 2012 and 2013, there was a significant decline in children with elevated blood lead levels in Providence. Notably, the declines coincided with the implementation of the building permitting requirements and the lead docket.

The National Healthy Housing Standard, a model code, provides that lead levels at or above federal regulatory limits are defined as hazards and must be remediated. Those levels include deteriorated lead paint (0.5% by weight or 1.0 milligram per square centimeter); dust (40 micrograms of lead dust per square foot [$\mu\text{g}/\text{ft}^2$] on floors and $100 \mu\text{g}/\text{ft}^2$ on windowsills). The standard also states that painted surfaces shall be maintained intact, and with the exception of paint that is tested and found not to contain lead-based paint, deteriorated paint at a property built before 1978 shall be repaired using lead-safe work practices and follow-up dust testing.

Many federally assisted housing programs, including public housing, Section 8 project-based assistance, and federally assisted housing rehabilitation programs, also require paint and dust testing, regardless of whether a child with an elevated blood lead level resides there.

Additional case studies of best practices across the nation for childhood lead poisoning prevention are available here: <https://nchh.org/who-we-are/nchh-publications/case-studies/lpp-stories-case-studies/>

Michigan Housing Law and Regulations

A review of the Housing Law of Michigan Act 167 of 1917, as amended,⁶ showed that it applies to “... each city, village, and township that, according to the last regular or special federal census, has a population of 10,000 or more.” Act 167 established a set of minimum standards that local jurisdictions can choose to exceed, pursuant to section 125.408.

The housing law appears to cover deteriorated paint but only in a very general way, as shown in section 125.486: “Health order; repairs to buildings, other structures. Whenever any dwelling or any building, structure, excavation, business pursuit, matter or thing, in or about a dwelling, or the lot on which it is situated, or the plumbing, sewerage, drainage, light or ventilation thereof, is in the opinion of the health officer or such other appropriate public official as the mayor may designate in a condition or in effect dangerous or detrimental to life or health, the health officer or such other appropriate public official as the mayor may designate may declare that the same to the extent he may specify is a public nuisance, and may order the same to be removed, abated, suspended, altered or otherwise improved or purified as the order shall specify.”

Furthermore, the housing law defines a “dangerous building” as: “(h) A building or structure used or intended to be used for dwelling purposes, including the adjoining grounds, because of dilapidation, decay, damage, faulty construction or arrangement, or for other reason, is unsanitary or unfit for human habitation, is in a condition that the health officer determines is

⁶ Housing Law of Michigan, Act 167 of 1917. Retrieved May, 23, 2019, from [http://www.legislature.mi.gov/\(S\(0x5hjswc2e0toqovkmnata10\)\)/documents/mcl/pdf/mcl-Act-167-of-1917.pdf](http://www.legislature.mi.gov/(S(0x5hjswc2e0toqovkmnata10))/documents/mcl/pdf/mcl-Act-167-of-1917.pdf)

likely to cause sickness or disease, or is likely to injure the health, safety, or general welfare of people living in the dwelling” (emphasis added).

In short, it appears that the existing regulatory framework in Michigan is focused on reacting to children with elevated blood lead levels to require a lead-safe housing unit. Clarifying the applicability of housing codes and housing law in Michigan offers an opportunity to prevent children’s blood lead elevations, which would constitute true primary prevention. Recommendations regarding Michigan’s definition of elevated blood lead level are discussed in the following section.

Michigan State’s Definition of Elevated Blood Lead Level

Elevated blood lead level is currently defined in Michigan using the antiquated Centers for Disease Control and Prevention (CDC) definition from the early 1990’s (10 µg/dL), not the CDC’s current definition. The State should consider aligning its definition with the current CDC definition of the blood lead reference value (5 µg/dL). This recommendation was also made in a recent report to the State.⁷

That report also states: “Reliable enforcement mechanisms for local, state, and federal codes, and standards for monitoring and investigations, are limited or do not exist, and lack of available funding is limiting current enforcement capacity and efforts.” More specifically, “The state should conduct, or require local code enforcement to conduct, a proactive rental certification program that includes lead inspection and risk assessment (LIRA) in high-risk housing until the housing is deemed to be lead-free. Rental certification shall not be valid for more than 5 years, and interim requirements, such as clearance testing, may be required to ensure occupant safety.” Furthermore, the report notes: “Michigan’s landlord penalty law addresses lead-based hazards under MCL 333.5475a in the public health code. The enforcement of this code is largely dependent on the municipality and county.”

Finally, the report concludes, “Current property maintenance code requirements in Michigan are inconsistent from municipality to municipality and the vast majority do not explicitly address lead paint hazards. Additionally, current code enforcement systems rely largely on a complaint-based model that can allow substandard conditions to endure, increasing the risks for exposure, especially in rental housing where tenants may be reluctant to make complaints for fear of eviction.” The report recommends that Michigan “adopt a consistent, statewide code enforcement model that is proactive and explicitly addresses exposure from lead-based paint and its causes.”

⁷ Child Lead Poisoning Elimination Board. (2016, November). *A roadmap to eliminating child lead exposure*. Retrieved May 23, 2019, from https://www.michigan.gov/documents/snyder/CLPEB_Report--Final_542618_7.pdf

Local Jurisdiction Recommendations on Lead-Based Paint and Housing Codes

We have prepared four jurisdiction-specific reports for Battle Creek, Detroit, Flint, and Grand Rapids, which are attached to this report. Key recommendations are provided here, although there is some variation in each.

1. Require testing of deteriorated lead paint and dust as part of the certificate of compliance or similar rental occupancy requirement to determine actual risk of lead hazards (or require a full risk assessment). The current practice of visually examining paint is insufficient, because the lead content of deteriorated paint and dust cannot be seen by the naked eye.
2. Change the existing housing code language to require remediation of deteriorated lead-based paint using lead-safe work practices and clearance dust testing in all rental units in which young children reside, are expected to reside, or could reside or visit. Such testing is most important in homes occupied by children under six years of age and/or pregnant women. The dust testing should comply with the recent lead dust guidance values established by the U.S. Department of Housing and Urban Development for its lead hazard control grantees.
3. Increase the number of housing code inspectors. Because dust and paint testing will take additional time, the number of housing code inspectors should be increased.
4. Train and certify housing code inspectors to collect paint and dust samples properly as part of code inspections instead of only doing so after a child has already been exposed.
5. Amend the language of the code violation notices to include deteriorated lead-based paint and elevated dust lead levels.
6. Involve the public in proposed changes to the code and seek comment.
7. Public education efforts should include the importance of deteriorated lead-based paint and the associated contaminated dust and soil it generates.
8. Changes to local codes should be evaluated by documenting changes in both housing quality and childhood blood lead levels and other metrics.
9. In jurisdictions such as Detroit, where a ZIP-code-by-ZIP-code process is in place that requires lead inspections/risk assessments of virtually all pre-1978 housing units, increase public education to promote compliance.

The Promise of Using Housing Codes to Advance Childhood Lead Poisoning Prevention

Housing quality is an important social determinant of health in general and childhood lead poisoning prevention specifically. Yet the housing and health sectors are typically governed by separate fragmented and isolated systems. Although today's housing codes originated over a century ago in the sanitation movement to combat health problems such as cholera, tuberculosis, and typhoid, current codes (with important exceptions described below) typically refer housing-related lead problems to local health departments instead of using the code process to identify and correct such lead hazards.

This secondary prevention reactive approach hampers the application of the existing housing inspectorate and code systems to detect and correct lead hazards in housing. Furthermore, housing codes in most jurisdictions are driven largely by complaint-driven reactive enforcement systems. In many cases, local housing codes are either silent on correction of lead hazards or defer to specialized lead risk assessments by local health departments.

Several municipalities across the country have taken action to address lead hazards in housing through codes, which are reviewed briefly here. In December 2005, the City of Rochester (NY) passed an ordinance requiring regular inspections of most pre-1978 rental housing for lead paint hazards. Housing inspections are triggered by a new certificate of occupancy, renewal of an existing certificate, a neighborhood survey, a referral by an outside agency, or a complaint. To receive a certificate, property owners must correct identified lead hazard violations. The city maintains an online database of all "lead-safe" units and properties granted a certificate. (Michigan also reportedly has such a registry.) The code does not appear to have significantly impacted the housing market in Rochester, a key concern of code officials. In the decade since the law passed, Rochester has inspected 141,474 individual dwelling units. Eighty-six percent of inspections did not have an exterior lead violation, and 88% of those with a violation had complied with remediation as of June 30, 2016. For interiors, 95% passed the initial visual inspection, and among those with an interior violation, 86% had complied with remediation. Ninety percent of the units subjected to dust wipe testing (over 30,000 units) passed. During the first 10 years, the city has issued 651 vacate orders for situations with severe hazards that put children at risk and 2,715 tickets for noncompliance. In the first five years alone, all target units in high-risk areas were inspected. These are all measurable goals that can be adapted to jurisdictions in Michigan through the TACTIC project.

In Maryland, owners of older residential rental properties must register their properties annually with the Department of the Environment. Private inspectors issue a lead paint risk reduction certificate for each dwelling that passes the inspection. NCHH has also evaluated this code.

Rhode Island passed the Lead Hazard Mitigation Act in 2002 and implemented code regulations in 2004. Before any change in ownership or tenancy of a property and at least every two years, the property owner must have the property inspected and demonstrate via a certificate of conformance (COC) or a lead-safe or lead-free certificate that the dwelling is safe for children. NCHH has evaluated this code (and others) as well.

Conclusion and Michigan Statewide Recommendations

Michigan has made notable advances in the efforts to address childhood lead poisoning. It is currently implementing a Medicaid CHIP amendment that is perhaps the nation's largest investment of healthcare funding to remediate lead-based paint hazards and lead in water service lines. Detroit's scheduled program to fully inspect and assess virtually all of its housing rental stock, Battle Creek's acquisition of lead paint expertise for its code inspectorate, Grand Rapids' formation of a robust local advisory commission headed by the mayor, and Flint's engagement of community-wide resources are all noteworthy best practices and worthy of consideration by jurisdictions across Michigan and the nation.

Statewide Recommendations

1. Michigan's housing laws and regulations should be updated to include explicit recognition that deteriorated lead-based paint constitutes a "nuisance" and therefore should be remediated; the implicit current requirement that housing should not cause disease and injury should be made explicit.
2. Local jurisdictions that have adopted the International Property Maintenance Code should consider also adopting by reference the National Healthy Housing Standard, which contains explicit lead-based paint requirements. Mere visual examination is inadequate, because lead content cannot be determined visually.
3. Michigan should update its definition of elevated blood lead level to conform to the current CDC definition of 5 µg/dL, instead of the antiquated definition from the early 1990s.
4. Michigan should train and certify housing code inspectors and equip them to conduct measurements of lead content in paint, dust, and soil, instead of relying on mere visual assessment of paint film condition.
5. Engage the public to obtain comment on proposed changes to the State's housing and health laws and regulations.
6. Increase public education and financial assistance to property owners to make their properties lead safe. The federal government has recently appropriated record amounts of funding for local governments to implement lead hazard control in low-income housing where risks are greatest. Flint is one of the jurisdictions to receive a federal HUD lead hazard control grant, and Grand Rapids and Detroit also have HUD grants.

Many Michigan jurisdictions also receive Medicaid funds for lead hazard control through MDHHS. Local jurisdictions across the state should apply for these funds, and the State of Michigan should follow suit and appropriate additional funding for local lead hazard control programs.

7. Adopt the recent HUD guidelines on allowable levels of lead dust following remediation of 10 µg/ft² for floors and 100 µg/ft² for windowsills for both abatement and interim control and renovation activities.
8. Evaluate the recent Medicaid/CHIP amendments and promote healthcare investment in lead-safe homes. The evaluation should include a cost benefit analysis documenting how lead hazard control in housing can reduce medical and other costs, as demonstrated in a recent report from the Pew Charitable Trusts and the Robert Wood Johnson Foundation.⁸
9. Institutionalize technical assistance for local jurisdictions attempting to integrate housing code compliance with lead poisoning prevention.

Attachments

Local Jurisdiction Reports:

Technical Assistance for Code Transformation and Innovation Collaborative (the TACTIC Project) – Final Report for the City of Battle Creek, Michigan

Technical Assistance for Code Transformation and Innovation Collaborative (the TACTIC Project) – Final Report for the City of Detroit, Michigan

Technical Assistance for Code Transformation and Innovation Collaborative (the TACTIC Project) – Final Report for the City of Flint, Michigan

Technical Assistance for Code Transformation and Innovation Collaborative (the TACTIC Project) – Final Report for the City of Grand Rapids, Michigan

⁸ National Center for Healthy Housing (n.d.). 10 policies to prevent and respond to childhood lead exposure. Retrieved May 23, 2019, from <https://nchh.org/information-and-evidence/healthy-housing-policy/10-policies/>

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Summary

Battle Creek requires a rental permit for its rental properties, each of which must be registered and undergo a visual inspection on a regular schedule. Typical permits are valid for three years; if there were no previous problems recorded during inspection, some buildings will qualify for a longer, six-year permit. These provisions are important strengths that can be leveraged to help prevent lead exposure in children.

The City of Battle Creek has adopted the 2015 International Property Maintenance Code (IPMC) for its rental housing stock code. The IPMC provides for all paint to be kept in an intact condition but does not require any actual testing of paint, dust, or soil to determine lead content. Such measurements are typically made only after the health department has determined that a child already has an elevated blood lead level. Other best practices for rental housing codes across the country provide for proactive paint, dust, or soil testing, instead of only requiring such testing after a child has been exposed.

This report describes the current Battle Creek code process and provides recommendations on improvements to its housing code and associated inspection, enforcement procedures, staffing, public education, and other related matters. The report has been reviewed by City of Battle Creek personnel.

This project was funded by the Michigan Department of Health and Human Services, Child Lead Exposure Elimination Innovations Grant, contract number E20183042-00. The opinions expressed here are those of the National Center for Healthy Housing and do not necessarily reflect those of the City of Battle Creek.

Summary of Recommendations

Require testing of deteriorated lead paint and dust as part of the rental permit to determine actual risk of lead hazards. The current practice of visually examining paint is insufficient, because the lead content of deteriorated paint and dust cannot be detected by the naked eye.

Change the existing housing code language to require remediation of deteriorated lead-based paint using lead-safe work practices and clearance dust testing in all rental units in which young children reside, are expected to reside, or could reside or visit. The National Healthy Housing Standard (available at <https://nchh.org/tools-and-data/housing-code-tools/national-healthy-housing-standard/>) may be utilized as a model code. The dust testing should comply with the recent lead dust guidance values established by the U.S. Department of Housing and Urban Development for its lead hazard control grantees.

Train housing code compliance officers to collect paint and dust samples properly as part of code inspections instead of only doing so after a child has already been exposed. Other local

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officials employed as lead-based paint risk assessors could be deputized as code officers and vice versa, as is the case in Erie County (NY) and Rochester (NY).

Amend the language of the code violation notices to include deteriorated lead-based paint and elevated dust lead levels. The current language seems to involve only deteriorated paint, not deteriorated lead-based paint.

Involve the public in proposed changes to the code and seek comment from tenants, landlords, property owners, public health officials, and other members of the public. This includes working for the protection of tenants during the implementation of code changes.

Facilitate data sharing between the city and the county health department. The city could provide a list of homes with a higher risk of hazards, using variables such as deteriorated paint and lack of compliance.

Public education efforts should include the importance of deteriorated lead-based paint and the associated contaminated dust and soil it generates. Previous public education efforts have resulted in an increase in voluntary child lead testing; future efforts could include more information about the importance of home testing, for example.

Battle Creek should evaluate the results of code changes by documenting changes in housing quality, compliance time, complaints, and childhood blood lead levels. Other factors to consider in evaluation include census tract or neighborhood comparisons to ensure the system is monitoring effectively and equitably.

Work with community-based programs to expand capacity to educate landlords and residents, assistance with temporary relocation if needed during repairs and expand referrals to social services for other needs identified in the home.

Consider increasing funding and capacity for code compliance.

Introduction

How Housing Codes Can Help Prevent Childhood Lead Poisoning

Housing quality is an important social determinant of health in general and childhood lead poisoning prevention specifically. Yet the housing and health sectors are typically governed by separate fragmented and isolated systems. Although today's housing codes originated over a century ago in the sanitation movement to combat health problems such as cholera, tuberculosis and typhoid, current codes (with important exceptions described below) typically refer housing-related lead paint problems to local health departments instead of using the code

process to identify and correct these hazards. Health departments often focus on identifying lead hazards only after an elevated blood lead level has occurred.

This secondary prevention reactive approach hampers the application of the existing housing inspectorate and code systems to detect and correct lead hazards in housing *before* children have been exposed. Furthermore, housing codes in many jurisdictions are driven largely by complaint-driven reactive enforcement systems. In many cases, local housing codes are either silent on correction of lead hazards or defer to specialized lead risk assessments by local health departments. An effective code enforcement system can be a powerful tool for improving and protecting residents from lead exposure. Appendix A describes key elements of an effective system.

Key Characteristics of Battle Creek

Battle Creek has a population of about 51,505 (2017 estimates), 3,699 of whom are children 0-5 years old. Battle Creek has 20,606 occupied housing units, 40% of which are rentals. Based on Battle Creek's population data, an estimated 1,479 of these units would have children under the age of six living in them. An estimated 78.4% of the housing units in Battle Creek were built before 1979 (lead paint was banned for use in residential units in 1978 by the federal government). Lead paint is likely to be a hazard in a high number of Battle Creek homes.

Battle Creek inspects about 94% of rentals, leaving about 500 units unregistered. Although Battle Creek presently is struggling with very low housing market values, a regression analysis done for the city found that rental properties do not have a negative impact on neighborhood values, indicating that code compliance efforts are effective in helping neighborhoods improve maintenance. Since the city began enforcing their rental program, the severity of violations has improved: 618 citations (including both rental and nonrental buildings) were issued in 2018, 500 of which came from code officers. Most orders to repair reportedly reach compliance within 60 days.

In an effort to keep landlord costs down and other reasons, the city has minimized imposing services fees to help focus resources on actual repairs and compliance; fines for noncompliance are collected by the 10th District Court. The city has considered changing to a system that assesses administrative penalties for noncompliance rather than civil infractions to avoid burdening the court and to help subsidize the work through collected penalties.

National Best Practices

Several municipalities across the country have taken action to address lead hazards in housing through codes, which are reviewed briefly here.

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For example, in December 2005, Rochester (NY) passed an ordinance adding inspections of most pre-1978 rental housing for lead paint hazards to their ongoing rental housing inspections needed to obtain a certificate of occupancy (C of O). Rental housing inspections occur every three or six years, depending on building size (see paint). The city maintains a publicly accessible database showing the date all rental properties passed their most recent C of O inspection, including lead.

The code does not appear to have significantly impacted the housing market in Rochester, a key concern of code officials and property owners prior to passing the law. Landlords have now accepted it as a routine cost of business (see <https://www.cityofrochester.gov/article.aspx?id=8589935004>). To receive a C of O, property owners must correct identified lead hazard violations (if any). If hazards are identified, the property owner must pass a private clearance test (a visual inspection plus at least eight dust wipe samples). The protocol, available at <https://www.cityofrochester.gov/lead/> and <https://ecode360.com/8677786>, states in part: “Dust samples shall be taken from each of no more than four rooms. The selection of rooms to be tested, where applicable, shall include no less than one bedroom and the living room. At least one wipe sample shall be taken from a window trough or a windowsill with a paint history, if present, and one from a floor in each room. Where there are less than four rooms, then all rooms shall be sampled.” Results are compared to current EPA dust lead hazard standards). For the initial inspection, code officials examine paint condition; and if it is intact and the home is in a high-risk area, then they will collect eight dust wipe samples to ensure that the home is safe for children. If paint is not intact, lead-safe work practices must be used to repair the paint, followed by private dust testing to ensure cleanup is adequate (unless the home has been found to be free of lead-based paint). The city maintains a publicly accessible database showing the date all rental properties passed their most recent C of O inspection, including lead.

The code does not appear to have significantly impacted the housing market in Rochester, a key concern of code officials and property owners prior to passing the law. Landlords have now accepted it as a routine cost of business (<https://www.ncbi.nlm.nih.gov/pubmed/22001644>). As of August 28, 2018, the City of Rochester has inspected 166,906 individual dwelling units (see <https://www.cityofrochester.gov/lead/>). Data show that blood lead levels in Rochester improved more than twice as fast compared to the rest of the state. Eighty-six percent of code inspections did not have an exterior lead violation, and 88% of those with a violation had complied with remediation as of August 2018. For interiors, of the 166,906 units inspected, 95% passed the initial visual inspection, and among those with an interior violation, 84% had complied as of June 30, 2018. Of the 4,141 units cited with a lead dust hazard, 98% have complied as of June 30, 2018. Ninety percent of the units subjected to dust wipe testing (over 30,000 units as of 2016) passed. During the first 12 years, the City of Rochester has issued 782 vacate orders for situations with severe hazards that put children at risk and 3,418 tickets for noncompliance. The frequency of violations has declined in recent years, as landlords know

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what to expect. Furthermore, the ordinance has created a demand for more private inspectors to perform clearance testing; the increased competition has resulted in a price reduction. Before the law was passed, a clearance test cost about \$350 per unit; the cost is now about \$125 per unit.

In Maryland, owners of older residential rental properties must register their properties annually with the Department of the Environment. Private inspectors issue a lead paint risk reduction certificate for each dwelling that passes the inspection, which includes both a visual examination of paint condition and dust lead testing. Rental properties covered by the law must be free of chipping, peeling paint and lead-contaminated dust. To qualify for registration, owners must hire a certified contractor to address any defective paint and have an accredited lead paint inspector verify compliance before any change in occupancy. Inspectors issue a lead paint risk reduction certificate for each dwelling unit that passes the inspection. Whenever a tenant notifies an owner that there is defective paint or a child with an elevated blood lead level, the owner has 30 days to conduct modified risk-reduction measures and pass lead inspection certification. The rental property owner is responsible for temporarily relocating the family to a lead-safe or lead-free dwelling while the original dwelling undergoes risk reduction measures. A key component in Maryland's substantial decline in childhood lead poisoning has been its strong public enforcement of the Maryland Reduction of Lead Risk in Housing Act coupled with local enforcement coordination and private enforcement actions by nonprofit agencies and *pro se* tenants. The Maryland Department of the Environment files 500 to 800 violation notices annually, and a team from the state's attorney general's office is responsible for enforcing actions against noncompliant owners. Another highly effective best practice has been Maryland's policy of pursuing enforcement against a rental property owner's entire noncompliant housing portfolio once enforcement actions have been initiated against any one of the owner's properties. Local housing code enforcement and landlord licensing officials at the city and county level also help coordinate enforcement by referring noncompliant properties in their jurisdictions to MDE for enforcement of the registration and risk reduction requirements.

Rhode Island passed the Lead Hazard Mitigation Act in 2002 and implemented code regulations in 2004. Before any change in ownership or tenancy of a property and at least every two years, the property owner must have the property inspected and demonstrate via a certificate of conformance (COC) or a lead-safe or lead-free certificate that the dwelling is safe for children. Establishing lead safety includes dust testing. Under the law, rental property owners are required to attend a training on unsafe lead conditions, inspect/repair any lead hazards at their properties, make residents aware of their findings and actions, address residents' lead-hazard concerns, use lead-safe work practices during maintenance, and verify each unit's compliance through a lead inspector. Typically, the owner must have the property inspected every two years and prove its safety for children by showing a COC or a lead-safe or lead-free certificate. Since the law's enactment, the state has been challenged by compliance. In 2014, when the

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Providence Plan completed an evaluation of the Lead Hazard Mitigation Law, it found that only 20% of the covered properties had complied with the regulations within the first five years of implementation. Several cities have taken steps to improve enforcement. Providence, for example, created a separate division of Housing Court to address lead violations. The Inspection and Standards division reported that 484 of 537 lead violation cases filed over the first four years resulted in corrective action. An analysis conducted by the Rhode Island Department of Health discovered that there was a significant decline in children with elevated blood lead levels in Providence between 2012 and 2013. Notably, the decline coincided with the implementation of the building permitting requirements and the lead docket.

The National Healthy Housing Standard, a model code, provides that lead levels at or above federal regulatory limits are defined as hazards and must be remediated. Those levels include deteriorated lead paint (0.5% by weight or 1.0 milligram per square centimeter); dust (40 micrograms of lead dust per square foot [$\mu\text{g}/\text{ft}^2$] on floors and 100 $\mu\text{g}/\text{ft}^2$ on windowsills). The National Healthy Housing Standard also states that painted surfaces shall be maintained intact and, except for paint tested and found not to contain lead, deteriorated paint at a property built before 1978 shall be repaired using lead-safe work practices and follow-up dust testing.

Many federally assisted housing programs, including public housing, Section 8 project-based assistance and federally assisted housing rehabilitation programs also require paint and dust testing, regardless of whether a child with an elevated blood lead level resides there, pursuant to the Lead-Safe Housing Rule (24 CFR Part 35).

Additional case studies of best practices across the nation for childhood lead poisoning prevention are available here: <https://nchh.org/who-we-are/nchh-publications/case-studies/lpp-stories-case-studies>.

Methods

We conducted several conference calls with key local personnel to introduce the project, describe the process, and identify current codes in October and November 2018. After reviewing the local code, we used the NCHH Code Comparison Tool (<https://nchh.org/tools-and-data/housing-code-tools/cct/>) to compare Battle Creek's housing code with best practices (see Appendix B).

In December 2018, we conducted an on-site visit, which was attended by Chris Lussier, Community Development Manager; Jason Francisco, Code Compliance Manager; Matt Flanders, Housing Rehab Coordinator; Richard Bolek, Inspections Supervisor; Marcie Gillette, Community Services Director; Mackenzie Scholte, Community Development Specialist; and others from the City of Battle Creek. Other attendees represented the local Community Action agency, the

Calhoun County Public Health Department, and local property owners. Representing the National Center for Healthy Housing were David Jacobs and Sarah Goodwin. The relevant documents were obtained and subsequent data requests identified. The timeline includes provision of a draft report to the jurisdiction in mid-March by NCHH, comments from City of Battle Creek personnel to be integrated into the draft in mid-April, and completion and presentation of the final report in May 2019.

NCHH met again with city code officials on April 15, 2019, to discuss final revisions, based on helpful comments received from the City of Battle Creek. On May 2, NCHH arranged a conference call between City of Battle Creek code officials; Gary Kirkmire, director of buildings and zoning for the City of Rochester, NY; and David Jacobs and Sarah Goodwin, both representing NCHH.

Results and Recommendations

Code Language

Battle Creek has a rental property registration process and a planned proactive scheduled inspection process, both of which are enormous strengths. This is superior to a solely complaint-driven reactive code inspection system, although many jurisdictions have moved to proactive systems in recent years. (Of course, the complaint-driven process needs to continue in order to respond to violations that may occur outside of the periodic scheduled inspection process.) The reactive system often relies on injuries, illnesses, or a resident's complaint and often occurs only after conditions have become quite serious. The reactive system also tends to produce more litigation and creates uncertainty in the rental market, because landlords may have to absorb unanticipated property repair and litigation expenses. It can also be problematic for residents who either don't know their rights or are fearful of exercising them (e.g., undocumented residents, tenants fearing eviction), leading to inequities. The presence of a proactive scheduled inspection process is a strength upon which the Battle Creek community can build. The decrease in severe violations and high number of completed inspections demonstrate the existing effectiveness of this program.

When code inspections are conducted, landlords are given 60 days to bring the property into compliance. During this time, they also have an opportunity to appeal to the Board of Appeals asking for a time extension. If the property is not brought into compliance and no appeal is received, a civil infraction citation is issued and sent to the 10th District Court for processing. A pretrial hearing is scheduled within approximately 30-60 days after the citation has been sent to the court. During the pretrial hearing, a new time frame is established, along with the fines and costs schedule. A one-day fine and court costs total \$230. If the work is still not complete within the new time frame that has been established, an affidavit of noncompliance is

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generated and sent back to the court. Usually within the next 30-60 days the property owner is scheduled for a show-cause hearing before a judge. Again, a new time frame will be established for compliance. Once into the court system, the judge ultimately decides how to proceed with time frames and collection of fines and costs.

One area for improvement is the language of the code itself, which restricts violations to only visually deteriorated paint, regardless of whether it actually contains lead. Of course, deteriorated nonlead paint should be corrected to help prevent rot and other matters; but the current code language in Battle Creek is drawn from the International Property Maintenance Code, which has been criticized by the National Center for Healthy Housing and others for its failure to identify actual lead hazards (see <https://nchh.org/information-and-evidence/healthy-housing-policy/state-and-local/icc/>). It also diverts attention from where it is most needed, because most paint, even in older housing stock, does not actually contain lead.

One option would be to require actual testing of deteriorated paint to determine if it has levels of lead above the federal standards, which Michigan has adopted. This can be achieved by simply adopting the National Healthy Housing Standard, which would also have the added benefit of addressing other housing conditions that could adversely affect health. There are two methods of measuring lead in paint:

1. Careful collection of all layers of paint from deteriorated surfaces, followed by laboratory analysis accredited under the EPA National Lead Laboratory Accreditation program; or
2. On-site analysis using portable lead paint analyzers using x-ray fluorescence (XRF).

Either method is acceptable. Paint chip collection has lower up-front costs but can be tedious and removes paint from a surface that must be sealed following collection. XRFs have a higher up-front cost but yield immediate results and do not involve destructive paint chip sampling. This may be a better option for Battle Creek, as the city already has one inspector who is certified as a lead-based paint inspector and uses an XRF device (although of course that individual is already fully engaged on priority work).

If deteriorated paint is found to contain lead, then remediation can occur using lead-safe work practices (essentially wet scraping to reduce dust emissions, followed by application of a durable two-coat compatible paint film, followed by specialized cleaning and dust testing). Dust testing is a relatively simple procedure carried out across a measured surface area on floors and windowsills, but the testing must be performed by trained and certified personnel and also requires laboratory analysis.

Another option is to incorporate code language that follows the Rochester model, which requires all paint to be intact, but also provides for dust lead testing even when paint is intact. Dust lead is known to be the main route of exposure for most children via normal hand-to-mouth contact, contamination of hands, toys and other objects, ingestion of lead dust, and

subsequent absorption into the child's body. The Rochester model helps to address the situation where landlords have repainted but may not have followed lead-safe work practices or cleanup procedures. Disturbance of only a small amount of lead paint can cause major dust lead contamination. For example, consider the case of paint removal using dry scraping or sanding that turns the lead paint into lead dust. Removing only one square foot of lead paint containing the minimum amount of lead regulated by the federal government (1 mg/cm²) and then distributing that lead dust over an average 10-foot-by-10-foot room results in a dust lead level of 9,300 µg/ft², which is well over the EPA limit of 40 µg/ft² for floors. By conducting dust lead testing, inadequate dust containment and cleanup practices can be detected before a child has been needlessly exposed. Lead-safe work practices (in brief) involve occupant and worker protection, containment, use of wet methods during paint removal to minimize dust emission, use of durable new paint (or other coatings, enclosures, or building component replacements), followed by specialized cleanup methods and clearance dust testing to ensure cleaning has been adequate. Proactive dust testing and lead-safe work practices are also required in Maryland and Washington, DC, and most federally assisted housing programs.

A final option would be to require lead risk assessments followed by remediation in all older family rental properties. Risk assessments measure lead content in deteriorated paint, dust, and bare soil. Detroit is currently pursuing this approach on a ZIP-code-by-ZIP-code basis, and it is the standard of care in most federally assisted housing programs and in HUD's lead hazard control grant program.

Any of these methods would require changes to the city code and could be implemented as the regular schedule of rental inspections continues. This process would allow for the City of Battle Creek to notify the community and property owners of the incoming requirements, giving time for owners to address hazards before being met with an inspection and potential citation.

Staffing and Enforcement

Improving the language in the code will ultimately be ineffective if it is not actually obeyed and enforced. Fortunately, Battle Creek has a strong code staff in place, with five code officers employed.

U.S. census data (2017) for Battle Creek indicates that there are 3,699 children under six years old, the age at which blood lead levels typically reach their peak level. If there are 20,606 occupied housing units and 40% are rental units, then there could be about 1,479 rental units with young children in Battle Creek. Although this assumes there is one young child per unit, it does not include other units that children may frequent, such as residential day cares, schools, et cetera, suggesting this is a reasonable assumption.

The estimated time it would take a trained code inspector to perform a visual examination of paint (and other housing conditions), collect paint chips from deteriorated surfaces, and collect

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dust wipe samples from floors and windowsills in an average of four rooms per unit is approximately one hour (not including travel, administrative, and report preparation time). The current code inspection process, which is limited to visually examining housing conditions, takes about 15 minutes per unit.

Staffing needs can be estimated as follows, assuming a three-year inspection cycle under two scenarios (the first presented below assumes that the lead component of the inspection would be a standalone activity, and the second assumes that the lead component would be integrated into the code inspection process):

First Scenario

1,548 rental units with young children/3-year inspection cycle = 516 rental units/year

516 rental units/year x 1 hour/rental unit = 516 person-hours/year

If we assume that there are a total of 2,080 total hours per inspector per year available, it is reasonable to assume that about 40% of that time will need to be devoted to travel to housing units to be inspected, report preparation, training, and follow-up interaction with owners, and in some cases interaction and testimony before administrative judges or others in cases of noncompliance.

40% x 516 person-hours/year = 206 hours/year administrative.

Thus, total personnel need could be as follows:

516 person-hours/year for inspections + 206 person-hours/year for travel and other administrative duties = about 722 person-hours/year

In short, this would appear to mean that no more than one additional staff would need to be hired.

Second Scenario

Alternatively, if regular code inspections take 15 minutes per unit and collection of dust wipes and paint chip samples takes another hour per unit, then the number of code officers should increase by a factor of four. This suggests the city should hire at least four additional code officers to absorb the burden of additional paint chip and dust wipe sample collection. This scenario assumes that all rental housing units would undergo the lead sampling process.

Another consideration is how many of the new citations will fall into noncompliance and require court time. Currently the majority of orders to repair are completed within 60 days, but

city officials do have to spend time enforcing noncompliance in court. The local judges have limited schedules; present case load for city codes is about 10-30 cases a week.

Training

Housing code officers in Battle Creek currently undergo on-the-job training and mini-sessions to fulfill their current duties; however, if they are also charged with collecting dust wipe and deteriorated paint chip samples, they will need to be certified to do so under Michigan law. This is typically achieved with a two-day training course. Code inspectors in Rochester, NY, and elsewhere are cross-trained to enable them to identify both housing code violations and lead-based paint hazards. In addition to cross-training of code inspectors, other training needs may include the following:

- Lead hazard awareness for supervisors.
- Lead hazard awareness for city attorneys charged with enforcing lead-related code violations.
- Lead hazard awareness for administrative law judges.
- Training for health department case workers who coordinate care for children with elevated blood lead levels on housing code violation procedures: specifically, how they can request a housing code inspector in homes of children with elevated blood lead levels.
- Healthy homes best practices and standards for code officers, so that they will be better equipped when encountering other hazards.
- “Soft skills,” such as customer service, communications, and ethics training for code officers who may interact often with tenants and landlords from various cultural backgrounds.

As the program develops and if Battle Creek strengthens its codes, ongoing and comprehensive training will be required to ensure staff capacity to enforce the new provisions.

Implementation Considerations – Involving the Public

Integrating lead hazard identification into the housing codes in Battle Creek should also consider how best to achieve community consensus. This will require careful articulation of why this is needed and related costs and benefits. Community leaders should be engaged to help articulate why housing codes present an important opportunity to address childhood lead poisoning in Battle Creek and what the priorities should be. Those opportunities include:

- Ending the historic divide between housing and public health.
- Taking action before children are harmed, instead of only reacting after the harm has been done.
- Potential for new job creation.

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- The benefits of a “health in all policies” approach.
- How the costs of proactive code inspections are less than the costs of treating and educating children with elevated blood lead levels.
- How proactive codes can benefit landlords by reducing the prospect of unanticipated housing repairs and avoidable litigation.
- Building public trust in democratic institutions to address preventable diseases, such as childhood lead poisoning.
- Active engagement of the city’s philanthropic institutions. Battle Creek has previously had support from a community foundation to run a public education campaign.
- Ending the current inefficient practice of shifting the costs of lead poisoning to our schools and medical care institutions.

The Calhoun County Lead Poisoning Prevention Task Force, which issued *Get the Lead Out: A Plan of Action for Lead Poisoning Prevention and Remediation in Calhoun County, Michigan*, (available at <https://battlecreekmi.gov/DocumentCenter/View/2423/Get-the-Lead-Out---Lead-Poisoning-Prevention--Remediation-Report---October-2016>), a report about addressing lead poisoning prevention in Battle Creek and surrounding cities in 2016, would be one appropriate agent for obtaining partner and community feedback and support.

To maximize the public’s involvement, the city should consider appointing community leaders and members to an advisory council to provide organized input. During the decision-making process, the city should make sure to consider equity impacts of code changes. Some particular recommendations to keep in mind include:

- Include community members in the development of the structure of the policy process to ensure that they are represented throughout the process.
- Implement holistic strategies that break down silos.
- Develop awareness campaigns so that the necessity of the policy changes are conveyed to the community.
- Prioritize resources in areas that need them most.
- Protect tenants as the code changes are implemented.

More details for these recommendations and others about addressing equity in lead poisoning prevention policy change can be found in *Achieving Equity in Lead Poisoning Prevention Policy Making: Proceedings from a Consensus Conference*, a report published by Human Impact Partners (available at <https://humanimpact.org/wp-content/uploads/2018/11/Achieving-Equity-in-Lead-Poisoning-Prevention-Policy-Making -Proceedings-from-a-Consensus-Conference.pdf>).

Conclusions

A recent authoritative report, *10 Policies to Prevent and Respond to Childhood Lead Exposure* (see <https://nchh.org/information-and-evidence/healthy-housing-policy/10-policies/>), showed how every dollar invested in residential lead hazard control (which can include better codes) will yield at least \$1.36 in monetary benefits. Community involvement in such changes is essential. Although housing codes are often considered to be mundane, they can also be an important vehicle to rebuilding trust in government and in the city's ability to solve its challenges. In short, implementation must include an important public education and involvement component if such changes are to be lasting and productive.

Modernization of the Battle Creek housing code holds great promise in helping the city prevent childhood lead poisoning. The city already has a proactive rental housing inspection process and a robust enforcement infrastructure that can be leveraged to include detection of lead hazards before children have been exposed. Changes in housing code language, staffing levels, enforcement, and creative use of subsidies can all be used to help eliminate childhood lead poisoning as a major public health problem.

Acknowledgments

We would like to thank the following people for their careful and thoughtful review of this report, which greatly improved the final product. We would also like to thank the citizens of Battle Creek who were able to meet with us and are listed in the meeting minutes in Appendix C.

City of Battle Creek Staff Who Reviewed This Report:

Marcie Gillette, Community Services Director
Chris Lussier, Community Development Manager
Jason Francisco, Code Compliance Manager
Rick Bolek, Chief Building Official
Roger Eriksen, Lead Inspector
Scott Parker, Housing Rehab Coordinator

The opinions expressed here are those of the National Center for Healthy Housing and do not necessarily reflect those of the City of Battle Creek.

Appendices

Appendix A: Elements of Effective Housing Code Enforcement Programs

Appendix B: Code Comparison Tool Results

Appendix C: TACTIC Site Visit Meeting Minutes

Appendix D: Minutes of Teleconference with Gary Kirkmire of Rochester, NY

Appendix A: Elements of Effective Housing Code Enforcement Programs

Adapted from *Up to Code: Code Enforcement Strategies for Healthy Housing*.

Adopt a Strong Housing Code

Housing codes often contain ambiguous phrases in their standards, such as “clean,” “sanitary,” “safe,” and “healthy,” and the lack of detail makes efficient and effective code enforcement difficult. Without specific standards to serve as a guide, property owners, residents, and code enforcement officers can interpret housing codes differently, leaving compliance decisions subject to challenges and residents vulnerable. In addition, many housing codes don’t properly address health-related threats in the home, such as pests, moisture, ventilation, and chemicals (radon, lead, and pesticides, for example).

Resource/tip: The National Healthy Housing Standard provides model codes that incorporate public health rationale into building code parlance.

Fund the Code Enforcement Program Sufficiently

Effective code enforcement programs require sufficient financial resources. In many localities, state law sets forth how the locality may fund its code enforcement operations (typically through general fund, Community Development Block Grant (CDBG) funding, permits/regulatory fees, or fines). State laws may also set forth the types of fees and amount of fines the jurisdiction may assess on those who violate the housing code.

Resource/tip: Some communities fund their code enforcement programs with moneys from the CDBG program, administered by the U.S. Department of Housing and Urban Development. These grants can fund code enforcement officers’ salaries and related expenses, legal proceedings to enforce housing codes, and rehabilitation or improvement of some types of housing.

Training Officers Comprehensively

Code enforcement programs require well-trained officers to enforce the local housing code. Officers need to participate in a broad-based training program, periodic training updates, and routine inspections with other officers to ensure professionalism and consistency in the field. Training should cover all applicable federal, state, and local laws but also best practices, soft skills (e.g., how to work effectively with residents from diverse backgrounds), and availability of community resources to assist residents.

Resource/Tip: The National Healthy Homes Training Center offers training for code inspectors.

Partner with Community Organizations

Community organizations can raise awareness of the purpose, policies, and procedures of code enforcement, and provide supplementary resources and services.

Resource/tip: Code enforcement programs have a variety of potential community partners, including housing advocates, public health professionals, immigrant and refugee service providers, social workers, tenant organizations, and home repair programs.

Promote Cross-Agency Coordination

Ensuring housing is safe and habitable requires cross-agency coordination. Because responsibility for health and safety is usually divided among various city agencies or departments, intragovernmental communication and collaboration can help make code enforcement more efficient and effective, and less like a series of disjointed, isolated efforts.

Resource/tip: Staff of the Erie County (NY) Department of Health’s Healthy Neighborhoods Program and Lead Poisoning Prevention Program are trained and deputized code enforcement officers, which enables health department staff to formally cite for violations of the Erie County Sanitary Code while conducting home assessments. Deputizing health and/or housing agencies to enforce each other’s code provisions assures a unified perspective toward housing-based lead poisoning primary prevention.

Develop a Cooperative Compliance Model

Under a cooperative compliance model, rather than simply inspecting housing and citing for violations, the code enforcement officer works cooperatively with property owners to help them understand the elements of healthy housing, the importance of code compliance, and how to bring the property into compliance. The code enforcement officer is armed with cooperative tools – information, education, and resources – along with traditional enforcement sanctions. Cooperative compliance allows property owners and officers to work together to improve housing conditions and promote health.

Resource/tip: Many communities struggle with enforcement. A cooperative compliance approach can reduce the number of properties that require follow-up enforcement action.

Enforce the Local Housing Code

Most owners do their best to comply with housing codes, but code enforcement programs must be prepared to deal with those who don’t. To protect the health and safety of residents effectively, programs need to be flexible and efficient, and have teeth. There are three major types of enforcement: administrative, civil, and criminal.

Resource/tip: ChangeLab Solutions’ [Healthy Housing Laws that Work: Creating Effective Implementation and Enforcement Clauses](#) explains the different ways local governments can enforce housing and property maintenance codes.

Adopt a Proactive Rental Inspection (PRI) Program

Traditional code enforcement programs are complaint-based; that is, in response to a resident’s complaint about a substandard housing condition, a code enforcement officer conducts a housing inspection. Under a PRI program, rather than wait for a complaint to trigger a housing inspection, the locality inspects all covered rental housing on a periodic basis. Though the specifics vary by locality, PRI programs typically share the same basic structure: registration, periodic inspections, and enforcement. A PRI system doesn’t replace a complaint-based system and can help both property owners (by incentivizing routine maintenance that prevents costly repairs) and tenants (e.g., by ensuring equitable access to services for vulnerable populations that may be unaware of or fearful of exercising their rights under a traditional complaint-based system).

Resource/tip: ChangeLab Solutions’ [A Guide to Proactive Rental Inspection Programs](#) and [Model Proactive Rental Inspection Ordinance](#) explains how proactive rental inspections can help protect vulnerable residents, preserve safe and healthy rental housing, and work to increase neighborhood property values.

Establish Supplementary Programs

Jurisdictions can establish auxiliary programs that increase code enforcement effectiveness by educating community members, incentivizing and/or financing repairs, and helping residents move when necessary.

Resource/tip: [Up to Code: Code Enforcement Strategies for Healthy Housing](#) contains several examples of supplementary programs that other communities have established to support their code enforcement activities.

Evaluate the Code Enforcement Program

Code enforcement programs should collect and analyze data regularly to better understand their strengths and weaknesses. Evaluation can help monitor functioning, identify areas for improvement, help to justify resources, and provide accountability. Communities may also consider tracking key performance metrics by census tract or neighborhood to ensure equitable access and that the system is working well for all residents.

Resource/tip: Data collection and analysis can provide valuable information to both government agencies and the community. Whenever possible, communities should work to establish data

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sharing with other agencies or programs and, as appropriate or feasible, make data publicly available.

Citation

ChangeLab Solutions (eds.). (2015, May). Up to code: Code enforcement strategies for healthy housing. Oakland, CA: ChangeLab Solutions. Retrieved May 23, 2019, from https://changelabsolutions.org/sites/default/files/Up-tp-Code_Enforcement_Guide_FINAL-20150527.pdf.

Appendix B: Code Comparison Tool Results

Background

Location	Property Maintenance Code	Other Code Sections	Other Documents
Battle Creek Uses IPMC 2015	Part 14, Title 4, Chapter 1450: Property Maintenance Code International Property Maintenance Code 2015	842 Rental Housing 1456 Vacant or Abandoned Structures	Rental Permit Application Rental Property Checklist Vacant or Abandoned Registration Form
Detroit Based on the 2000 IPMC	Chapter 9, Article 1: Property Maintenance Code	Chapter 9, Article 1, Division 3: Rental Property Chapter 26 - Housing Chapter 24, Article X: Lead Poisoning Prevention Testing and Prevention	
Flint Uses IPMC 2015	Chapter 5, Article 3: Property Maintenance Code International Property Maintenance Code 2015	Chapter 5, Article 3, Sec. 5.3-3 on: Certificate of Compliance for rental properties	
Grand Rapids Uses IPMC 2012 with amendments	Title VIII, Chapter 140: Property Maintenance Code International Property Maintenance Code 2012	Title VIII, Chapter 140, Sec. 8504: Amendments to the Code including certificate of compliance for rentals	
Michigan State Lead Law	Public Health Code, Act 368 of 1978, Part 54A: The Lead Abatement Act		Lead Hazard Control Rules

Code Comparison Tool

There is only one measure where Battle Creek partially meets the standards set by the National Healthy Housing Standard (see below for the output from that comparison tool).

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The 2015 IPMC requires that interior (305.3) and exterior (304.2) painted surfaces be maintained intact, and that peeling, flaking, or chipping paint should be repaired or removed. However, the code does not require that deteriorated paint on properties predating 1978 be repaired in accordance with the EPA Repair, Renovation, and Painting Rule or that the underlying cause of the deteriorated paint be corrected.

The Rental Property Checklist provided by the city also includes an item for peeling or chipping paint, as it may pose a lead hazard. Conversation with the City of Battle Creek established that these inspections include a visual assessment of paint condition and handing out information about lead paint hazards, as well as providing some free paint.

Addressing lead in water is a stretch provision in the Code Comparison Tool. The IPMC does not include any regulation of lead in drinking water. The Battle Creek sewers and water codes include a limit on lead in wastewater, but do not include any provisions about lead in drinking water.

SECTION E: Chemical Hazards – Building Products

Questions: 10

Total Responses: 25

Answered: 25

Percentage Complete: 100%

Status: Average

Questions E1-E6: Lead

Strong. Congratulations! Your responses indicate that your community is using most of the evidence-based provisions in the National Healthy Housing Standard (NHHS) in this area – NHHS Provisions (7.1, 7.2.2, 7.2.3, 7.2.4). To take the next step in using housing codes to protect resident health, consider implementing some or all of the provisions listed below.

Questions E7-E8: Asbestos

Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.3, 7.3.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

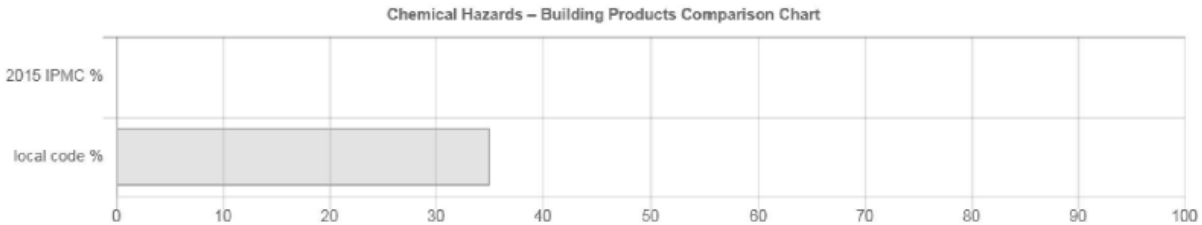
Questions E9-E10: Toxic Building Materials

Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.4. 1, 7.4.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

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SECTION	NUMBER OF NHHS MANDATORY PROVISIONS	NUMBER OF 2015 IPMC PROVISIONS THAT MEET OR EXCEED NHHS PROVISIONS	COMMUNITY SCORE (POINTS ALLOCATED FOR EACH PROVISION THAT WAS PARTIALLY OR FULLY MET)*	COMMUNITY % (COMMUNITY SCORE/NUMBER OF NHHS MANDATORY PROVISIONS)
Chemical Hazards – Building Products	10 (100%)	0%	3.5	35%

*Meets or exceeds standard = 1 point; partially meets standard = 0.5 point; doesn't meet standard=0 points



NHHS Provisions that You Reported Already Exist in Your Local Code

NHHS Provision 7.2.5. Lead-based paint shall not be applied to the interior or exterior of any dwelling or dwelling unit.

NHHS Provision 7.2.1. Lead levels at or above federal regulatory limits pursuant to 40 C.F.R. § 745.65 are deemed hazardous:

1. Lead-based paint on an existing painted surface – 0.5% by weight or 1.0 milligrams per square centimeter;
2. Dust on floors – 40 micrograms of lead per square foot of settled dust ($\mu\text{g}/\text{ft}^2$);
3. Dust on interior windowsills – 250 $\mu\text{g}/\text{ft}^2$;
4. Dust on window troughs (wells) – 400 $\mu\text{g}/\text{ft}^2$;
5. Bare soil in children's play areas – 400 parts per million (ppm) of lead; and
6. Bare soil in areas of the yard that are not children's play areas – 1,200 ppm.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with 40 C.F.R. § 745.82(a), deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of 40 C.F.R. § 745 Subpart E, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.3.1. Friable asbestos-containing material shall be abated by licensed asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.3. Abatement, removal, and disposal of all asbestos-containing material shall comply with all appropriate federal, state, and local requirements.

NHHS Provisions that Your Local Code Does Not Include (in Part or in Full)

NHHS Provision 7.1. All chemical and radiological agents in dwellings, premises, and accessory structures, including but not limited to deteriorated lead-based paint, friable asbestos-containing material, formaldehyde, volatile organic compounds, radon, pesticides, and methamphetamine, shall be contained, stored, removed, or mitigated in a safe and healthy manner consistent with federal, state, and local laws and regulations. When an applicable regulatory limit is more protective than the level included in this section, the more restrictive limit shall apply.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of *40 C.F.R. § 745 Subpart E*, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.2.3. All renovation, repair, and painting work that disturbs a painted surface in a pre-1978 dwelling shall be performed in accordance with the renovation requirements of *40 C.F.R. § 745, Subpart E*, unless the paint has been tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*. Dust clearance testing shall be performed at the conclusion of the renovation work.

NHHS Provision 7.2.4. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, a painted surface shall not be disturbed using methods that involve (1) open-flame burning or torching or operating a heat gun at temperatures above a maximum of 1,100° F (593° C); or (2) power sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting unless such machines have shrouds or containment systems and a high-efficiency particulate air (HEPA) vacuum attachment that collects dust and debris at the point of generation. The shroud or containment system shall release no visible dust or air outside the shroud or containment system.

NHHS Provision 7.3. Every owner shall maintain in good repair all asbestos-containing material on the premises. All asbestos-containing material shall be maintained non-friable and free from any defects such as holes, cracks, tears, and/or looseness that may allow the release of fibers into the environment.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.4.1. Building materials consisting of hardwood plywood, medium-density fiberboard, and particleboard as defined by 15 U.S.C. 2697(b)(2) shall not be used in maintenance and renovations within dwellings, unless the materials have been certified to meet the formaldehyde emission standards of 15 U.S.C. 2697(b)(2):

1. Hardwood plywood with a veneer core, 0.05 parts per million (ppm);
2. Hardwood plywood with a composite core, 0.05 ppm;
3. Medium-density fiberboard, 0.11 ppm;
4. Thin medium-density fiberboard, 0.13 ppm; and
5. Particleboard, 0.09 ppm.

NHHS Provision 7.4.2. Building materials used in maintenance and renovations, including but not limited to paints, coatings, primers, glues, resins, adhesives, and floor coverings, shall be certified as having no volatile organic chemicals (VOCs) or low-VOC emissions, and having no halogenated flame retardants (HFRs).

NHHS Stretch Provisions (Not Assessed in Online Tool)

NHHS Stretch Provision 7.2. Lead present at or above the following limits is deemed hazardous:

1. Lead-based paint on a friction, impact, or chewable surface, damaged or otherwise deteriorated, or non-intact – 0.06% by weight;
2. Dust on floors – 10 micrograms of lead per square foot of settled dust ($\mu\text{g}/\text{ft}^2$);
3. Dust on interior windowsills – 100 $\mu\text{g}/\text{ft}^2$; and
4. 40 $\mu\text{g}/\text{ft}^2$ on porches.

Why Chemical Hazards – Building Products Matter

Lead is a heavy metal that accumulates in the body when ingested and has toxic effects on the nervous system, cognitive development, and blood-forming and other systems. Sources of lead include lead-based paint and the dust it generates, soil, drinking water, and consumer and other products. Lead-contaminated soil may be found particularly around older buildings contaminated by flaking external paintwork, adjacent to industrial premises using (or previously having used) lead, and near busy roads from the exhaust fumes from leaded gasoline. Lead is readily absorbed from the intestinal tract, especially in children, and its absorption is enhanced by dietary deficiency of iron and calcium.

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Exposure to asbestos increases the risk of developing lung disease. Asbestos products were historically used extensively in building materials. Vermiculite insulation in homes may be contaminated with asbestos. Vermiculite insulation should be assumed to be contaminated with asbestos and should not be disturbed. Trained professionals must be hired to remove vermiculite insulation. Formaldehyde is a prominent VOC found in household and construction products. It is a colorless, strong-smelling gas that can cause watery eyes, nausea, coughing, chest tightness, wheezing, skin rashes, and allergic reactions, and a burning sensation in the eyes, nose, and throat.

Formaldehyde is classified by the World Health Organization as a known human carcinogen . The most significant source of formaldehyde in the homes has been pressed-wood products made using adhesives that contain urea formaldehyde (UF) resins.

Suggested Next Steps

You have your results. Now what? Here are some suggested next steps:

- Review your results and identify places where your code is already strong and where there may be an opportunity to improve your local codes.
- Use the graphic provided (or export your data and create one yourself) to create a memo or presentation summarizing these results to start a conversation about whether there is an opportunity for action in your community.
- Download the National Healthy Housing Standard for reference as a model code.
- Read about how other communities have used the NHHS to strengthen their local codes and are using codes to improve health.
 - Healthy Housing Codes:
<https://nchh.org/information-and-evidence/healthy-housing-policy/state-and-local/healthy-housing-codes/>
 - Proactive Rental Inspections:
<https://nchh.org/resources/policy/proactive-rental-inspections/>
 - Incentivizing Healthy Housing:
<https://nchh.org/resources/policy/incentivizing-healthy-housing/>
 - APHA: Healthy Homes:
<https://www.apha.org/healthy-homes>
- Ask for technical assistance or help getting connected to a peer mentor. Contact Jonathan Wilson (<mailto:jwilson@nchh.org>).

Appendix C: TACTIC Site Visit Meeting Minutes

Meeting One: December 18, 2018 – City of Battle Creek Offices

Attendees:

Chris Lussier, Community Development Manager, City of Battle Creek
Jason Francisco, Code Compliance Manager, City of Battle Creek
Matt Flanders, Housing Rehab Coordinator, City of Battle Creek
Richard Bolek, Inspections Supervisor, City of Battle Creek
Marcie Gillette, Community Services Director, City of Battle Creek
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

City staff recommended we look at the lead task force report for Calhoun County – reacted to the state roadmap, found some ideas politically impossible. It has a goal to strengthen regulatory requirement, and the city has been taking small steps. Here's the link: <https://www.scribd.com/document/329004436/Lead-Task-Force-Report-10-26-2016>.

Battle Creek inspects 94% of rentals. About 500 rental units are unregistered. Housing market values are very low. There are about 570 currently vacant or abandoned buildings out of 17,000 structures total.

Program Structure/Capabilities.

The city employs five code officers. They get on-the-job training and mini sessions. There are regulatory course requirements for the ones registered with the states. Deteriorated paint is deteriorated paint – no differentiations for lead. They will note structural deterioration if evident. They are able to meet volume needs with current staffing. Previously had a basically unenforced rental program, did 3,000 inspections in 30 years. One of the staff members is a fully certified lead-based paint inspector and risk assessor.

They register and inspect all rentals; registration is valid for three years, some valid for six years if there were no prior issues. Also do exterior inspections of a third of all structures as part of an annual property survey. So that could cover about 7,000 units.

An average rental inspection takes 15-20 minutes, covering both the interior and exterior. In 2018, 618 citations were issued. Probably 500 came from code officers.

Everything's digitized. Checklists go out to landlords so that they know what to expect. Severity of violations seem to be going down. There is no exterior painting from October to April, so that may slow repairs. Standard repair orders are 60 days, and landlords can request additional time. Most orders are completed within the 60 days. Noncompliance goes into the court

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system, so that process can take longer due to issues in scheduling with courts; judges have limited schedules. They handle 10-30 court cases a week.

No immediate fines, but the program is so wide that that would be problematic. The city spends an unusual amount of money on code compliance to account for imposing lower fines.

A regression analysis found that rental properties didn't have a negative impact on values in Battle Creek. Suggested that code compliance efforts are having an impact, but the city still has overall low property values.

Paint program for residents which includes some education on lead and free paint – just completed second year of operation. The city will offer free paint to the people who are out of compliance if they use it in 60 days.

There are six lead-certified contractors in Battle Creek.

The Battle Creek City Commission subsidized rental inspections, because they do have people who consider them cost burdens. The commission is very sensitive to taxpayer costs.

Potential Recommendations Include:

- Dust testing after paint repair? Simple to train code inspectors, would have to understand costs and impacts on housing.
- Data matching between families with EBLL kids (currently receiving data from Medicaid and conducting door-to-door outreach) and paint citations.
- Operations side works well, need to think about incremental steps to progress towards better prevention.
- Lots of rehab in Battle Creek already.

Meeting Two: December 18, 2018 – City of Battle Creek Offices

Attendees:

Chris, Calhoun County Public Health Department
Chip Spranger, Re/Max Realtor, also a property owner
Michelle Horne, Personal Health Manager, oversees county lead program; also a property owner (via telephone)
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

County health department handles case management for EBLL cases. They don't do official lead inspections, but do evaluation of home and identify potential sources, give education. Part of case management is getting connected with programs who can address hazards. One issue is

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lack of resources for people who don't qualify for programs. The education may be overwhelming for people.

There is a huge gap between housing officials/people who identify potential hazards and the kids who screen positive. In the past, there was no communication between two. We've seen significant improvement due to task force and now have a very strong relationship through the CHIP program and targeting houses for rehab with kids who are elevated.

They don't know of an issue unless a kid gets tested, trying to get more kids tested, lots of people on private insurance aren't getting tested. Currently get no reimbursement on those kids (or uninsured kids). Communication between departments is the biggest thing they would like to see addressed.

The county task force has talked about requirements at sale or lease. We're seeing issues with people who don't register properties, people who do land contracts. City of Battle Creek has a relatively inexpensive rental program. Need to find a balance to not put large burden on good landlords.

There is a feeling in the city that inspections are too strenuous, and the city will jump all over you. People are less interested in buying in Battle Creek.

Potential Recommendations:

- Health department has issues getting into homes, getting a list of homes where there is a concern if it could be narrowed down to something usable.
 - Possible variables: age of home, is there chipped paint, are there children; would then try to make sure kids are lead tested. Then would triage out the homes that need to be worked on. Possibly sort by lack of compliance as well?

Meeting Three: December 18, 2018 – City of Battle Creek Offices

Attendees:

Dan Osborne, Certified Risk Assessor, Community Action Agency
Cheryl Grimes, Housing and Intake Manager, Community Action Agency
of South Central Michigan
Mackenzie Scholte, Community Development Specialist
Shawna Gamble, Housing Grant Specialist
Roger Erickson, contractor and Risk Assessor, works with city
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

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There is a fear that people will walk away from rentals if clearance required. General knowledge base among city about lead is not great. Low level of awareness, one of three main priorities for task force. Did a big education campaign recently, big increase in traffic to website, but programs weren't off the ground – didn't have a specific call to action. Local foundation funding. Doubled amount of child lead testing – saw a bigger bump than when the Flint news hit. High engagement levels. Money is done, ended last year, some ads are still running. Funding for continued education campaign is a need.

Lots of energy, people do want to discuss and address it. Gotten physicians to the table for the first time, beyond activities been able to pull off previously. Early childhood people are engaged as well. Can send some results from the campaign that was presented.

They have seen good response to the CHIP program so far, have gotten referrals to CHIP from codes when there's a violation CHIP could address. Have been able to postpone hearings while CHIP decides if family qualifies.

Lead task force is informal group, don't have to be appointed to it to attend. 15-20 people come to each meeting. Looking at taking it in a better direction, lots of interest. Members of public can come, but mostly known among stakeholders. Seeing lots of people addressing code compliance issues themselves in unsafe ways.

Potential Recommendations:

- Need some sort of public forum where people could ask questions about what's going on.
- Would be very beneficial to have money for LIRAs upfront – easier for landlords if they're getting referred but don't have to pay for the full thing.
- This group could educate more code officials about the dangers of lead, don't think there's a high understanding of what the hazards are.
- Like the idea of dust wipes for rentals as discussed in meeting one.
- Maybe code officials could get additional training like RRP.

Appendix D: Minutes of Teleconference with Gary Kirkmire of Rochester, NY

Attendees:

Gary Kirkmire, Director of Buildings and Zoning, City of Rochester
Leonard Merritt, Lead Paint Program Coordinator, City of Rochester
Chris Lussier, Community Development Manager, City of Battle Creek
Marcie Gillette, Community Services Director, City of Battle Creek
Dave Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

This transcript from May 2, 2019, has been edited for length and clarity.

About Rochester’s Lead Ordinance

Note: The speakers are Gary Kirkmire with confirmation by Leonard Merritt.

- The lead ordinance came about in December of 2005, implemented 6th of July 2006, and really what the lead ordinance brought to the table was a couple of things: It changed the way that we treat peeling paint. It went from a property maintenance code issue to lead hazard issue. We treat violations as low-, medium-, or high-level hazards, and the fines are appropriately placed. Lead hazards obviously are high-level hazards. So, I changed the way that we treat peeling paint to the extent that it exceeded *de minimis* levels.
- It required us to do proactive wipe testing in the absence of interior deteriorated paint in a unit located in the high-risk area. And then the other thing that it did was it required when we cite interior deteriorated paint in a unit, then not only does the owner have to mitigate that and demonstrate that they did so in compliance with the requirements, RRP; but then after they have stabilized the paint situation, they have to get clearance from a third party lead inspector/risk assessor. We are going to make sure that not only did they hand in this affidavit that attest to them meeting all of those kind of fact, requirements, but we also expect to see a clearance test submitted by one of the third-party agencies that are doing a clearance testing locally. It’s a presumptive ordinance. So it says that structure built before 1978 presumes lead paint on surfaces. That's fine if they're stable. If they're unstable, it presumes that that is in fact a lead hazard, and you can review that with a full risk assessment. We have very few properties that have been able to do that. But they can go through and stabilize it and then they have to get third-party clearance.
- Time frame for the inspections are one- and two-families are six years; everything else and multiple-dwelling mixed-use structures are every three. The one exception to that is

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if we see interior deteriorated paint, and at one- or two-family, and you use in turn controls to mitigate that, then you're going to renew it three years. Because we all know that paint stabilization for interim controls only lasts on average two to three years.

- So the third-party clearance is triggered whenever we cite interior paint violation in a unit citywide. The high-risk area is treated different in that when we don't find interior deteriorated paint in the high-risk area, then we're going to do proactive wipe testing in those units to make sure there's no unseen hazard. Initially we were doing proactive wipes in all units in the high-risk area in year two, three, four, and that range. We were doing upwards of 5,000 units. After that, we altered the code or amended to go to focus our dust-wipe testing efforts where we were seeing dust hazards. And so primarily, that's our one- and two-families, but we still have multiples up to five units included in that. So, now we do about 2,800 units.
- Anytime we're in a unit, doing an inspection the observation for deteriorated paint exists, both inside and outside. And then when we're in that unit, in the absence of the deteriorated paint, if it's in that high-risk area, then we're going to have to do the wipe test, if one hasn't been done in three years.
- **What protocol are you using for the wipe tests?** Well, we actually are our local requirements are our expectations for even the third party basically follows the same clearance protocols. So, if the unit has four rooms, then we're going to do two samples in up to four rooms. We're going to do a window well, and the floor, and each of those four rooms. And then we're going to include a blind. So for floors the standard is less than 40 micrograms per square foot. Same as the windowsills and window wells to 50 and 400.
- **Staffing and training.** Since 2007, we've actually lost 33% of code enforcement staff, overall. One of the things that we've done to combat that was that in 2009, we took three pretty large city departments and we merged them into one. So we took community development, economic development, and our neighborhood service centers, and we formed the Department of Neighborhood and Business Development. And when we did that, one of the first things we did was take inspection staff from four different areas and centralized them into one bureau. It was Inspection and Compliance Services. And the first task that we took on, which is a really monumental task, and those of you in the room that our code officials know, there's we took our new and existing building inspectors, and we cross-trained them. And that was like, a two-year effort to bridge the gaps that existed between those folks, when we proved to civil service that we could successfully do that. We kind of blew up the civil service hiring process for the code enforcement officer position, and we next targeted our lower-title inspectors, and we got them in the mix. Now our code enforcement officers, who are certified by New York State as well, have the capability of doing everything from new

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construction to existing buildings they do high grass and trash. They do vacant buildings, and they're all certified to do lead. So all of our training is done in-house.

- ***How many units are you doing a year?*** We have roughly about 26,000 one- and two-family rental properties. We're inspecting about 14,000 units a year through the various programs we're involved in. Probably 22 of the 26,000 one- or two-families are high-risk.
- ***From a funding standpoint, how is testing paid for in the community? Is that paid for by the owners of the property?*** Cost-wise, the owners would be responsible for playing for the third-party clearance. So there's an incentive upfront. I just say that our budget is 100 revenue over expenses, and there's a variety of ways we get there. One of the ways we get there with lead is Monroe County who, you know, the other thing that's missing in this conversation is the true collaborative effort with lead, right? Lead by our lead coalition, of course. But we have a really good strong relationship with our county health department, and Monroe County Human Services, which is the folks that serve our DSS population.
- So I mentioned that because I'm going to give you an example of how close our relationship is. The first obstacle I hear from people that are not well versed in the rental inspection program is, "How do you get access to units?" and there's a variety of ways we do that. Most of that is the way that we treat people, and the way that we have our inspectors prioritize customer service first and foremost. We want people to understand why they need to do something, and we want them treated with respect and dignity in the process; and we do customer satisfaction surveys, and we average between 90 and 100% satisfied cost, so that's one element of it. One of the other critical functions is our relationship with DHS. Every month, we send them a list of health and safety violations and where there are tenants that are getting DSS subsidy. They sent rent withholding notices to those properties, and so owners in our most challenged neighborhood that rent DSS come through the process as a matter of routine, because they don't want rent withheld and the lack of SEO as a health and safety violation. We haven't had to get a warrant in seven years. So that that doesn't mean we don't write tickets. We write 4,800 tickets a year. The way that we handle people and the way that we expect our people to handle people goes a long way. And our relationship with DHS really gets us in the door in situations where people might not otherwise want to play.
- The actual cost of the lead program is around \$65,000. That's the extra cost for the extra work we do. Monroe County Health Department primary prevention grant from the state health department allocates \$31,000 of that grant to us every year. It funds roughly 45% of the program.
- ***What have you found in regard to the average amount of time that it takes your inspectors to conduct testing?*** We ballpark around 40 minutes for a test. That's for the

visual and for the test itself. What we do to try to offset some of that dilemma of limited inspector time, we don't do the majority of our wipe test on the initial inspection, because we can't forecast with accuracy whether or not we'll be ready to do one so we can't have lost opportunity time. So, in other words, if we send an inspector out to do a three-family, we're going to give them time to do that. We have built in no expectations for that initial inspection for lead. On subsequent inspections, if it needs one, that's when they'll be done. We're passing, like, 95% visually in the units.

- **What is the time frame for compliance?** So, we pride ourselves and being reasonable. So our expectations will be in line with what we see. So, if we see raw sewage immediately, we expect that to be mitigated today. Immediately, if we see a child in a hazardous lead environment, immediately we expect that to be dealt with. If we have some property maintenance issues, then they're not health and safety; we'll work with the owner as long as their plan is reasonable. So, it all depends on the circumstances. Time of year sometime comes into play; campaign your house on the outside in the winter here. We deal with reasonableness, and I think that's the other key element of being partners. We're not adversarial with landlords, unless they choose to be; we're partners with landlords.
- Not all lead professionals are equal in the world of ethical and moral values. We amended the lead ordinance to give us the right to hold bad inspectors with a nonresponsibility charge. And so we have a due process, which is a hearing examiner will hear the case if they want to have a hearing, and if that charge sticks, then we can refuse to accept clearances from them for X amount of time. And we had to suspend seven people.
- **Passing percentages.** What we're showing today after 12 years, which would have been the end of last June, is that 88% pass the dust wipe test. So we do have failures, but 88% of the time they have gotten them through the process by passing over all over the 12 years. It was 85 [percent] for the first couple of years, but even then it was pretty high. We are way are more effective in terms of passing rate than anybody envisioned it would be. A couple of years before the ordinance was adopted, we had been telling landlords, "This is coming, you need to start treating." We started to try to get them to tailor their business models to be prepared for it.
- **Impact.** So since the inception of the ordinance, adoption of the ordinance, it's been reduced by 85%, the number of kids with 10 [micrograms of lead] or higher. Studies it showed that the rate of decline was faster than the rest of New York State. It's absolutely had an impact.
- Going back to the business model, landlords adjusted their business model the meet the expectations. No one wants to be first to have a lead hazard documented in public record. That was really the big issue for landlords initially, as they didn't want this public

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record that people could use in litigation. Right? And then, if they did have that, you better mitigate it within a reasonable time, because your exposure is more and more the more you're out there. Landlords adjusted their business models, because they're going to meet the expectation of code enforcement. Because they want to keep doing their business, they don't want to be bogged down.

- **Has it negatively impacted your housing market?** That was a big fear of some folks in city council at the time. You have the benefit of, if you're looking at our stuff, you don't have to rely on us. We've got three impartial outside observation evaluations of our ordinance. CGI has been in here. Twice. University of Rochester, led by Katrina [Korfmacher], did one, and they have the data to demonstrate what you're looking for.
- We'll be able to tell you anecdotally that some landlords that really weren't good landlords got out of business. But I think a lot of it goes the way that we've been talking about earlier is the way you treat people: You have reasonable expectations. The way you work with people, it's not unusual for us to work with the landlord over a year to get a CMO done. That's fine. As long as they mitigate hazards within a reasonable time.
- We're dealing with over 9,000 properties at all times with open cases. But reasonableness is applied across the board, and there is no, absolutely no problem here. Expecting compliance to the same level in our most challenged neighborhood as there is in our best neighborhood, because landlords are used to the process. We're not starting from scratch, and it doesn't sound like you are, either.
- **Owner occupants.** Owner-occupant single families are exempt from the violation section and the clearance section of our ordinance, but we do offer free lead inspections. We'll do both visual and wipe test for any owner that wants one. If we see deteriorated paint, we give them guidance on how to do that properly, and where to seek resources to make sure they do it right, and how to get somebody in there to do clearance thereafter, but they're not subject to the ordinance.
- **What's the average cost for testing?** For a third party, between \$160 and \$180. For us, though, we have a contract with a lab, and we're paying three dollars. That comes with all the supplies for daily pickup.
- And from a government perspective, every time we have to bid that contract out, there is a real threat there. So we allocate a certain amount of resources for that every year. And if for some reason XYZ Company doesn't choose the bid, and the price goes up double, we'd have to act accordingly and figure that out. But today, we've been blessed with really continuing to drop numbers. But if they've got the contract from Rochester, that signals to almost every other municipality, they're ones to go to. So you really serve a lot of business from other labs based upon the recommendations that Rochester gives.

**Technical Assistance
for Code Transformation
and Innovation Collaborative
(the TACTIC Project)**

**Final Report for the
City of Detroit, Michigan**

by

**David E. Jacobs, PhD, CIH
Sarah Goodwin**

for the

**Michigan Department of Health and Human Services,
Child Lead Exposure Elimination Innovations Grant**

Contract Number E20183042-00

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**National Center for
HEALTHY HOUSING**

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Summary

Detroit is undertaking a two-pronged effort to address lead-based paint hazards. The first involves completing lead inspections and risk assessments and remediation in virtually all the city's rental stock; this is occurring on a scheduled ZIP-code-by-ZIP-code process. The second involves a code inspection that, among other things, seeks to identify and correct deteriorated paint, regardless of whether it contains lead.

At our April 2019 meeting with the City of Detroit, it was reported that four ZIP codes are now required to be in compliance. There are 43 ZIP codes in the city, and all are required to be in compliance by May 31, 2020. The pilot ZIP code program began on February 1, 2018. Most rental properties are not properly registered and have no current certificate of compliance. Mayor Duggan and the Buildings Safety Engineering and Environmental Department (BSEED) launched a process last year to encourage more landlords to register their properties. Since that time, the city has increased its number of registered rental properties from about 2,000 to 8,783, out of a total of approximately 152,000 rental units, most of which were built before 1978; an estimated 25,887 rental units have young children.

Other best practices for rental housing codes across the country provide for proactive paint, dust, or soil testing, instead of only requiring action after a child has been exposed. Detroit's approach to conduct lead inspections and risk assessments in most of the city's rental housing stock is quite innovative and deserves further evaluation following its full implementation.

This report describes the current Detroit code and lead ordinance process and provides recommendations on improvements to its housing code and associated inspection, enforcement procedures, staffing, public education, and other related matters. This project was funded by the Michigan Department of Health and Human Services, Child Lead Exposure Elimination Innovations Grant, contract number E20183042-00. The opinions in this report are those of the National Center for Healthy Housing and do not necessarily reflect those of the City of Detroit.

Summary of Recommendations

Conduct further public education to ensure rental property owners understand when compliance with the Detroit Lead Ordinance is required for their units in a given ZIP code and what funding options may be available for them.

Increase the number of housing code inspectors and lead inspection firms. Owners hiring inspectors currently experience about a month's wait.

Evaluate the progress of the ZIP-code-by-ZIP-code compliance process to determine impediments to full compliance.

Create a referral system to help property owners who need to comply with the Detroit Lead Ordinance gain access to lead inspection and hazard control services funded by Detroit’s recent HUD Lead Hazard Control grant.

Introduction

How Housing Codes Can Help Prevent Childhood Lead Poisoning

Housing quality is an important social determinant of health in general and childhood lead poisoning prevention specifically. Yet the housing and health sectors are typically governed by separate fragmented and isolated systems. Although today’s housing codes originated over a century ago in the sanitation movement to combat health problems such as cholera, tuberculosis and typhoid, current codes (with important exceptions described below) typically refer housing-related lead paint problems to local health departments instead of using the code process to identify and correct these hazards. Health departments often focus on identifying lead hazards only after an elevated blood lead level has occurred.

This secondary prevention reactive approach hampers the application of the existing housing inspectorate and code systems to detect and correct lead hazards in housing before children have been exposed. Furthermore, housing codes in many jurisdictions are driven largely by complaint-driven reactive enforcement systems. In many cases, local housing codes are either silent on correction of lead hazards or defer to specialized lead risk assessments by local health departments. An effective code enforcement system can be a powerful tool for improving and protecting residents from lead exposure. Appendix A describes key elements of an effective system.

Key Characteristics of Detroit

Detroit has a population of about 679,865 (2017 estimate), of whom about 49,879 are children between 0-5 years old. Detroit has about 258,471 occupied housing units, 51.9% of which are rentals. Based on Detroit’s population data, an estimated 25,887 of those units would have children under six living in them. Fifty-eight percent of Detroit’s housing was built before 1950, and 91% was built before 1978.

National Best Practices

Detroit’s ZIP-code-by-ZIP-code lead inspection/risk assessment process appears to be unique in the nation. If substantial compliance is achieved by 2020 as intended, it will likely emerge as a best practice. Full lead-based paint inspections and risk assessments are currently required only in public housing, project-based Section 8 housing pursuant to the HUD Lead-Safe Housing Rule, and in units served by Detroit’s Lead Hazard Control grant from HUD.

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Several municipalities across the country have taken action to address lead hazards in housing through codes, which are reviewed briefly here.

For example, in December 2005, Rochester (NY) passed an ordinance adding inspections of most pre-1978 rental housing for lead paint hazards to their ongoing rental housing inspections needed to obtain a certificate of occupancy (C of O). Rental housing inspections occur every three or six years, depending on building size (see <https://www.cityofrochester.gov/article.aspx?id=8589935004>). To receive a C of O, property owners must correct identified lead hazard violations (if any). If hazards are identified, the property owner must pass a private clearance test (a visual inspection plus at least eight dust wipe samples). The protocol, available at <https://www.cityofrochester.gov/lead/> and <https://ecode360.com/8677786>, states in part: “Dust samples shall be taken from each of no more than four rooms. The selection of rooms to be tested, where applicable, shall include no less than one bedroom and the living room. At least one wipe sample shall be taken from a window trough or a windowsill with a paint history, if present, and one from a floor in each room. Where there are less than four rooms, then all rooms shall be sampled.” Results are compared to current EPA dust lead hazard standards). For the initial inspection, code officials examine paint condition; and if it is intact and the home is in a high-risk area, then they will collect eight dust wipe samples to ensure that the home is safe for children. If paint is not intact, lead safe work practices must be used to repair the paint, followed by private dust testing to ensure cleanup is adequate (unless the home has been found to be free of lead-based paint). The city maintains a publicly accessible database showing the date all rental properties passed their most recent C of O inspection, including lead.

The code does not appear to have significantly impacted the housing market in Rochester, a key concern of code officials and property owners prior to passing the law. Landlords have since accepted it as a routine cost of business (<https://www.ncbi.nlm.nih.gov/pubmed/22001644>). As of August 28, 2018, Rochester has inspected 166,906 individual dwelling units (see <https://www.cityofrochester.gov/lead/>). Data show that blood lead levels in Rochester improved more than twice as fast compared to the rest of the state. Eighty-six percent of inspections did not have an exterior lead violation, and 88% of those with a violation had complied with remediation as of August 2018. For interiors, of the 166,906 units inspected, 95% passed the initial visual inspection, and among those with an interior violation, 84% had complied as of June 30, 2018. Of the 4,141 units cited with a lead dust hazard, 98% have complied as of June 30, 2018. Ninety percent of the units subjected to dust wipe testing (over 30,000 units as of 2016) passed. During the first 12 years, the city has issued 782 vacate orders for situations with severe hazards that put children at risk and 3,418 tickets for noncompliance. The frequency of violations has declined in recent years, as landlords know what to expect. Furthermore, the ordinance has created a demand for more private inspectors to perform

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clearance testing; the increased competition has resulted in a price reduction. Before the law was passed, a clearance test cost about \$350 per unit; the cost is now about \$125 per unit.

In Maryland, owners of older residential rental properties must register their properties annually with the Department of the Environment. Private inspectors issue a lead paint risk reduction certificate for each dwelling that passes the inspection, which includes both a visual examination of paint condition and dust lead testing. Rental properties covered by the law must be free of chipping, peeling paint and lead-contaminated dust. To qualify for registration, owners must hire a certified contractor to address any defective paint and have an accredited lead paint inspector verify compliance before any change in occupancy. Inspectors issue a lead paint risk reduction certificate for each dwelling unit that passes the inspection. Whenever a tenant notifies an owner that there is defective paint or a child with an elevated blood lead level, the owner has 30 days to conduct modified risk-reduction measures and pass lead inspection certification. The rental property owner is responsible for temporarily relocating the family to a lead-safe or lead-free dwelling while the original dwelling undergoes risk reduction measures. A key component in Maryland's substantial decline in childhood lead poisoning has been its strong public enforcement of the Maryland Reduction of Lead Risk in Housing Act coupled with local enforcement coordination and private enforcement actions by nonprofit agencies and *pro se* tenants. The Maryland Department of the Environment files 500 to 800 violation notices annually, and a team from the state's attorney general's office is responsible for enforcing actions against non-compliant owners. Another highly effective best practice has been Maryland's policy of pursuing enforcement against a rental property owner's entire non-complaint housing portfolio once enforcement actions have been initiated against any one of the owner's properties. Local housing code enforcement and landlord licensing officials at the city and county level also help coordinate enforcement by referring noncompliant properties in their jurisdictions to MDE for enforcement of the registration and risk-reduction requirements.

Rhode Island passed the Lead Hazard Mitigation Act in 2002 and implemented code regulations in 2004. Before any change in ownership or tenancy of a property and at least every two years, the property owner must have the property inspected and demonstrate via a certificate of conformance (COC) or a lead-safe or lead-free certificate that the dwelling is safe for children. Establishing lead safety includes dust testing. Under the law, rental property owners are required to attend a training on unsafe lead conditions, inspect/repair any lead hazards at their properties, make residents aware of their findings and actions, address residents' lead-hazard concerns, follow lead-safe work practices during maintenance, and verify each unit's compliance through a lead inspector. Typically, the owner must have the property inspected every two years and prove its safety for children by showing a COC or a lead-safe or lead-free certificate. Since the law's enactment the state has been challenged by compliance. In 2014, when the Providence Plan completed an evaluation of the Lead Hazard Mitigation Law, it found that only 20% of the covered properties had complied with the regulations within the first five years of implementation. Several cities have taken steps to improve enforcement. Providence,

for example, created a separate division of Housing Court to address lead violations. The Inspection and Standards division reported that 484 of 537 lead violation cases filed over the first four years resulted in corrective action. An analysis conducted by the Rhode Island Department of Health discovered that there was a significant decline in children with elevated blood lead levels in Providence between 2012 and 2013. Notably, the decline coincided with the implementation of the building permitting requirements and the lead docket.

The National Healthy Housing Standard, a model code, provides that lead levels at or above federal regulatory limits are defined as hazards and must be remediated. Those levels include deteriorated lead paint (0.5% by weight or 1.0 milligram per square centimeter); dust (40 micrograms of lead dust per square foot [$\mu\text{g}/\text{ft}^2$] on floors and 100 $\mu\text{g}/\text{ft}^2$ on windowsills). The Standard also states that painted surfaces shall be maintained intact and with the exception of paint tested and found not to contain lead, deteriorated paint at a property built before 1978 shall be repaired using lead-safe work practices and follow-up dust testing.

Many federally assisted housing programs, including public housing, Section 8 project-based assistance and federally assisted housing rehabilitation programs also require paint and dust testing, regardless of whether a child with an elevated blood lead level resides there.

Additional case studies of best practices across the nation for childhood lead poisoning prevention are available here: <https://nchh.org/who-we-are/nchh-publications/case-studies/lpp-stories-case-studies/>.

Methods

We conducted several conference calls with key local personnel to introduce the project, describe the process, and identify current codes in October and November 2018. After reviewing the local code, we used the NCHH Code Comparison Tool (<https://nchh.org/tools-and-data/housing-code-tools/cct/>) to compare Detroit's housing code with best practices (see Appendix B).

In December 2018, we conducted an on-site visit, which was attended by Harolyn Baker, Director of Child Health Services, Maternal and Child Health; Arthur Rushin, Supervisor, Residential Inspections, BSEED; and Anna Pinter, Lead Program Manager, Housing and Revitalization Department. A second meeting in April 2019 was attended by Julie VandeVusse, Project Manager, BSEED.

Representing the National Center for Healthy Housing were David Jacobs and Sarah Goodwin. The relevant documents were obtained and subsequent data requests identified. The timeline includes provision of a draft report (this document) to the jurisdiction in mid-March by NCHH,

comments from Detroit personnel to be integrated into the draft in mid-April, and completion and presentation of the final report in May 2019.

Results and Recommendations

Code Language

Detroit requires that lead inspections and risk assessments be completed by independent third-party private certified firms. The third-party inspectors complete two forms, a Lead Activity Declaration Project and a Lead Remediation Clearance Current Summary form. The city is enforcing on a ZIP-code-by-ZIP-code process. Six months before enforcement starts in a given ZIP code, the city sends mailings, internet notices, and meetings to alert the regulated community of the new compliance target dates. Owners then have six months to comply.

If a hazard (violation) is identified and there is no compliance, the city issues a violation notice(s). If the rental property is not in compliance, the tenant can apply to participate in the rental escrow program, and a financial institution can hold the rent in escrow for 90 days. If there is still no compliance at the end of the 90 days, the tenant gets to keep the escrow money.

Although the Detroit housing code does prohibit deteriorated paint, it does not require actual testing of that paint; instead, the third-party private inspectors test the paint for lead. Therefore, no code language changes have been recommended for Detroit.

Under the ordinance, landlords who do not have a certificate of compliance (unaddressed lead issues are one reason to withhold a C of C) cannot legally collect rent from their tenants until the issues are addressed and a C of C is issued.

No code language changes are recommended in this report. Although local code officials in some jurisdictions do occasionally measure lead in paint, dust, or soil, in Detroit, this function appears to be performed mostly by private inspectors and is underway.

Staffing and Enforcement

The city has issued progress reports for each ZIP code.

As more ZIP codes are scheduled for compliance, there may need to be additional capacity in lead inspectors for the city. Owners hiring inspectors reportedly currently experience about a month's wait.

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In addition to city staff and third-party lead inspectors, there is a lead enforcement task force, including state personnel, local personnel, nonprofits, Wayne State University, legal personnel, and others.

A major gap is reported to be a continued lack of awareness, finances, and RRP- (Renovation, Repair, and Painting) certified contractors. Outreach and awareness is a key aspect of proper enforcement. To enforce the regulation, rent could be held in escrow for 90 days (before the tenant gets to keep the money), and there is a \$250 fine for not registering in the first place.

Finally, Detroit city staff responsible for enforcing the Detroit Lead Ordinance should work with other city staff responsible for implementing Detroit's new Lead Hazard Control HUD grant to ensure a seamless referral system to help owners comply.

Training

Housing code inspectors in Detroit currently undergo on-the-job training to fulfill their current duties. Code inspectors in Rochester, NY, and elsewhere are cross-trained to enable them to identify both housing code violations and lead-based paint hazards. The city's reliance on third-party inspectors may render such cross-training unnecessary. The existing code inspectors in Detroit are not currently trained in lead hazard identification, although other cities in Michigan, such as Battle Creek, do employ code inspectors with cross-training in both recognition of code violations and lead-based paint hazards. In addition to cross-training of code inspectors, other training needs may include the following:

- Lead hazard awareness for supervisors and property owners, especially small low-income rental property owners.
- Training for health department case workers who coordinate care for children with elevated blood lead levels on housing code violation procedures: specifically, how they can request a lead risk assessment in homes of children with elevated blood lead levels.
- Healthy homes best practices and standards for code inspectors, so that they will be better equipped when encountering other hazards.
- "Soft skills," such as customer service, communications, and ethics training for code officers who may interact often with tenants and landlords from various cultural backgrounds.

Implementation Considerations – Involving the Public

Integrating lead hazard identification into the housing codes in Detroit should also consider how best to achieve community consensus. This will require careful articulation of why this is needed, as well as related costs and benefits. Community leaders should be engaged to help articulate why housing codes present an important opportunity to address childhood lead poisoning in Detroit.

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Those opportunities include:

- Ending the historic divide between housing and public health.
- Taking action before children are harmed instead of only reacting after the harm has been done.
- Potential for new job creation.
- The benefits of a “health in all policies” approach.
- How the costs of proactive code inspections are less than the costs of treating and educating children with elevated blood lead levels.
- How proactive codes can benefit landlords by reducing the prospect of unanticipated housing repairs and avoidable litigation.
- Building public trust in democratic institutions to address preventable diseases, such as childhood lead poisoning.
- Active engagement of the city’s philanthropic institutions.
- Ending the current inefficient practice of shifting the costs of lead poisoning to our schools and medical care institutions.
- Explanation of how existing resources, such as Detroit’s new HUD lead hazard control grant, can be used to help landlords comply.

To maximize the public’s involvement, the city should consider appointing community leaders and members to the existing advisory council to provide organized input.

During the decision-making process, the city should make sure to consider equity impacts of code enforcement. Some particular recommendations to keep in mind include:

- Include community members in the development of the structure of the policy process to ensure that they are represented throughout the process.
- Implement strategies that are holistic and break down silos.
- Develop awareness campaigns so that the necessity of the policy changes are conveyed to the community.
- Prioritize resources at areas that need them most.
- Protect tenants as programs are implemented.

More details for these recommendations and others about addressing equity in lead poisoning prevention policy change can be found in *Achieving Equity in Lead Poisoning Prevention Policy Making: Proceedings from a Consensus Conference*, a report from Human Impact Partners:

<https://humanimpact.org/wp-content/uploads/2018/11/Achieving-Equity-in-Lead-Poisoning-Prevention-Policy-Making-Proceedings-from-a-Consensus-Conference.pdf>

Conclusions

A recent authoritative report, *10 Policies to Prevent and Respond to Childhood Lead Exposure* (see <https://nchh.org/information-and-evidence/healthy-housing-policy/10-policies/>), showed how every dollar invested in residential lead hazard control (which can include better codes) will yield at least \$1.36 in monetary benefits. Community involvement in such changes is essential. Although housing codes are often considered to be mundane, they can also be an important vehicle to rebuilding trust in government and in the city's ability to solve its challenges. In short, implementation must include an important public education and involvement component if such changes are to be lasting and productive.

Detroit's lead requirements, when fully implemented, will be a national best practice. Its successful implementation will hold important lessons for other jurisdictions. The reliance on third-party lead risk assessors would appear to make cross-training of Detroit's code officials unnecessary; however, additional city staff may be needed to oversee the third-party inspectors. Additional training and awareness is also clearly needed for small landlords and city legal staff charged with enforcing the Detroit Lead Ordinance. Changes in staffing levels, enforcement, and creative use of subsidies, such as the City of Detroit's new HUD Lead Hazard Control grant, can all be used to help eliminate childhood lead poisoning as a major public health problem in Detroit.

Acknowledgments

We thank Julie Vande Vusse and other City of Detroit staff, for their important review of this report.

Appendices

Appendix A: Elements of Effective Housing Code Enforcement Programs

Appendix B: Code Comparison Tool Results

Appendix C: Meeting Minutes

Appendix A: Elements of Effective Housing Code Enforcement Programs

Adapted from *Up to Code: Code Enforcement Strategies for Healthy Housing*.

Adopt a Strong Housing Code

Housing codes often contain ambiguous phrases in their standards, such as “clean,” “sanitary,” “safe,” and “healthy,” and the lack of detail makes efficient and effective code enforcement difficult. Without specific standards to serve as a guide, property owners, residents, and code enforcement officers can interpret housing codes differently, leaving compliance decisions subject to challenges and residents vulnerable. In addition, many housing codes don’t properly address health-related threats in the home, such as pests, moisture, ventilation, and chemicals (radon, lead, and pesticides, for example).

Resource/tip: The National Healthy Housing Standard provides model codes that incorporate public health rationale into building code parlance.

Fund the Code Enforcement Program Sufficiently

Effective code enforcement programs require sufficient financial resources. In many localities, state law sets forth how the locality may fund its code enforcement operations (typically through general fund, Community Development Block Grant (CDBG) funding, permits/regulatory fees, or fines). State laws may also set forth the types of fees and amount of fines the jurisdiction may assess on those who violate the housing code.

Resource/tip: Some communities fund their code enforcement programs with moneys from the CDBG program, administered by the U.S. Department of Housing and Urban Development. These grants can fund code enforcement officers’ salaries and related expenses, legal proceedings to enforce housing codes, and rehabilitation or improvement of some types of housing.

Training Officers Comprehensively

Code enforcement programs require well-trained officers to enforce the local housing code. Officers need to participate in a broad-based training program, periodic training updates, and routine inspections with other officers to ensure professionalism and consistency in the field. Training should cover all applicable federal, state, and local laws but also best practices, soft skills (e.g., how to work effectively with residents from diverse backgrounds), and availability of community resources to assist residents.

Resource/Tip: The National Healthy Homes Training Center offers training for code inspectors.

Partner with Community Organizations

Community organizations can raise awareness of the purpose, policies, and procedures of code enforcement, and provide supplementary resources and services.

Resource/tip: Code enforcement programs have a variety of potential community partners, including housing advocates, public health professionals, immigrant and refugee service providers, social workers, tenant organizations, and home repair programs.

Promote Cross-Agency Coordination

Ensuring housing is safe and habitable requires cross-agency coordination. Because responsibility for health and safety is usually divided among various city agencies or departments, intragovernmental communication and collaboration can help make code enforcement more efficient and effective, and less like a series of disjointed, isolated efforts.

Resource/tip: Staff of the Erie County (NY) Department of Health’s Healthy Neighborhoods Program and Lead Poisoning Prevention Program are trained and deputized code enforcement officers, which enables health department staff to formally cite for violations of the Erie County Sanitary Code while conducting home assessments. Deputizing health and/or housing agencies to enforce each other’s code provisions assures a unified perspective toward housing-based lead poisoning primary prevention.

Develop a Cooperative Compliance Model

Under a cooperative compliance model, rather than simply inspecting housing and citing for violations, the code enforcement officer works cooperatively with property owners to help them understand the elements of healthy housing, the importance of code compliance, and how to bring the property into compliance. The code enforcement officer is armed with cooperative tools – information, education, and resources – along with traditional enforcement sanctions. Cooperative compliance allows property owners and officers to work together to improve housing conditions and promote health.

Resource/tip: Many communities struggle with enforcement. A cooperative compliance approach can reduce the number of properties that require follow-up enforcement action.

Enforce the Local Housing Code

Most owners do their best to comply with housing codes, but code enforcement programs must be prepared to deal with those who don’t. To protect the health and safety of residents effectively, programs need to be flexible and efficient, and have teeth. There are three major types of enforcement: administrative, civil, and criminal.

Resource/tip: ChangeLab Solutions’ [Healthy Housing Laws that Work: Creating Effective Implementation and Enforcement Clauses](#) explains the different ways local governments can enforce housing and property maintenance codes.

Adopt a Proactive Rental Inspection (PRI) Program

Traditional code enforcement programs are complaint-based; that is, in response to a resident’s complaint about a substandard housing condition, a code enforcement officer conducts a housing inspection. Under a PRI program, rather than wait for a complaint to trigger a housing inspection, the locality inspects all covered rental housing on a periodic basis. Though the specifics vary by locality, PRI programs typically share the same basic structure: registration, periodic inspections, and enforcement. A PRI system doesn’t replace a complaint-based system and can help both property owners (by incentivizing routine maintenance that prevents costly repairs) and tenants (e.g., by ensuring equitable access to services for vulnerable populations that may be unaware of or fearful of exercising their rights under a traditional complaint-based system).

Resource/tip: ChangeLab Solutions’ [A Guide to Proactive Rental Inspection Programs](#) and [Model Proactive Rental Inspection Ordinance](#) explains how proactive rental inspections can help protect vulnerable residents, preserve safe and healthy rental housing, and work to increase neighborhood property values.

Establish Supplementary Programs

Jurisdictions can establish auxiliary programs that increase code enforcement effectiveness by educating community members, incentivizing and/or financing repairs, and helping residents move when necessary.

Resource/tip: [Up to Code: Code Enforcement Strategies for Healthy Housing](#) contains several examples of supplementary programs that other communities have established to support their code enforcement activities.

Evaluate the Code Enforcement Program

Code enforcement programs should collect and analyze data regularly to better understand their strengths and weaknesses. Evaluation can help monitor functioning, identify areas for improvement, help to justify resources, and provide accountability. Communities may also consider tracking key performance metrics by census tract or neighborhood to ensure equitable access and that the system is working well for all residents.

Resource/tip: Data collection and analysis can provide valuable information to both government agencies and the community. Whenever possible, communities should work to establish data

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sharing with other agencies or programs and, as appropriate or feasible, make data publicly available.

Citation

ChangeLab Solutions (eds.). (2015, May). Up to code: Code enforcement strategies for healthy housing. Oakland, CA: ChangeLab Solutions. Retrieved May 23, 2019, from https://changelabsolutions.org/sites/default/files/Up-tp-Code_Enforcement_Guide_FINAL-20150527.pdf.

Appendix B: Code Comparison Tool Results

Background

Location	Property Maintenance Code	Other Code Sections	Other Documents
Battle Creek Uses IPMC 2015	Part 14, Title 4, Chapter 1450: Property Maintenance Code International Property Maintenance Code 2015	842 Rental Housing 1456 Vacant or Abandoned Structures	Rental Permit Application Rental Property Checklist Vacant or Abandoned Registration Form
Detroit Based on the 2000 IPMC	Chapter 9, Article 1: Property Maintenance Code	Chapter 9, Article 1, Division 3: Rental Property Chapter 26 - Housing Chapter 24, Article X: Lead Poisoning Prevention Testing and Prevention	
Flint Uses IPMC 2015	Chapter 5, Article 3: Property Maintenance Code International Property Maintenance Code 2015	Chapter 5, Article 3, Sec. 5.3-3 on: Certificate of Compliance for rental properties	
Grand Rapids Uses IPMC 2012 with amendments	Title VIII, Chapter 140: Property Maintenance Code International Property Maintenance Code 2012	Title VIII, Chapter 140, Sec. 8504: Amendments to the Code including certificate of compliance for rentals	
Michigan State Lead Law	Public Health Code, Act 368 of 1978, Part 54A: The Lead Abatement Act		Lead Hazard Control Rules

Code Comparison Tool

SECTION E: Chemical Hazards – Building Products

Questions: 10
Total Responses: 25
Answered: 25
Percentage Complete: 100%

Status: Average

Questions E1-E6: Lead

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Strong. Congratulations! Your responses indicate that your community is using most of the evidence-based provisions in the National Healthy Housing Standard (NHHS) in this area – NHHS Provisions (7.1, 7.2.2, 7.2.3, 7.2.4). To take the next step in using housing codes to protect resident health, consider implementing some or all of the provisions listed below.

Questions E7-E8: Asbestos

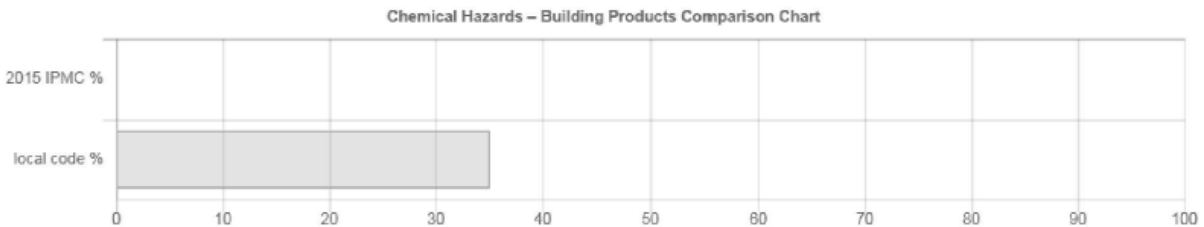
Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.3, 7.3.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

Questions E9-E10: Toxic Building Materials

Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.4.1, 7.4.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

SECTION	NUMBER OF NHHS MANDATORY PROVISIONS	NUMBER OF 2015 IPMC PROVISIONS THAT MEET OR EXCEED NHHS PROVISIONS	COMMUNITY SCORE (POINTS ALLOCATED FOR EACH PROVISION THAT WAS PARTIALLY OR FULLY MET)*	COMMUNITY % (COMMUNITY SCORE/NUMBER OF NHHS MANDATORY PROVISIONS)
Chemical Hazards – Building Products	10 (100%)	0%	3.5	35%

*Meets or exceeds standard = 1 point; partially meets standard = 0.5 point; doesn't meet standard=0 points



NHHS Provisions that You Reported Already Exist in Your Local Code

NHHS Provision 7.2.5. Lead-based paint shall not be applied to the interior or exterior of any dwelling or dwelling unit.

NHHS Provision 7.2.1. Lead levels at or above federal regulatory limits pursuant to 40 C.F.R. § 745.65 are deemed hazardous:

1. Lead-based paint on an existing painted surface – 0.5% by weight or 1.0 milligrams per square centimeter;
2. Dust on floors – 40 micrograms of lead per square foot of settled dust (µg/ft²);
3. Dust on interior windowsills – 250 µg/ft²;

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4. Dust on window troughs (wells) – 400 µg/ft²;
5. Bare soil in children's play areas – 400 parts per million (ppm) of lead; and
6. Bare soil in areas of the yard that are not children's play areas – 1,200 ppm.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of *40 C.F.R. § 745 Subpart E*, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.3.1. Friable asbestos-containing material shall be abated by licensed asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.3. Abatement, removal, and disposal of all asbestos-containing material shall comply with all appropriate federal, state, and local requirements.

NHHS Provisions that Your Local Code Does Not Include (in Part or in Full)

NHHS Provision 7.1. All chemical and radiological agents in dwellings, premises, and accessory structures, including but not limited to deteriorated lead-based paint, friable asbestos-containing material, formaldehyde, volatile organic compounds, radon, pesticides, and methamphetamine, shall be contained, stored, removed, or mitigated in a safe and healthy manner consistent with federal, state, and local laws and regulations. When an applicable regulatory limit is more protective than the level included in this section, the more restrictive limit shall apply.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of *40 C.F.R. § 745 Subpart E*, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.2.3. All renovation, repair, and painting work that disturbs a painted surface in a pre-1978 dwelling shall be performed in accordance with the renovation requirements of *40 C.F.R. § 745, Subpart E*, unless the paint has been tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*. Dust clearance testing shall be performed at the conclusion of the renovation work.

NHHS Provision 7.2.4. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, a painted surface shall not be disturbed using methods that involve (1) open-flame burning or torching or operating a heat gun at temperatures above a maximum of 1, 100° F (593° C); or (2) power sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting unless such machines have shrouds or containment systems and a high-efficiency particulate air (HEPA) vacuum attachment that collects dust and debris at the point of generation. The shroud or containment system shall release no visible dust or air outside the shroud or containment system.

NHHS Provision 7.3. Every owner shall maintain in good repair all asbestos-containing material on the premises. All asbestos-containing material shall be maintained non-friable and free from any defects such as holes, cracks, tears, and/or looseness that may allow the release of fibers into the environment.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.4.1. Building materials consisting of hardwood plywood, medium-density fiberboard, and particleboard as defined by *15 U.S.C. 2697(b)(2)* shall not be used in maintenance and renovations within dwellings, unless the materials have been certified to meet the formaldehyde emission standards of *15 U.S.C. 2697(b)(2)*:

1. Hardwood plywood with a veneer core, 0.05 parts per million (ppm);
2. Hardwood plywood with a composite core, 0.05 ppm;
3. Medium-density fiberboard, 0.11 ppm;
4. Thin medium-density fiberboard, 0.13 ppm; and
5. Particleboard, 0.09 ppm.

NHHS Provision 7.4.2. Building materials used in maintenance and renovations, including but not limited to paints, coatings, primers, glues, resins, adhesives, and floor coverings, shall be certified as having no volatile organic chemicals (VOCs) or low-VOC emissions, and having no halogenated flame retardants (HFRs).

NHHS Stretch Provisions (Not Assessed in Online Tool)

NHHS Stretch Provision 7.2. Lead present at or above the following limits is deemed hazardous:

1. Lead-based paint on a friction, impact, or chewable surface, damaged or otherwise deteriorated, or non-intact – 0.06% by weight;
2. Dust on floors – 10 micrograms of lead per square foot of settled dust ($\mu\text{g}/\text{ft}^2$);

3. Dust on interior windowsills – 100 µg/ft²; and
4. 40 µg/ft² on porches.

Why Chemical Hazards – Building Products Matter

Lead is a heavy metal that accumulates in the body when ingested and has toxic effects on the nervous system, cognitive development, and blood-forming and other systems. Sources of lead include lead-based paint and the dust it generates, soil, drinking water, and consumer and other products. Lead-contaminated soil may be found particularly around older buildings contaminated by flaking external paintwork, adjacent to industrial premises using (or previously having used) lead, and near busy roads from the exhaust fumes from leaded gasoline. Lead is readily absorbed from the intestinal tract, especially in children, and its absorption is enhanced by dietary deficiency of iron and calcium.

Exposure to asbestos increases the risk of developing lung disease. Asbestos products were historically used extensively in building materials. Vermiculite insulation in homes may be contaminated with asbestos. Vermiculite insulation should be assumed to be contaminated with asbestos and should not be disturbed. Trained professionals must be hired to remove vermiculite insulation. Formaldehyde is a prominent VOC found in household and construction products. It is a colorless, strong-smelling gas that can cause watery eyes, nausea, coughing, chest tightness, wheezing, skin rashes, and allergic reactions, and a burning sensation in the eyes, nose, and throat.

Formaldehyde is classified by the World Health Organization as a known human carcinogen. The most significant source of formaldehyde in the homes has been pressed-wood products made using adhesives that contain urea formaldehyde (UF) resins.

Suggested Next Steps

You have your results. Now what? Here are some suggested next steps:

- Review your results and identify places where your code is already strong and where there may be an opportunity to improve your local codes.
- Use the graphic provided (or export your data and create one yourself) to create a memo or presentation summarizing these results to start a conversation about whether there is an opportunity for action in your community.
- Download the National Healthy Housing Standard for reference as a model code.
- Read about how other communities have used the NHHS to strengthen their local codes and are using codes to improve health.
 - Healthy Housing Codes:
<https://nchh.org/information-and-evidence/healthy-housing-policy/state-and-local/healthy-housing-codes/>

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- Proactive Rental Inspections:
<https://nchh.org/resources/policy/proactive-rental-inspections/>
- Incentivizing Healthy Housing:
<https://nchh.org/resources/policy/incentivizing-healthy-housing/>
- APHA: Healthy Homes:
<https://www.apha.org/healthy-homes>
- Ask for technical assistance or help getting connected to a peer mentor. Contact Jonathan Wilson (<mailto:jwilson@nchh.org>).

Appendix C: TACTIC Site Visit Notes

Meeting One: December 19, 2018 – City of Detroit Offices

Attendees:

Malik Johnson, Environmental Specialist, BSEED
James Foster, Manager, BSEED
Harolyn Baker, Director of Child Health Services, Maternal and Child Health,
funded by CLPP
Mark Baron, Environmental Specialist, BSEED
Arthur Rushin, Supervisor, Residential Inspections, BSEED
Anna Pinter, Lead Program Manager, Housing and Revitalization Department
Aimee Surma, Program Manager/Environmental Case Management
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

Enforcement Program

All code inspectors are certified in compliance with state requirements (Act 54).

LIRAs are done separately but are required for a rental certification.

The city's lead ordinance began in 2010; the ZIP-code-by-ZIP-code registration process started in 2017. They are currently on their third ZIP code. Lead ordinance details:

- The regular rental inspections do include deteriorated paint. This is not related to the lead paint violation. There is no communication between the rental inspectors and the lead inspectors on paint deterioration.
- One- and two-family homes use a third-party inspector for the rental inspections, including a third-party lead inspector. Once they have achieved clearance, the inspector forwards it to the city.
- Owners are required hire two separate inspectors (the rental inspector and the lead inspector); this is because they didn't want to put any property owners at a disadvantage if one company was responsible for both inspections.
- The hired inspectors go through a qualification process with the city, and the city oversees any complaints from customers.
- The city performs the inspections for larger multifamily homes.
- Ticket schedule:
 - First ticket: \$250 for not registering (registration is free).
 - Second ticket: \$500 for not having an inspection done.
 - Third ticket: \$250 for noncompliance with code (this applies to any city codes).

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- The fines double in a second round of tickets if the owner is found to be responsible for lack of compliance.
- The stipulation agreement with the city upon accepting a written ticket gives the owner 90 days to get into compliance. Tickets can be dismissed when they come into compliance.
- There is a forbearance agreement available to give more time to people who haven't been ticketed but who are close to the deadline.
- The city encourages those with children under six to apply for a grant with the state.
- The health department can send referrals for rental inspections, but BSEED is not doing anything special for houses with EBLLs.
- The health department will order investigations through a third party for kids with EBLLs greater than 20.
- Pushback:
 - The volume of tickets can get too high if people aren't coming into compliance.
 - There are a limited number of people available to perform the LIRAs. There may be a waitlist of months for owners with multiple homes to get them into compliance.
 - Smaller companies offering lower rates can become overwhelmed.
 - Rates for a LIRA range from \$400-\$700.

Meeting Two: April 17, 2019 – City of Detroit Offices

Attendees:

Julie Vande Vusse, Project Manager IV, Buildings, Safety Engineering
and Environmental Department

David Jacobs, Chief Scientist, National Center for Healthy Housing

Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

Notes

The city has run into some challenges with their ZIP-code-by-ZIP-code process. Some of the changes they are implementing to counter these challenges include:

- Improving their known rental owners list with the following sources:
 - Assessors' database.
 - Rental registry – identifying people who are registering without a certification.
 - Water department accounts.

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- Zillow.com – looking to see who is advertising rentals.
- Department of neighborhoods data.
- Postal service data.
- In the coming months, they are hiring a policy analyst to look at the program as it continues.
- Pushing the schedule back, so that all ZIP codes will be compliant by May 31, 2021, rather than January 1, 2020.

Ongoing challenges include continuing to identify all the owners and carrying out the enforcement for those who won't get into compliance. They had wanted to charge misdemeanor tickets after three rounds of noncompliance with tickets but are still working with lawyers to figure out how to make that process easy.

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**Final Report for the
City of Flint, Michigan**

by

**David E. Jacobs, PhD, CIH
Sarah Goodwin**

for the

**Michigan Department of Health and Human Services,
Child Lead Exposure Elimination Innovations Grant**

Contract Number E20183042-00

May 31, 2019

**National Center for
HEALTHY HOUSING**

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Summary

Flint requires a certificate of compliance for its rental properties, each of which must be registered and undergo a visual inspection on a regular three-year schedule. These provisions are important strengths that can be leveraged to help prevent lead exposure in children. Flint is also undertaking a strategic review of its code compliance process.

The City of Flint has adopted the 2015 International Property Maintenance Code (IPMC) for its rental housing stock code. The IPMC provides for all paint to be kept in an intact condition but does not require any actual testing of paint, dust, or soil to determine lead content. Such measurements are typically made by the health department only in the event that a child already has an elevated blood lead level. Other best practices for rental housing codes across the country provide for proactive paint, dust, or soil testing, instead of only requiring such testing after a child has been exposed.

This report describes the current Flint code process and provides recommendations on improvements to its housing code and associated inspection, enforcement procedures, staffing, public education and other related matters. The report has been reviewed by city personnel. This project was funded by the Michigan Department of Health and Human Services, Child Lead Exposure Elimination Innovations Grant, contract number E20183042-00. The opinions expressed here are those of the National Center for Healthy Housing and do not necessarily reflect those of the City of Flint.

Summary of Recommendations

Require testing of deteriorated lead paint and dust as part of the certificate of compliance to determine actual risk of lead hazards. The current practice of visually examining paint is insufficient, because the lead content of deteriorated paint and dust cannot be seen by the naked eye.

Change the existing housing code language to require remediation of deteriorated lead-based paint using lead-safe work practices and clearance dust testing in all rental units in which young children reside or are expected to reside. The National Healthy Housing Standard (available at <https://nchh.org/tools-and-data/housing-code-tools/national-healthy-housing-standard/>) may be utilized as a model code. The dust testing should comply with the recent lead dust guidance values established by the U.S. Department of Housing and Urban Development (HUD) for its lead hazard control grantees (Flint was awarded one of these grants in December 2018).

Increase the number of housing code inspectors. Flint currently has two housing code inspectors and four building inspectors (two of which focus exclusively on plumbing and electrical) on staff. Flint will also be hiring two lead inspectors to carry out activities under the city's new HUD lead hazard control grant. Because dust and paint testing will take additional time, the number of housing code inspectors should be increased.

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Train housing code inspectors to properly collect paint and dust samples as part of code inspections, instead of only doing so after a child has already been exposed. This training is an eligible expense under Flint’s new HUD Lead Hazard Control Grant.

Amend the language of the code violation notices to include deteriorated lead-based paint, elevated dust lead levels, and lead in water.

Involve the public in proposed changes to the code and seek comment from tenants, landlords, property owners, public health workers, and other members of the public.

Public education efforts should include the importance of deteriorated lead-based paint and the associated contaminated dust and soil it generates.

Flint should evaluate the results of these code changes by documenting changes in both housing quality and childhood blood lead levels. Other factors to consider in evaluation include census tract or neighborhood comparisons to ensure the system is monitoring effectively and equitably.

Work with community-based programs to expand capacity to educate landlords and residents, assistance with temporary relocation if needed during repairs and expand referrals to social services for other needs identified in the home.

Introduction

How Housing Codes Can Help Prevent Childhood Lead Poisoning

Housing quality is an important social determinant of health in general and childhood lead poisoning prevention specifically. Yet the housing and health sectors are typically governed by separate fragmented and isolated systems. Although today’s housing codes originated over a century ago in the sanitation movement to combat health problems such as cholera, tuberculosis and typhoid, current codes (with important exceptions described below) typically refer housing-related lead paint problems to local health departments instead of using the code process to identify and correct these hazards. Health departments often focus on identifying lead hazards only after an elevated blood lead level has occurred.

This secondary prevention reactive approach hampers the application of the existing housing inspectorate and code systems to detect and correct lead hazards in housing *before* children have been exposed. Furthermore, housing codes in many jurisdictions are driven largely by complaint-driven reactive enforcement systems. In many cases, local housing codes are either silent on correction of lead hazards or defer to specialized lead risk assessments by local health departments. An effective code enforcement system can be a powerful tool for improving and

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protecting residents from lead exposure. Appendix A describes key elements of an effective system.

Key Characteristics of Flint

Flint has a population of about 97,810 (2017 estimates), about 7,431 of whom are children years old. Flint has about 39,780 occupied housing units, 42.6% of which are rentals. Based on Flint's population data, an estimated 3,165 of these units would have children under the age of six living in them. An estimated 91.9% of the housing units in Flint were built before 1979, and lead paint was banned from use in residential units in 1978 by the federal government. Lead paint is likely to be a hazard in a high number of Flint homes.

Flint also recently suffered a lead crisis when the switching of the city's water source in 2014 resulted in lead levels in the tap water above allowable EPA levels, among other health hazards, and an increase in children testing with elevated blood lead levels. Consequently, resident trust on the issue of lead prevention and environmental health is low, with most residents focused on lead hazards in water, as opposed to dust or paint. As a result, projects in the city should make all possible efforts to obtain community engagement and understanding.

National Best Practices

Several municipalities across the country have taken action to address lead hazards in housing through codes, which are reviewed briefly here.

For example, in December 2005, Rochester (NY) passed an ordinance adding inspections of most pre-1978 rental housing for lead paint hazards to their ongoing rental housing inspections needed to obtain a certificate of occupancy (C of O). Rental housing inspections occur every three or six years, depending on building size (see <https://www.cityofrochester.gov/article.aspx?id=8589935004>). To receive a C of O, property owners must correct identified lead hazard violations (if any). If hazards are identified, the property owner must pass a private clearance test (a visual inspection plus at least eight dust wipe samples). The protocol, available at <https://www.cityofrochester.gov/lead/> and <https://ecode360.com/8677786>, states in part: "Dust samples shall be taken from each of no more than four rooms. The selection of rooms to be tested, where applicable, shall include no less than one bedroom and the living room. At least one wipe sample shall be taken from a window trough or a windowsill with a paint history, if present, and one from a floor in each room. Where there are less than four rooms, then all rooms shall be sampled." Results are compared to current EPA dust lead hazard standards). For the initial inspection, code officials examine paint condition; and if it is intact and the home is in a high-risk area, then they will collect eight dust wipe samples to ensure that the home is safe for children. If paint is not intact, lead safe work practices must be used to repair the paint, followed by private dust testing to ensure cleanup is adequate (unless the home has been found to be free of lead-based

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paint). The city maintains a publicly accessible database showing the date all rental properties passed their most recent C of O inspection, including lead.

The code does not appear to have significantly impacted the housing market in Rochester, a key concern of code officials and property owners prior to passing the law. Landlords have since accepted it as a routine cost of business (<https://www.ncbi.nlm.nih.gov/pubmed/22001644>). As of August 28, 2018, Rochester has inspected 166,906 individual dwelling units (see <https://www.cityofrochester.gov/lead/>). Data show that blood lead levels in Rochester improved more than twice as fast compared to the rest of the state. Eighty-six percent of code inspections did not have an exterior lead violation, and 88% of those with a violation had complied with remediation as of August 2018. For interiors, of the 166,906 units inspected, 95% passed the initial visual inspection, and among those with an interior violation, 84% had complied as of June 30, 2018. Of the 4,141 units cited with a lead dust hazard, 98% have complied as of June 30, 2018. Ninety percent of the units subjected to dust wipe testing (over 30,000 units as of 2016) passed. During the first 12 years, the city has issued 782 vacate orders for situations with severe hazards that put children at risk and 3,418 tickets for noncompliance. The frequency of violations has declined in recent years, as landlords know what to expect. Furthermore, the ordinance has created a demand for more private inspectors to perform clearance testing; the increased competition has resulted in a price reduction. Before the law was passed, a clearance test cost about \$350 per unit; the cost is now about \$125 per unit.

In Maryland, owners of older residential rental properties must register their properties annually with the Department of the Environment. Private inspectors issue a lead paint risk reduction certificate for each dwelling that passes the inspection, which includes both a visual examination of paint condition and dust lead testing.

Rhode Island passed the Lead Hazard Mitigation Act in 2002 and implemented code regulations in 2004. Before any change in ownership or tenancy of a property and at least every two years, the property owner must have the property inspected and demonstrate via a certificate of conformance (COC) or a lead-safe or lead-free certificate that the dwelling is safe for children. Establishing lead safety includes dust testing.

The National Healthy Housing Standard, a model code, provides that lead levels at or above federal regulatory limits are defined as hazards and must be remediated. Those levels include deteriorated lead paint (0.5% by weight or 1.0 milligram per square centimeter); dust (40 micrograms of lead dust per square foot [$\mu\text{g}/\text{ft}^2$] on floors and 100 $\mu\text{g}/\text{ft}^2$ on windowsills). The Standard also states that painted surfaces shall be maintained intact and with the exception of paint tested and found not to contain lead, deteriorated paint at a property built before 1978 shall be repaired using lead-safe work practices and follow-up dust testing.

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Many federally assisted housing programs, including public housing, Section 8 project-based assistance and federally assisted housing rehabilitation programs also require paint and dust testing, regardless of whether a child with an elevated blood lead level resides there.

Additional case studies of best practices across the nation for childhood lead poisoning prevention are available here: <https://nchh.org/who-we-are/nchh-publications/case-studies/lpp-stories-case-studies/>

Methods

We conducted several conference calls with key local personnel to introduce the project, describe the process, and identify current codes in October and November 2018. After reviewing the local code, we used the NCHH Code Comparison Tool (<https://nchh.org/tools-and-data/housing-code-tools/cct/>) to compare Flint’s housing code with best practices (see Appendix A).

In December 2018, we conducted an on-site visit, which was attended by Jameca Patrick-Singleton, Chief Recovery Officer; Suzanne Wilcox, Director of Planning and Development; Billie Mitchell, Public Health Coordinator; Angela Wheeler, City Attorney; Dr. Pamela Pugh, Chief Public Health Officer; Aonie Gilcreast, Community Liaison for Economic Development; and Lydia Starrs, Health Systems Navigator for the Community Foundation of Greater Flint. Representing the National Center for Healthy Housing were Dr. David Jacobs and Sarah Goodwin. The relevant documents were obtained and subsequent data requests identified. NCHH staff completed a second in-person meeting with city staff in April 2019, which included a review of report language and a discussion of Flint’s proposed new rental ordinance.

Results and Recommendations

Code Language

Flint has a rental property registration process and a planned proactive scheduled inspection process, both of which could be enormous strengths. This is superior to a solely complaint-driven reactive code inspection system, although many jurisdictions have moved to proactive systems in recent years (Of course, the complaint-driven process needs to continue in order to respond to violations that may occur outside of the periodic scheduled inspection process.) The reactive system often relies on injuries, illnesses, or a resident’s complaint and often occurs only after conditions have become quite serious. The reactive system also tends to produce more litigation and creates uncertainty in the rental market, because landlords may have to absorb unanticipated property repair and litigation expenses. Currently, the property

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registration program in Flint is not being enforced and is only applicable when both the landlord and tenant opt in to the program, due to recent litigation. The city is working on securing and implementing a new version of the rental ordinance to reinstate the program.

One area for improvement is the language of the code itself, which restricts violations to visually deteriorated paint only, regardless of whether the paint actually contains lead. Although deteriorated nonlead paint should be corrected to help prevent rot and other matters, it is not the urgent health hazard that deteriorated lead paint is. The current code language is drawn from the International Property Maintenance Code, which has been criticized for its failure to identify actual lead hazards. It also diverts attention from where it is most needed, because most paint, even in older housing stock, does not actually contain lead.

One option would be to require actual testing of deteriorated paint to determine if it has levels of lead above the federal standards (Michigan has adopted those standards). This can be achieved by simply adopting the National Healthy Housing Standard, which would also have the added benefit of addressing other housing conditions that could adversely affect health. There are two methods of measuring lead in paint:

- Careful collection of all layers of paint from deteriorated surfaces, followed by laboratory analysis accredited under the EPA National Lead Laboratory Accreditation program; or
- On-site analysis using portable lead paint analyzers using x-ray fluorescence (XRF).

Either method is acceptable. Paint chip collection has lower up-front costs but can be tedious and removes paint from a surface that must be sealed following collection. XRFs have a higher up-front cost but yield immediate results and do not involve destructive paint chip sampling. Some jurisdictions have a code inspector who is certified as a lead-based paint inspector and who uses an XRF device.

If deteriorated paint is found to contain lead, then remediation can occur using lead-safe work practices (essentially wet scraping to reduce dust emissions, followed by application of a durable two-coat compatible paint film, followed by specialized cleaning and dust testing). Dust testing is a relatively simple procedure carried out across a measured surface area on floors and windowsills, but the testing must be performed by trained and certified personnel and also requires laboratory analysis.

Another option is to incorporate code language that follows the Rochester model, which requires all paint to be intact, but also provides for dust lead testing even when paint is intact. Dust lead is known to be the main route of exposure for most children via normal hand-to-mouth contact, contamination of hands, toys and other objects, ingestion of lead dust and subsequent absorption into the child's body. The Rochester model helps to address the situation where landlords have repainted, but may not have followed lead-safe work practices

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or cleanup procedures. Disturbance of only a small amount of lead paint can cause major dust lead contamination. For example, consider the case of paint removal using dry scraping or sanding that turns the lead paint into lead dust. Removing only one square foot of lead paint containing the minimum amount of lead regulated by the federal government (1 mg/cm²) and then distributing that lead dust over an average 10-foot-by-10-foot room results in a dust lead level of 9,300 µg/ft², which is well over the EPA limit of 40 µg/ft² for floors. By conducting dust lead testing, inadequate dust containment and cleanup practices can be detected before a child has been needlessly exposed. Lead-safe work practices (in brief) involve occupant and worker protection, containment, use of wet methods during paint removal to minimize dust emission, use of durable new paint (or other coatings, enclosures, or building component replacements), followed by specialized cleanup methods and clearance dust testing to ensure cleaning has been adequate. Proactive dust testing and lead safe work practices are also required in Maryland and Washington, DC, and most federally assisted housing programs.

A final option would be to require lead risk assessments followed by remediation in all older family rental properties. Risk assessments measure lead content in deteriorated paint, dust, and bare soil. Detroit is currently pursuing this approach on a ZIP-code-by-ZIP-code basis, and it is the standard of care in most federally assisted housing programs, as well as in HUD's Lead Hazard Control Grant program.

Any of these methods would require changes to the city code and could be implemented as the regular schedule of rental inspections continues. This process would allow for the City of Flint to notify the community and property owners of the incoming requirements, giving time for owners to address hazards before being met with an inspection and potential citation.

Staffing and Enforcement

Ultimately, improving the language in the code will be ineffective if it is not actually obeyed and enforced. Flint currently has two housing code inspectors and four building inspectors that are, reportedly, fully occupied with responding to complaints. If Flint's codes are updated, additional staff should be hired to help ensure compliance.

Data from the U.S. census for Flint indicates that there are 7,431 children under six years old, the age at which blood lead levels typically reach their peak level. If there are 39,780 occupied housing units and 42.6% are rental units, then there could be about 3,165 rental units with young children in Flint. Although this assumes there is one young child per unit, it does not include other units that children may frequent, such as residential day care, schools, et cetera, suggesting this is a reasonable assumption.

The estimated time it would take a trained code inspector to perform a visual examination of paint (and other housing conditions), collect paint chips from deteriorated surfaces, and collect dust wipe samples from floors and windowsills in an average of four rooms per unit is

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approximately one hour (not including travel, administrative, and report preparation time). The current code inspection process, which is limited to visually examining housing conditions, takes about 15 minutes per unit.

Staffing needs can be estimated as follows, assuming a three-year inspection cycle:

$$3,655 \text{ rental units with young children}/3\text{-year inspection cycle} = 1,218 \text{ rental units/year}$$

$$1,218 \text{ rental units/year} \times 1 \text{ hour/rental unit} = 1,218 \text{ person-hours/year}$$

If we assume that there are a total of 2,080 total hours per inspector per year available, it is reasonable to assume that about 40% of that time will need to be devoted to travel to housing units to be inspected, report preparation, training, and follow-up interaction with owners and in some cases interaction and testimony before administrative judges or others in cases of noncompliance.

$$40\% \times 1,218 \text{ person-hours/year} = 487 \text{ hours/year administrative.}$$

Thus, total personnel need could be as follows:

$$1,218 \text{ person-hours/year for inspections} + 487 \text{ person-hours/year for travel and other administrative duties} = \text{about } 1,700 \text{ person-hours/year}$$

In short, this would appear to mean that one or two additional staff persons should be hired.

Alternatively, if regular code inspections take 15 minutes/unit and collection of dust wipes and paint chip samples takes another hour per unit, then the number of code inspectors should increase by a factor of four. This suggests the city should hire at least four additional code inspectors to absorb the burden of additional paint chip and dust wipe sample collection. This option assumes that all rental housing units would undergo lead sampling.

Training

Housing code inspectors in Flint currently undergo on-the-job training to fulfill their current duties; however, if they are also charged with collecting dust wipe and deteriorated paint chip samples, they will need to be certified to do so under Michigan law. This is typically achieved with a two-day training course. Code inspectors in Rochester, NY, and elsewhere are cross-trained to enable them to identify both housing code violations and lead-based paint hazards. The existing code inspectors in Flint are not currently trained in lead hazard identification, although other cities in Michigan, such as Battle Creek, do employ code inspectors with cross-training in both recognition of code violations and lead-based paint hazards. In addition to cross-training of code inspectors, other training needs may include the following:

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- Lead hazard awareness for supervisors.
- Lead hazard awareness for city attorneys charged with enforcing lead-related code violations.
- Lead hazard awareness for administrative law judges.
- Training for health department case workers who coordinate care for children with elevated blood lead levels on housing code violation procedures: specifically, how they can request a housing code inspector in homes of children with elevated blood lead levels.
- Healthy homes best practices and standards for code inspectors, so that they will be better equipped when encountering other hazards.
- “Soft skills,” such as customer service, communications, and ethics training for code officers who may interact often with tenants and landlords from various cultural backgrounds.

As the program develops and if Flint strengthens its codes, ongoing and comprehensive training will be required to ensure staff capacity to enforce the new provisions.

Implementation Considerations – Involving the Public

Integrating lead hazard identification into the housing codes in Flint should also consider how best to achieve community consensus. This will require careful articulation of why this is needed, as well as related costs and benefits. Community leaders should be engaged to help articulate why housing codes present an important opportunity to address childhood lead poisoning in Flint. Those opportunities include:

- Ending the historic divide between housing and public health.
- Taking action before children are harmed, instead of only reacting after the harm has been done.
- Potential for new job creation.
- The benefits of a “health in all policies” approach.
- How the costs of proactive code inspections are less than the costs of treating and educating children with elevated blood lead levels.
- How proactive codes can benefit landlords by reducing the prospect of unanticipated housing repairs and avoidable litigation.
- Building public trust in democratic institutions to address preventable diseases, such as childhood lead poisoning.

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- Active engagement of the city’s philanthropic institutions, notably the Community Foundation of Flint.
- Ending the current inefficient practice of shifting the costs of lead poisoning to our schools and medical care institutions.
- Explanation of how existing resources, such as Flint’s new HUD lead hazard control grant, can be used to help landlords comply.

To maximize the public’s involvement, the city should consider appointing community leaders and members to an advisory council to provide organized input. During the decision-making process, the city should make sure to consider equity impacts of code changes. Some particular recommendations to keep in mind include:

- Include community members in the development of the structure of the policy process to ensure that they are represented throughout the process.
- Implement strategies that are holistic and break down silos.
- Develop awareness campaigns so that the necessity of the policy changes are conveyed to the community.
- Prioritize resources at areas that need them most.
- Protect tenants as the code changes are implemented.

More details for these recommendations and others about addressing equity in lead poisoning prevention policy change can be found in *Achieving Equity in Lead Poisoning Prevention Policy Making: Proceedings from a Consensus Conference*, a report from Human Impact Partners: [https://humanimpact.org/wp-content/uploads/2018/11/Achieving-Equity-in-Lead-Poisoning-Prevention-Policy-Making -Proceedings-from-a-Consensus-Conference.pdf](https://humanimpact.org/wp-content/uploads/2018/11/Achieving-Equity-in-Lead-Poisoning-Prevention-Policy-Making-Proceedings-from-a-Consensus-Conference.pdf)

Conclusions

A recent authoritative report, *10 Policies to Prevent and Respond to Childhood Lead Exposure* (see <https://nchh.org/information-and-evidence/healthy-housing-policy/10-policies/>), showed how every dollar invested in residential lead hazard control (which can include better codes) will yield at least \$1.36 in monetary benefits. Community involvement in such changes is essential. Although housing codes are often considered to be mundane, they can also be an important vehicle to rebuilding trust in government and in the city’s ability to solve its challenges. In short, implementation must include an important public education and involvement component if such changes are to be lasting and productive.

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Modernization of the Flint housing code holds great promise in helping the city prevent childhood lead poisoning. The city already has a proactive rental housing inspection process that can be leveraged to include detection of lead hazards before children have been exposed. Changes in housing code language, staffing levels, enforcement, and creative use of subsidies can all be used to help eliminate childhood lead poisoning as a major public health problem.

Acknowledgments

Dr. Pamela Pugh, Suzanne Wilcox, Angela Wheeler, and Jameca Patrick-Singleton contributed to preliminary review of this document at our April 17, 2019, meeting.

Appendices

Appendix A: Elements of Effective Housing Code Enforcement Programs

Appendix B: Code Comparison Tool Results

Appendix C: TACTIC Site Visit Meeting Minutes

Appendix A: Elements of Effective Housing Code Enforcement Programs

Adapted from:

ChangeLab Solutions (eds.). (2015, May). Up to code: Code enforcement strategies for healthy housing. Oakland, CA: ChangeLab Solutions. Retrieved May 23, 2019, from https://changelabsolutions.org/sites/default/files/Up-to-Code_Enforcement_Guide_FINAL-20150527.pdf

Adopt a Strong Housing Code

Housing codes often contain ambiguous phrases in their standards, such as “clean,” “sanitary,” “safe,” and “healthy,” and the lack of detail makes efficient and effective code enforcement difficult. Without specific standards to serve as a guide, property owners, residents, and code enforcement officers can interpret housing codes differently, leaving compliance decisions subject to challenges and residents vulnerable. In addition, many housing codes don’t properly address health-related threats in the home, such as pests, moisture, ventilation, and chemicals (radon, lead, and pesticides, for example).

Resource/tip: The National Healthy Housing Standard provides model codes that incorporate public health rationale into building code parlance.

Fund the Code Enforcement Program Sufficiently

Effective code enforcement programs require sufficient financial resources. In many localities, state law sets forth how the locality may fund its code enforcement operations (typically through general fund, Community Development Block Grant (CDBG) funding, permits/regulatory fees, or fines). State laws may also set forth the types of fees and amount of fines the jurisdiction may assess on those who violate the housing code.

Resource/tip: Some communities fund their code enforcement programs with moneys from the CDBG program, administered by the U.S. Department of Housing and Urban Development. These grants can fund code enforcement officers’ salaries and related expenses, legal proceedings to enforce housing codes, and rehabilitation or improvement of some types of housing.

Training Officers Comprehensively

Code enforcement programs require well-trained officers to enforce the local housing code. Officers need to participate in a broad-based training program, periodic training updates, and routine inspections with other officers to ensure professionalism and consistency in the field. Training should cover all applicable federal, state, and local laws but also best practices, soft

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skills (e.g., how to work effectively with residents from diverse backgrounds), and availability of community resources to assist residents.

Partner with Community Organizations

Community organizations can raise awareness of the purpose, policies, and procedures of code enforcement, and provide supplementary resources and services.

Resource/tip: Code enforcement programs have a variety of potential community partners, including housing advocates, public health professionals, immigrant and refugee service providers, social workers, tenant organizations, and home repair programs.

Promote Cross-Agency Coordination

Ensuring housing is safe and habitable requires cross-agency coordination. Because responsibility for health and safety is usually divided among various city agencies or departments, intragovernmental communication and collaboration can help make code enforcement more efficient and effective, and less like a series of disjointed, isolated efforts.

Resource/tip: Staff of the Erie County (NY) Department of Health’s Healthy Neighborhoods Program and Lead Poisoning Prevention Program are trained and deputized code enforcement officers, which enables health department staff to formally cite for violations of the Erie County Sanitary Code while conducting home assessments. Deputizing health and/or housing agencies to enforce each other’s code provisions assures a unified perspective toward housing-based lead poisoning primary prevention.

Develop a Cooperative Compliance Model

Under a cooperative compliance model, rather than simply inspecting housing and citing for violations, the code enforcement officer works cooperatively with property owners to help them understand the elements of healthy housing, the importance of code compliance, and how to bring the property into compliance. The code enforcement officer is armed with cooperative tools – information, education, and resources – along with traditional enforcement sanctions. Cooperative compliance allows property owners and officers to work together to improve housing conditions and promote health.

Resource/tip: Many communities struggle with enforcement. A cooperative compliance approach can reduce the number of properties that require follow-up enforcement action.

Enforce the Local Housing Code

Most owners do their best to comply with housing codes, but code enforcement programs must be prepared to deal with those who don’t. To protect the health and safety of residents effectively, programs need to be flexible and efficient, and have teeth. There are three major types of enforcement: administrative, civil, and criminal.

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Resource/tip: ChangeLab Solutions’ [Healthy Housing Laws that Work: Creating Effective Implementation and Enforcement Clauses](#) explains the different ways local governments can enforce housing and property maintenance codes.

Adopt a Proactive Rental Inspection (PRI) Program

Traditional code enforcement programs are complaint-based; that is, in response to a resident’s complaint about a substandard housing condition, a code enforcement officer conducts a housing inspection. Under a PRI program, rather than wait for a complaint to trigger a housing inspection, the locality inspects all covered rental housing on a periodic basis. Though the specifics vary by locality, PRI programs typically share the same basic structure: registration, periodic inspections, and enforcement. A PRI system doesn’t replace a complaint-based system and can help both property owners (by incentivizing routine maintenance that prevents costly repairs) and tenants (e.g., by ensuring equitable access to services for vulnerable populations that may be unaware of or fearful of exercising their rights under a traditional complaint-based system).

Resource/tip: ChangeLab Solutions’ [A Guide to Proactive Rental Inspection Programs](#) and [Model Proactive Rental Inspection Ordinance](#) explains how proactive rental inspections can help protect vulnerable residents, preserve safe and healthy rental housing, and work to increase neighborhood property values.

Establish Supplementary Programs

Jurisdictions can establish auxiliary programs that increase code enforcement effectiveness by educating community members, incentivizing and/or financing repairs, and helping residents move when necessary.

Resource/tip: [Up to Code: Code Enforcement Strategies for Healthy Housing](#) contains several examples of supplementary programs that other communities have established to support their code enforcement activities.

Evaluate the Code Enforcement Program

Code enforcement programs should collect and analyze data regularly to better understand their strengths and weaknesses. Evaluation can help monitor functioning, identify areas for improvement, help to justify resources, and provide accountability. Communities may also consider tracking key performance metrics by census tract or neighborhood to ensure equitable access and that the system is working well for all residents.

Resource/tip: Data collection and analysis can provide valuable information to both government agencies and the community. Whenever possible, communities should work to establish data sharing with other agencies or programs and, as appropriate or feasible, make data publicly available.

Appendix B: Code Comparison Tool Results

Background

Location	Property Maintenance Code	Other Code Sections	Other Documents
Battle Creek Uses IPMC 2015	Part 14, Title 4, Chapter 1450: Property Maintenance Code International Property Maintenance Code 2015	842 Rental Housing 1456 Vacant or Abandoned Structures	Rental Permit Application Rental Property Checklist Vacant or Abandoned Registration Form
Detroit Based on the 2000 IPMC	Chapter 9, Article 1: Property Maintenance Code	Chapter 9, Article 1, Division 3: Rental Property Chapter 26 - Housing Chapter 24, Article X: Lead Poisoning Prevention Testing and Prevention	
Flint Uses IPMC 2015	Chapter 5, Article 3: Property Maintenance Code International Property Maintenance Code 2015	Chapter 5, Article 3, Sec. 5.3-3 on: Certificate of Compliance for rental properties	
Grand Rapids Uses IPMC 2012 with amendments	Title VIII, Chapter 140: Property Maintenance Code International Property Maintenance Code 2012	Title VIII, Chapter 140, Sec. 8504: Amendments to the Code including certificate of compliance for rentals	
Michigan State Lead Law	Public Health Code, Act 368 of 1978, Part 54A: The Lead Abatement Act		Lead Hazard Control Rules

Code Comparison Tool

SECTION E: Chemical Hazards – Building Products

Questions: 10
Total Responses: 25
Answered: 25
Percentage Complete: 100%

Status: Average

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Questions E1-E6: Lead

Strong. Congratulations! Your responses indicate that your community is using most of the evidence-based provisions in the National Healthy Housing Standard (NHHS) in this area – NHHS Provisions (7.1, 7.2.2, 7.2.3, 7.2.4). To take the next step in using housing codes to protect resident health, consider implementing some or all of the provisions listed below.

Questions E7-E8: Asbestos

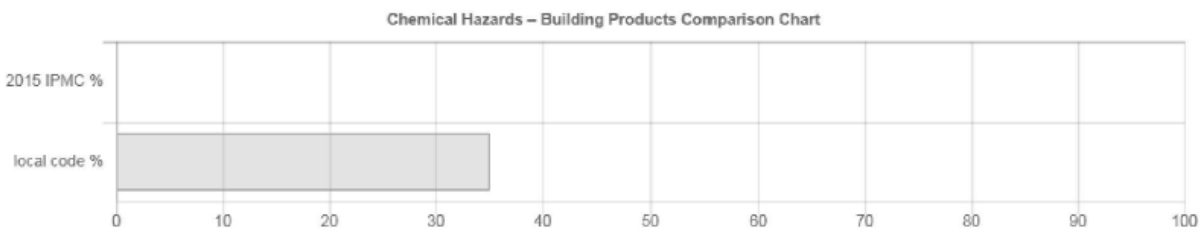
Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.3, 7.3.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

Questions E9-E10: Toxic Building Materials

Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.4.1, 7.4.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

SECTION	NUMBER OF NHHS MANDATORY PROVISIONS	NUMBER OF 2015 IPMC PROVISIONS THAT MEET OR EXCEED NHHS PROVISIONS	COMMUNITY SCORE (POINTS ALLOCATED FOR EACH PROVISION THAT WAS PARTIALLY OR FULLY MET)*	COMMUNITY % (COMMUNITY SCORE/NUMBER OF NHHS MANDATORY PROVISIONS)
Chemical Hazards - Building Products	10 (100%)	0%	3.5	35%

*Meets or exceeds standard = 1 point; partially meets standard = 0.5 point; doesn't meet standard=0 points



NHHS Provisions that You Reported Already Exist in Your Local Code

NHHS Provision 7.2.5. Lead-based paint shall not be applied to the interior or exterior of any dwelling or dwelling unit.

NHHS Provision 7.2.1. Lead levels at or above federal regulatory limits pursuant to 40 C.F.R. § 745.65 are deemed hazardous:

1. Lead-based paint on an existing painted surface – 0.5% by weight or 1.0 milligrams per square centimeter;
2. Dust on floors – 40 micrograms of lead per square foot of settled dust ($\mu\text{g}/\text{ft}^2$);

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3. Dust on interior windowsills – 250 µg/ft²;
4. Dust on window troughs (wells) – 400 µg/ft²;
5. Bare soil in children's play areas – 400 parts per million (ppm) of lead; and
6. Bare soil in areas of the yard that are not children's play areas – 1,200 ppm.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of *40 C.F.R. § 745 Subpart E*, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.3.1. Friable asbestos-containing material shall be abated by licensed asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.3. Abatement, removal, and disposal of all asbestos-containing material shall comply with all appropriate federal, state, and local requirements.

NHHS Provisions that Your Local Code Does Not Include (in Part or in Full)

NHHS Provision 7.1. All chemical and radiological agents in dwellings, premises, and accessory structures, including but not limited to deteriorated lead-based paint, friable asbestos-containing material, formaldehyde, volatile organic compounds, radon, pesticides, and methamphetamine, shall be contained, stored, removed, or mitigated in a safe and healthy manner consistent with federal, state, and local laws and regulations. When an applicable regulatory limit is more protective than the level included in this section, the more restrictive limit shall apply.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of *40 C.F.R. § 745 Subpart E*, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.2.3. All renovation, repair, and painting work that disturbs a painted surface in a pre-1978 dwelling shall be performed in accordance with the renovation requirements of *40 C.F.R. § 745, Subpart E*, unless the paint has been tested and found not to contain lead-

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based paint in accordance with *40 C.F.R. § 745.82(a)*. Dust clearance testing shall be performed at the conclusion of the renovation work.

NHHS Provision 7.2.4. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, a painted surface shall not be disturbed using methods that involve (1) open-flame burning or torching or operating a heat gun at temperatures above a maximum of 1, 100° F (593° C); or (2) power sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting unless such machines have shrouds or containment systems and a high-efficiency particulate air (HEPA) vacuum attachment that collects dust and debris at the point of generation. The shroud or containment system shall release no visible dust or air outside the shroud or containment system.

NHHS Provision 7.3. Every owner shall maintain in good repair all asbestos-containing material on the premises. All asbestos-containing material shall be maintained non-friable and free from any defects such as holes, cracks, tears, and/or looseness that may allow the release of fibers into the environment.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.4.1. Building materials consisting of hardwood plywood, medium-density fiberboard, and particleboard as defined by *15 U.S.C. 2697(b)(2)* shall not be used in maintenance and renovations within dwellings, unless the materials have been certified to meet the formaldehyde emission standards of *15 U.S.C. 2697(b)(2)*:

1. Hardwood plywood with a veneer core, 0.05 parts per million (ppm);
2. Hardwood plywood with a composite core, 0.05 ppm;
3. Medium-density fiberboard, 0.11 ppm;
4. Thin medium-density fiberboard, 0.13 ppm; and
5. Particleboard, 0.09 ppm.

NHHS Provision 7.4.2. Building materials used in maintenance and renovations, including but not limited to paints, coatings, primers, glues, resins, adhesives, and floor coverings, shall be certified as having no volatile organic chemicals (VOCs) or low-VOC emissions, and having no halogenated flame retardants (HFRs).

NHHS Stretch Provisions (Not Assessed in Online Tool)

NHHS Stretch Provision 7.2. Lead present at or above the following limits is deemed hazardous:

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1. Lead-based paint on a friction, impact, or chewable surface, damaged or otherwise deteriorated, or non-intact – 0.06% by weight;
2. Dust on floors – 10 micrograms of lead per square foot of settled dust ($\mu\text{g}/\text{ft}^2$);
3. Dust on interior windowsills – 100 $\mu\text{g}/\text{ft}^2$; and
4. 40 $\mu\text{g}/\text{ft}^2$ on porches.

Why Chemical Hazards – Building Products Matter

Lead is a heavy metal that accumulates in the body when ingested and has toxic effects on the nervous system, cognitive development, and blood-forming and other systems. Sources of lead include lead-based paint and the dust it generates, soil, drinking water, and consumer and other products. Lead-contaminated soil may be found particularly around older buildings contaminated by flaking external paintwork, adjacent to industrial premises using (or previously having used) lead, and near busy roads from the exhaust fumes from leaded gasoline. Lead is readily absorbed from the intestinal tract, especially in children, and its absorption is enhanced by dietary deficiency of iron and calcium.

Exposure to asbestos increases the risk of developing lung disease. Asbestos products were historically used extensively in building materials. Vermiculite insulation in homes may be contaminated with asbestos. Vermiculite insulation should be assumed to be contaminated with asbestos and should not be disturbed. Trained professionals must be hired to remove vermiculite insulation. Formaldehyde is a prominent VOC found in household and construction products. It is a colorless, strong-smelling gas that can cause watery eyes, nausea, coughing, chest tightness, wheezing, skin rashes, and allergic reactions, and a burning sensation in the eyes, nose, and throat.

Formaldehyde is classified by the World Health Organization as a known human carcinogen . The most significant source of formaldehyde in the homes has been pressed-wood products made using adhesives that contain urea formaldehyde (UF) resins.

Suggested Next Steps

You have your results. Now what? Here are some suggested next steps:

- Review your results and identify places where your code is already strong and where there may be an opportunity to improve your local codes.
- Use the graphic provided (or export your data and create one yourself) to create a memo or presentation summarizing these results to start a conversation about whether there is an opportunity for action in your community.
- Download the National Healthy Housing Standard for reference as a model code.

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- Read about how other communities have used the NHHS to strengthen their local codes and are using codes to improve health.
 - Healthy Housing Codes:
<https://nchh.org/information-and-evidence/healthy-housing-policy/state-and-local/healthy-housing-codes/>
 - Proactive Rental Inspections:
<https://nchh.org/resources/policy/proactive-rental-inspections/>
 - Incentivizing Healthy Housing:
<https://nchh.org/resources/policy/incentivizing-healthy-housing/>
 - APHA: Healthy Homes:
<https://www.apha.org/healthy-homes>
- Ask for technical assistance or help getting connected to a peer mentor. Contact Jonathan Wilson (<mailto:jwilson@nchh.org>).

Appendix C: TACTIC Site Visit Meeting Minutes

Meeting One: December 19, 2018 – City of Flint Offices

Attendees:

Jameca Patrick-Singleton, Chief Recovery Officer
Suzanne Wilcox, Director of Planning and Development
Billie Mitchell, Public Health Coordinator
Angela Wheeler, City Attorney
Pamela Pugh, Chief Public Health Officer
Aonie Gilcreast, Community Liaison for Economic Development
Lydia Stars, Community Foundation
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

Code Enforcement Opportunities

The City of Flint uses the IPMC. They are in the process of reevaluating their code enforcement and looking at the ordinances. That process is covering the next three months.

When the health department previously funded the city, they performed visual paint inspections during the rental inspections. More work was voluntary.

The incoming HUD grant will include time for staff to be added or trained as risk assessors. Presently, the code enforcement officers (two on staff) have less intense training than the building inspectors (four on staff).

Within the city's Lead Safe Home Program, they have gotten a better response from landlords because of the new expanded funding through Medicaid/CHIP. This is giving the program more leverage than they've ever had before. The city sees the new combination of HUD and CHIP money as a "carrot opportunity."

They've done some education on lead beyond water (including through NCHH grants). This is an opportunity to engage legal services and do more outreach – there is now enough coordination and stakeholder involvement to work on an outreach campaign.

The city has been learning about "health in all policies."

They noted much community interest in rental issues.

Challenges

The biggest complaint from landlords is always about the costs; however, they've found that good landlords like using the codes to weed out the bad landlords and have been supportive of a process that is consistent.

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The City of Flint is working through some due process issues with code enforcement (following a due process lawsuit). This lawsuit was about precompliance inspections. The city needs an administrative search warrant for people who won't let them in. This ability is in the IPMC, and the city has been told they need to have it in writing in the code, not just by adoption.

The city could always use additional resources for dealing with landlords through the legal system and to drive the issue home to the judges.

There is always a contractor capacity issue, because lots of contractors work in Detroit.

In Flint, emphasizing lead in paint versus water is always a balancing act. Other landmines to avoid in the city include:

- Making sure to cover all wards.
- Educating the public is key due to high distrust.
- Whenever there is an opportunity for resident input, it should be taken.

Meeting Two: April 17, 2019 – City of Flint Offices

Attendees:

Jameca Patrick-Singleton, Chief Recovery Officer
Suzanne Wilcox, Director of Planning and Development
Angela Wheeler, City Attorney
Pamela Pugh, Chief Public Health Officer
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

Notes on Report Draft

Having received the report draft in advance, the group discussed changes the city recommended to the report language. Items discussed included:

- The city plans to hire two additional inspectors to work on their new HUD lead hazard control grant, with the long-term goal of employing them in work outside of that program as well. The report will be updated to reflect the anticipated increase in staff.
- The city is also planning to use some of the HUD grant funding for training of code inspectors, which is an eligible expense.
- The city recommended that the report language be modified to include lead hazards in drinking water.

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The city also provided more information about the status of their rental ordinance, which was not being actively enforced as a result of legal proceedings. They shared the draft of a new rental ordinance, which will address the legal issues and allow them to be enforcing rental registration again. City of Flint staff anticipated that the ordinance would be adopted in the coming weeks or months.

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for Code Transformation
and Innovation Collaborative
(the TACTIC Project)**

**Final Report for the
City of Grand Rapids, Michigan**

by

**David E. Jacobs, PhD, CIH
Sarah Goodwin**

for the

**Michigan Department of Health and Human Services,
Child Lead Exposure Elimination Innovations Grant**

Contract Number E20183042-00

May 31, 2019

**National Center for
HEALTHY HOUSING**

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Summary

Grand Rapids requires a certificate of compliance for its rental properties, each of which must be registered and undergo a visual inspection on a regular schedule. The schedules are on a two-, four-, or six-year cycle, with bad actors given two years and those with fewer violations given four to six years. Single-family properties are exempt from the two-year requirement. The city began including single-family properties for the first time in 2012 and is currently undergoing the second round of certifications for those properties. These provisions are important strengths that can be leveraged to help prevent lead exposure in children.

The city has adopted the 2012 International Property Maintenance Code (IPMC) with local addenda for its rental housing stock code. The Grand Rapids code provides for all paint to be kept in an intact condition. The code states that if the loose paint can be demonstrated to not contain lead, it will no longer be a hazard; however, the code does not appear to separately require testing of paint, dust, or soil to determine lead content. Such measurements are typically made by the health department only in the event that a child already has an elevated blood lead level. Other best practices for rental housing codes across the country provide for proactive paint, dust, or soil testing, instead of only requiring such testing after a child has been exposed.

This report describes the current Grand Rapids code process and provides recommendations on improvements to its housing code and associated inspection, enforcement procedures, staffing, public education, and other related matters. This project was funded by the Michigan Department of Health and Human Services, Child Lead Exposure Elimination Innovations Grant, contract number E20183042-00. The opinions expressed here are those of the National Center for Healthy Housing and do not necessarily reflect those of the City of Grand Rapids.

Summary of Recommendations

Require testing of deteriorated lead paint and dust as part of the certificate of compliance to determine actual risk of lead hazards. The current practice of visually examining paint is insufficient, because the lead content of deteriorated paint and dust cannot be seen by the naked eye.

Change the existing housing code language to require remediation of deteriorated lead-based paint using lead-safe work practices and clearance dust testing in all rental units in which young children reside or could visit. The dust testing should comply with the recent lead dust guidance values established by the U.S. Department of Housing and Urban Development for its lead hazard control grantees. The National Healthy Housing Standard (available at <https://nchh.org/tools-and-data/housing-code-tools/national-healthy-housing-standard/>) may be utilized as a model code. Grand Rapids currently requires lead-safe work practices for any remodeling, repair, or painting in pre-1978 homes.

Increase the number of housing code inspectors. Because dust and paint testing will take additional time, the number of housing code inspectors should be increased.

Train housing code inspectors to properly collect paint and dust samples as part of code inspections, instead of only doing so after a child has already been exposed.

Amend the language of the code violation notices to include deteriorated lead-based paint and elevated dust lead levels.

Involve the public in proposed changes to the code and seek comment from tenants, landlords, property owners, public health professionals, and other members of the public.

Facilitate data-sharing between the City of Grand Rapids and the Kent County Health Department. The city could provide a list of homes with a higher risk of hazards, using variables such as chipped paint and lack of compliance.

Public education efforts should include the importance of deteriorated lead-based paint and the associated contaminated dust and soil it generates.

Grand Rapids should evaluate the results of these code changes by documenting changes in both housing quality and childhood blood lead levels. Other factors to consider in evaluation include census tract or neighborhood comparisons to ensure the system is monitoring effectively and equitably.

Work with community-based programs to expand capacity to educate landlords and residents, assistance with temporary relocation if needed during repairs and expand referrals to social services for other needs identified in the home.

Consider increasing funding and capacity for code compliance, perhaps using Community Development Block Grant funding or other funding.

Introduction

How Housing Codes Can Help Prevent Childhood Lead Poisoning

Housing quality is an important social determinant of health in general and childhood lead poisoning prevention specifically. Yet the housing and health sectors are typically governed by separate fragmented and isolated systems. Although today's housing codes originated over a century ago in the sanitation movement to combat health problems such as cholera, tuberculosis, and typhoid, current codes (with important exceptions described below) typically refer housing-related lead paint problems to local health departments instead of using the code process to identify and correct such lead hazards. Health departments often focus on identifying lead hazards only after an elevated blood lead level has occurred.

This secondary prevention reactive approach hampers the application of the existing housing inspectorate and code systems to detect and correct lead hazards in housing before children have been exposed. Furthermore, housing codes in many jurisdictions are driven largely by complaint-driven reactive enforcement systems. In many cases, local housing codes are either silent on correction of lead hazards or defer to specialized lead risk assessments by local health departments. An effective code enforcement system can be a powerful tool for improving and protecting residents from lead exposure. Appendix A describes key elements of an effective system.

Key Characteristics of Grand Rapids

Grand Rapids has a population of about 195,355 (2017 estimates), about 14,446 of whom are children 0-5 years old. Grand Rapids has about 79,785 occupied housing units, 45.6% of which are rentals. Based on Grand Rapids' population data, an estimated 6,587 of children under the age of six would be living in these units. An estimated 81.5% of the housing units in Grand Rapids were built before 1979, and lead paint was banned for use in residential units in 1978 by the federal government. Lead paint is likely to be a hazard in a high number of Grand Rapids homes.

National Best Practices

Several municipalities across the country have taken action to address lead hazards in housing through codes, which are reviewed briefly here.

For example, in December 2005, Rochester (NY) passed an ordinance adding inspections of most pre-1978 rental housing for lead paint hazards to their ongoing rental housing inspections needed to obtain a certificate of occupancy (C of O). Rental housing inspections occur every three or six years, depending on building size (see <https://www.cityofrochester.gov/article.aspx?id=8589935004>). To receive a C of O, property owners must correct identified lead hazard violations (if any). If hazards are identified, the property owner must pass a private clearance test (a visual inspection plus at least eight dust wipe samples). The protocol, available at <https://www.cityofrochester.gov/lead/> and <https://ecode360.com/8677786>, states in part: "Dust samples shall be taken from each of no more than four rooms. The selection of rooms to be tested, where applicable, shall include no less than one bedroom and the living room. At least one wipe sample shall be taken from a window trough or a windowsill with a paint history, if present, and one from a floor in each room. Where there are less than four rooms, then all rooms shall be sampled." Results are compared to current EPA dust lead hazard standards. For the initial inspection, code officials examine paint condition, and if it is intact and the home is in a high-risk area, then they will collect eight dust wipe samples to ensure the home is safe for children. If paint is not intact, lead-safe work practices must be used to repair the paint, followed by private dust testing to ensure cleanup is adequate (unless the home has been found to be free of lead-based paint). The city

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maintains a publicly accessible database showing the date all rental properties passed their most recent C of O inspection, including lead.

The code does not appear to have significantly impacted the housing market in Rochester, a key concern of code officials and property owners prior to passing the law. Landlords have now accepted it as a routine cost of business (see <https://www.ncbi.nlm.nih.gov/pubmed/22001644>). As of August 28, 2018, Rochester has inspected 166,906 individual dwelling units (see <https://www.cityofrochester.gov/lead/>). Data show that blood lead levels in Rochester improved more than twice as fast compared to the rest of the state. Eighty-six percent of code inspections did not have an exterior lead violation, and 88% of those with a violation had complied with remediation as of August 2018. For interiors, of the 166,906 units inspected, 95% passed the initial visual inspection, and among those with an interior violation, 84% had complied as of June 30, 2018. Of the 4,141 units cited with a lead dust hazard, 98% have complied as of June 30, 2018. Ninety percent of the units subjected to dust wipe testing (over 30,000 units as of 2016) passed. During the first 12 years, the city has issued 782 vacate orders for situations with severe hazards that put children at risk and 3,418 tickets for noncompliance. The frequency of violations has declined in recent years, as landlords know what to expect. Furthermore, the ordinance has created a demand for more private inspectors to do clearance testing; the increased competition has resulted in a price reduction. Before the law was passed, a clearance test cost about \$350 per unit; the cost is now about \$125 per unit.

In Maryland, owners of older residential rental properties must register their properties annually with the Department of the Environment. Private inspectors issue a lead paint risk reduction certificate for each dwelling that passes the inspection, which includes both a visual examination of paint condition and dust lead testing. Rental properties covered by the law must be free of chipping, peeling paint, and lead-contaminated dust. To qualify for registration, owners must hire a certified contractor to address any defective paint and have an accredited lead paint inspector verify compliance before any change in occupancy. Inspectors issue a lead paint risk reduction certificate for each dwelling unit that passes the inspection. Whenever a tenant notifies an owner that there is defective paint or there is a child with an elevated blood lead level, the owner has 30 days to conduct modified risk reduction measures and pass lead inspection certification. The rental property owner is responsible for temporarily relocating the family to a lead-safe or lead-free dwelling while the original dwelling undergoes risk reduction measures. A key component in Maryland's substantial decline in childhood lead poisoning has been its strong public enforcement of the Maryland Reduction of Lead Risk in Housing Act coupled with local enforcement coordination and private enforcement actions by nonprofit agencies and *pro se* tenants. The Maryland Department of the Environment files 500 to 800 violation notices annually, and a team from the state's attorney general's office is responsible for enforcing actions against noncompliant owners. Another highly effective best practice has been Maryland's policy of pursuing enforcement against a rental property owner's entire noncompliant housing portfolio once enforcement actions have been initiated against any one of the owner's

properties. Local housing code enforcement and landlord licensing officials at the city and county levels also help coordinate enforcement by referring noncompliant properties in their jurisdictions to MDE for enforcement of the registration and risk reduction requirements.

Rhode Island passed the Lead Hazard Mitigation Act in 2002 and implemented code regulations in 2004. Before any change in ownership or tenancy of a property and at least every two years, the property owner must have the property inspected and demonstrate via a certificate of conformance (COC) or a lead-safe or lead-free certificate that the dwelling is safe for children. Establishing lead safety includes dust testing. Under the law, rental property owners are required to attend a training session on unsafe lead conditions, inspect/repair any lead hazards at their properties, make residents aware of their findings and actions, address residents' lead-hazard concerns, use lead-safe work practices during maintenance, and verify each unit's compliance through a lead inspector. Typically, the owner must have the property inspected every two years and prove its safety for children by showing a COC or a lead-safe or lead-free certificate. Since the law's enactment, the state has been challenged by compliance. In 2014, when the Providence Plan completed an evaluation of the Lead Hazard Mitigation Law, it found that only 20% of the covered properties had complied with the regulations within the first five years of implementation. Several cities have taken steps to improve enforcement. Providence, for example, created a separate division of housing court to address lead violations. The Inspection and Standards division reported that 484 of 537 lead violation cases filed over the first four years resulted in corrective action. An analysis conducted by the Rhode Island Department of Health discovered that there was a significant decline in children with elevated blood lead levels in Providence between 2012 and 2013. Notably, the decline coincided with the implementation of the building permitting requirements and the lead docket.

The National Healthy Housing Standard, a model code, provides that lead levels at or above federal regulatory limits are defined as hazards and must be remediated. Those levels include deteriorated lead paint (0.5% by weight or 1.0 milligram per square centimeter); dust (40 micrograms of lead dust per square foot [$\mu\text{g}/\text{ft}^2$] on floors and 100 $\mu\text{g}/\text{ft}^2$ on windowsills). The Standard also states that painted surfaces shall be maintained intact and with the exception of paint tested and found not to contain lead, deteriorated paint at a property built before 1978 shall be repaired using lead-safe work practices and follow-up dust testing.

Many federally assisted housing programs, including public housing, Section 8 project-based assistance, and federally assisted housing rehabilitation programs, also require paint and dust testing, regardless of whether a child with an elevated blood lead level resides there. Some cities will undertake abatement if the owner refuses and then bill that owner, including New York City and Omaha. Washington, DC, requires a clearance examination (dust testing) whenever a pre-1978 unit is about to be occupied by a pregnant woman or child under six.

Additional case studies of best practices across the nation for childhood lead poisoning prevention are available here: <https://nchh.org/who-we-are/nchh-publications/case-studies/lpp-stories-case-studies/>

Methods

We conducted several conference calls with key local personnel to introduce the project, describe the process and identify current codes in October and November 2018. After reviewing the local code, we used the NCHH Code Comparison Tool (<https://nchh.org/tools-and-data/housing-code-tools/cct/>) to compare Grand Rapids' housing code with best practices (see Appendix B).

In December 2018, we conducted an on-site visit, which was attended by Adam London, Administrative Health Officer and Chandy Colley, Program Supervisor, of the Kent County Health Department, and Mayor Rosalynn Bliss and City Manager Mark Washington of Grand Rapids. NCHH staff also attended a meeting of the Grand Rapids Lead Free Advisory Committee. Representing the National Center for Healthy Housing were David Jacobs and Sarah Goodwin. The relevant documents were obtained and subsequent data requests identified. We met again with local code officials on April 16, 2019, to present a draft report and discuss comments from the city.

Results and Recommendations

Code Language

Grand Rapids has a rental property registration process and a planned pro-active scheduled inspection process, both of which are enormous strengths. This is superior to a solely complaint-driven reactive code inspection system, although many jurisdictions have moved to proactive systems in recent years. (Of course, the complaint-driven process needs to continue in order to respond to violations that may occur outside of the periodic scheduled inspection process.) The reactive system often relies on injuries, illnesses, or a resident's complaint and often occurs only after conditions have become quite serious. The reactive system also tends to produce more litigation and creates uncertainty in the rental market, because landlords may have to absorb unanticipated property repair and litigation expenses. The presence of a proactive scheduled inspection process is a strength upon which the Grand Rapids community can build.

One area for improvement is the language of the code itself, which restricts violations to only visually deteriorated paint, regardless of whether it actually contains lead. Although

deteriorated nonlead paint should be corrected to help prevent rot and other matters, it is not the urgent health hazard that deteriorated lead paint is. The current code language is largely drawn from the International Property Maintenance Code, which has been criticized by the National Center for Healthy Housing and others for its failure to identify actual lead hazards (see <https://nchh.org/information-and-evidence/healthy-housing-policy/state-and-local/icc/>). It also diverts attention from where it is most needed, because most paint, even in older housing stock, does not actually contain lead.

One option would be to require actual testing of deteriorated paint to determine if it has levels of lead above the federal standards, which Michigan has adopted. This can be achieved by simply adopting the National Healthy Housing Standard, which would also have the added benefit of addressing other housing conditions that could adversely affect health. There are two methods of measuring lead in paint:

- Careful collection of all layers of paint from deteriorated surfaces, followed by laboratory analysis accredited under the EPA National Lead Laboratory Accreditation program; or
- On-site analysis using portable lead paint analyzers using x-ray fluorescence (XRF).

Either method is acceptable. Paint chip collection has lower up-front costs but can be tedious and removes paint from a surface that must be sealed following collection. XRFs have a higher up-front cost but yield immediate results and do not involve destructive paint chip sampling.

If deteriorated paint is found to contain lead, then remediation can occur using lead-safe work practices performed by certified personnel (essentially wet scraping to reduce dust emissions, followed by application of a durable two-coat compatible paint film, followed by specialized cleaning and dust testing). Dust testing is a relatively simple procedure carried out across a measured surface area on floors and windowsills, but the testing must be performed by trained and certified personnel and also requires laboratory analysis.

Another option is to incorporate code language that follows the Rochester model, which requires all paint to be intact but also provides for dust lead testing even when paint is intact. Dust lead is known to be the main route of exposure for most children via normal hand-to-mouth contact, contamination of hands, toys and other objects, ingestion of lead dust and subsequent absorption into the child's body. The Rochester model helps to address the situation where landlords have repainted but may not have followed lead-safe work practices or cleanup procedures. Disturbance of only a small amount of lead paint can cause major dust lead contamination. For example, consider the case of paint removal using dry scraping or sanding that turns the lead paint into lead dust. Removing only one square foot of lead paint containing the minimum amount of lead regulated by the federal government (1 mg/cm²) and then distributing that lead dust over an average 10-foot-by-10-foot room results in a dust lead level of 9,300 µg/ft², which is well over the EPA limit of 40 µg/ft² for floors. By conducting dust

lead testing, inadequate dust containment and cleanup practices can be detected before a child has been needlessly exposed. Lead-safe work practices (in brief) involve occupant and worker protection, containment, use of wet methods during paint removal to minimize dust emission, use of durable new paint or other coatings or enclosures or building component replacement, followed by specialized cleanup methods and clearance dust testing to ensure cleaning has been adequate. Proactive dust testing and lead-safe work practices are also required in Maryland and Washington, DC, and most federally assisted housing programs.

A final option would be to require lead risk assessments followed by remediation in all older family rental properties. Risk assessments measure lead content in deteriorated paint, dust, and bare soil. Detroit is currently pursuing this approach on a ZIP-code-by-ZIP-code basis, and it is the standard of care in most federally assisted housing programs and in HUD's lead hazard control grant program.

Any of these methods would require changes to the city code and could be implemented as the regular schedule of rental inspections continues. This process would allow for the City of Grand Rapids to notify the community and property owners of the incoming requirements, giving time for owners to address hazards before being met with an inspection and potential citation.

Also worthy of note is that Kent County has recently drawn up an enforcement protocol, to take effect in 2019, for homes where children have tested with elevated blood lead levels that will be enforced by the county code. The protocol will impose a first penalty of \$100 and a second penalty of \$200, with further criminal violations to be prosecuted for those who fail to comply. The goal behind this program is to reach the approximately 400 properties where the health department has observed multiple impacted families over the years.

Staffing and Enforcement

Improving the language in the code will ultimately be ineffective if it is not actually obeyed and enforced. Grand Rapids currently has 18 housing code inspectors budgeted. If Grand Rapids' codes are updated to enable code inspectors to also collect dust and deteriorated paint and soil samples, additional staff would likely be needed to help ensure compliance and that rental units are indeed free of levels of lead dust and deteriorated lead-based paint.

Data from Grand Rapids indicated there are estimated 29,914 rental dwelling units built before 1978. If we assume that all of these units could potentially be occupied by or visited by children under six years of age and would require inspections/risk assessments for lead-based paint hazards, then we can estimate the following additional staffing needs.

The City of Grand Rapids estimates that the time required to conduct the existing code inspection averages 1.5 hours per unit. The actual time depends on the number of units in a given building as follows:

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- 1-2 units = 1 hour
- 3 units = 1.5 hours
- 4-6 units = 2 hours
- 7-10 units = 2.5 hours

The estimated additional time it would take a trained code inspector to perform a visual examination of paint (and other housing conditions), collect paint chips from deteriorated surfaces, and collect dust wipe samples from floors and windowsills in an average of four rooms per unit is approximately one additional hour (not including travel, administrative, and report preparation time).

Staffing needs can be estimated as shown in Table 1 below.

Table 1.

a	29,914	Rental units built before 1978.
b	4.75	Average years of cert (per PowerBI Rental report for certs issued in 2018).
c	6,298	Units per year impacted by policy change (line <i>a/b</i>).
e	1	Average additional hours per unit for initial inspection (per TACTIC estimate).
f	6,298	Total additional hours per year for initial cert inspections (line <i>c x e</i>).
g	0.50	Average additional hours per unit for follow-up inspections/case processing (per GR estimate).
h	3,149	Total additional hours per year for follow-up (line <i>c x g</i>).
i	9,447	Total additional hours per year for policy change (line <i>f + h</i>).
k	60%	CCO available insp/case time for 1 FTE (after time off, training, breaks, travel time, et cetera).
l	2,080	FTE hours per year (52 weeks * 40 hours).
m	1,248	CCO hours available for inspections/case work (line <i>k x l</i>).
n	7.57	Number of additional CCOs estimated for policy change (line <i>i/m</i>).

We estimate that if code inspectors take paint and/or dust samples, it will take an additional hour to complete a code inspection, which would require an additional 6,298 hours of inspector time per year. If it takes an additional half an hour per unit for follow-up and administrative case processing (3,149 hours), then the total additional staff time needed would be 9,447 hours per year. We can assume that 60% of a code compliance officer’s time is available for inspections and case work, and that there are 2,080 FTE hours per year (52 weeks x 40 hours/week = 2,080 hours per year). Using these assumptions, there would be 1,248 code compliance officer hours available for inspections/case work, which translates into about 7.57 additional code inspectors (see table 1 for detailed calculations).

Alternatively, the City of Grand Rapids could require private lead risk assessors to conduct the additional lead tests, which is the process now underway in Detroit. Under this model, the city would still need to perform some oversight of private lead risk assessors, and landlords (instead of the city) would need to pay the cost of a lead risk assessment. Using city risk assessors is akin to the model used in Rochester, while private risk assessors are akin to the model in Detroit and Maryland. Finally, this estimate does not include the number of pre-1978 units that do not have lead paint or lead dust hazards, which could be exempted from further testing requirements. The final determination of additional staffing needs clearly depends on which system the city chooses to adopt.

Training

If housing inspectors in Grand Rapids are to be charged with collecting dust wipe and deteriorated paint chip samples, they will need to be certified to do so under Michigan law. This is typically achieved with a two-day training course. Code inspectors in Rochester, NY, and elsewhere are cross-trained to enable them to identify both housing code violations and lead-based paint hazards. The existing code inspectors in Grand Rapids are not currently trained in lead hazard identification, although other cities in Michigan, such as Battle Creek, do employ code inspectors with cross-training in both recognition of code violations and lead-based paint hazards. In addition to cross-training of code inspectors, other training needs may include the following:

- Lead hazard awareness for supervisors.
- Lead hazard awareness for city attorneys charged with enforcing lead-related code violations.
- Lead hazard awareness for administrative law judges.
- Training for health department case workers who coordinate care for children with elevated blood lead levels on housing code violation procedures; specifically, how they can request a housing code inspector in homes of children with elevated blood lead levels.
- Healthy homes best practices and standards for code inspectors, so that they will be better equipped when encountering other hazards
- “Soft skills,” such as customer service, communications, and ethics training for code officers, who may interact often with tenants and landlords from various cultural backgrounds, if needed.

As the program develops and if Grand Rapids strengthens its codes, ongoing and comprehensive training will be required to ensure staff capacity to enforce the new provisions.

Implementation Considerations – Involving the Public

Integrating lead hazard identification into the housing codes in Grand Rapids should also consider how best to achieve community consensus. This will require careful articulation of why this is needed and related costs and benefits. Community leaders should be engaged to help articulate why housing codes present an important opportunity to address childhood lead poisoning in Grand Rapids. Those opportunities include:

- Ending the historic divide between housing and public health.
- Taking action before children are harmed, instead of only reacting after the harm has been done.
- Potential for new job creation.
- The benefits of a “health in all policies” approach.
- How the costs of proactive code inspections are less than the costs of treating and educating children with elevated blood lead levels.
- How proactive codes can benefit landlords by reducing the prospect of unanticipated housing repairs and avoidable litigation.
- Building public trust in democratic institutions to address preventable diseases such as childhood lead poisoning.
- Active engagement of the city’s philanthropic institutions.
- Ending the current inefficient practice of shifting the costs of lead poisoning to our schools, medical care institutions, the criminal justice system, and employers.
- Explanation of how existing resources can be used to help landlords comply.
- Aggressively addressing health equity and a structural health disparity.
- Establishing a high standard for the maintenance and management of Grand Rapids’ housing infrastructure, ensuring that affordable housing meets the same minimum but safe standards as market-rate and luxury housing.

Grand Rapids has an existing mayoral Lead-Free Kids GR Advisory Committee, with participation from city staff, city commissioners, and community members. The advisory committee positions Grand Rapids with good opportunities to continue to engage the public as it implements changes to city codes or enforcement. During the decision-making process, the city should make sure to consider equity impacts of code changes. Some particular recommendations to keep in mind include:

- Including community members in the development of the structure of the policy process to ensure that they are represented throughout the process.
- Implementing strategies that are holistic and break down silos.
- Developing awareness campaigns so that the necessity of the policy changes are conveyed to the community.
- Prioritizing resources to areas with the highest prevalence of lead-poisoned children.
- Protecting tenants as the code changes are implemented.

More details for these recommendations and others about addressing equity in lead poisoning prevention policy change can be found in *Achieving Equity in Lead Poisoning Prevention Policy Making: Proceedings from a Consensus Conference*, a report from Human Impact Partners: <https://humanimpact.org/wp-content/uploads/2018/11/Achieving-Equity-in-Lead-Poisoning-Prevention-Policy-Making-Proceedings-from-a-Consensus-Conference.pdf>

Conclusions

A recent authoritative report showed how every dollar invested in residential lead hazard control (which can include better codes) will yield at least \$1.36 in monetary benefits (see <https://nchh.org/information-and-evidence/healthy-housing-policy/10-policies/>). Community involvement in such changes is essential. Although housing codes are often considered to be mundane, they can also be an important vehicle to rebuilding trust in government and in the city's ability to solve its challenges. In short, implementation must include an important public education and involvement component if such changes are to be lasting and productive.

Strengthening the Grand Rapids housing code holds great promise in helping the city prevent childhood lead poisoning. The city already has a proactive rental housing inspection process that can be leveraged to include detection of lead hazards before children have been exposed. Changes in housing code language, staffing levels, enforcement, and creative use of subsidies can all be used to help eliminate childhood lead poisoning as a major public health problem.

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Appendices

Appendix A: Elements of Effective Housing Code Enforcement Programs

Appendix B: Code Comparison Tool Results

Appendix C: TACTIC Site Visit Meeting Minutes

Appendix A: Elements of Effective Housing Code Enforcement Programs

Adapted from *Up to Code: Code Enforcement Strategies for Healthy Housing*.

Adopt a Strong Housing Code

Housing codes often contain ambiguous phrases in their standards, such as “clean,” “sanitary,” “safe,” and “healthy,” and the lack of detail makes efficient and effective code enforcement difficult. Without specific standards to serve as a guide, property owners, residents, and code enforcement officers can interpret housing codes differently, leaving compliance decisions subject to challenges and residents vulnerable. In addition, many housing codes don’t properly address health-related threats in the home, such as pests, moisture, ventilation, and chemicals (radon, lead, and pesticides, for example).

Resource/tip: The National Healthy Housing Standard provides model codes that incorporate public health rationale into building code parlance.

Fund the Code Enforcement Program Sufficiently

Effective code enforcement programs require sufficient financial resources. In many localities, state law sets forth how the locality may fund its code enforcement operations (typically through general fund, Community Development Block Grant (CDBG) funding, permits/regulatory fees, or fines). State laws may also set forth the types of fees and amount of fines the jurisdiction may assess on those who violate the housing code.

Resource/tip: Some communities fund their code enforcement programs with moneys from the CDBG program, administered by the U.S. Department of Housing and Urban Development. These grants can fund code enforcement officers’ salaries and related expenses, legal proceedings to enforce housing codes, and rehabilitation or improvement of some types of housing.

Training Officers Comprehensively

Code enforcement programs require well-trained officers to enforce the local housing code. Officers need to participate in a broad-based training program, periodic training updates, and routine inspections with other officers to ensure professionalism and consistency in the field. Training should cover all applicable federal, state, and local laws but also best practices, soft skills (e.g., how to work effectively with residents from diverse backgrounds), and availability of community resources to assist residents.

Resource/Tip: The National Healthy Homes Training Center offers training for code inspectors.

Partner with Community Organizations

Community organizations can raise awareness of the purpose, policies, and procedures of code enforcement, and provide supplementary resources and services.

Resource/tip: Code enforcement programs have a variety of potential community partners, including housing advocates, public health professionals, immigrant and refugee service providers, social workers, tenant organizations, and home repair programs.

Promote Cross-Agency Coordination

Ensuring housing is safe and habitable requires cross-agency coordination. Because responsibility for health and safety is usually divided among various city agencies or departments, intragovernmental communication and collaboration can help make code enforcement more efficient and effective, and less like a series of disjointed, isolated efforts.

Resource/tip: Staff of the Erie County (NY) Department of Health’s Healthy Neighborhoods Program and Lead Poisoning Prevention Program are trained and deputized code enforcement officers, which enables health department staff to formally cite for violations of the Erie County Sanitary Code while conducting home assessments. Deputizing health and/or housing agencies to enforce each other’s code provisions assures a unified perspective toward housing-based lead poisoning primary prevention.

Develop a Cooperative Compliance Model

Under a cooperative compliance model, rather than simply inspecting housing and citing for violations, the code enforcement officer works cooperatively with property owners to help them understand the elements of healthy housing, the importance of code compliance, and how to bring the property into compliance. The code enforcement officer is armed with cooperative tools – information, education, and resources – along with traditional enforcement sanctions. Cooperative compliance allows property owners and officers to work together to improve housing conditions and promote health.

Resource/tip: Many communities struggle with enforcement. A cooperative compliance approach can reduce the number of properties that require follow-up enforcement action.

Enforce the Local Housing Code

Most owners do their best to comply with housing codes, but code enforcement programs must be prepared to deal with those who don’t. To protect the health and safety of residents effectively, programs need to be flexible and efficient, and have teeth. There are three major types of enforcement: administrative, civil, and criminal.

Resource/tip: ChangeLab Solutions’ [Healthy Housing Laws that Work: Creating Effective Implementation and Enforcement Clauses](#) explains the different ways local governments can enforce housing and property maintenance codes.

Adopt a Proactive Rental Inspection (PRI) Program

Traditional code enforcement programs are complaint-based; that is, in response to a resident’s complaint about a substandard housing condition, a code enforcement officer conducts a housing inspection. Under a PRI program, rather than wait for a complaint to trigger a housing inspection, the locality inspects all covered rental housing on a periodic basis. Though the specifics vary by locality, PRI programs typically share the same basic structure: registration, periodic inspections, and enforcement. A PRI system doesn’t replace a complaint-based system and can help both property owners (by incentivizing routine maintenance that prevents costly repairs) and tenants (e.g., by ensuring equitable access to services for vulnerable populations that may be unaware of or fearful of exercising their rights under a traditional complaint-based system).

Resource/tip: ChangeLab Solutions’ [A Guide to Proactive Rental Inspection Programs](#) and [Model Proactive Rental Inspection Ordinance](#) explains how proactive rental inspections can help protect vulnerable residents, preserve safe and healthy rental housing, and work to increase neighborhood property values.

Establish Supplementary Programs

Jurisdictions can establish auxiliary programs that increase code enforcement effectiveness by educating community members, incentivizing and/or financing repairs, and helping residents move when necessary.

Resource/tip: [Up to Code: Code Enforcement Strategies for Healthy Housing](#) contains several examples of supplementary programs that other communities have established to support their code enforcement activities.

Evaluate the Code Enforcement Program

Code enforcement programs should collect and analyze data regularly to better understand their strengths and weaknesses. Evaluation can help monitor functioning, identify areas for improvement, help to justify resources, and provide accountability. Communities may also consider tracking key performance metrics by census tract or neighborhood to ensure equitable access and that the system is working well for all residents.

Resource/tip: Data collection and analysis can provide valuable information to both government agencies and the community. Whenever possible, communities should work to establish data

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sharing with other agencies or programs and, as appropriate or feasible, make data publicly available.

Citation

ChangeLab Solutions (eds.). (2015, May). Up to code: Code enforcement strategies for healthy housing. Oakland, CA: ChangeLab Solutions. Retrieved May 23, 2019, from https://changelabsolutions.org/sites/default/files/Up-to-Code_Enforcement_Guide_FINAL-20150527.pdf.

Appendix B: Code Comparison Tool Results

Background

Location	Property Maintenance Code	Other Code Sections	Other Documents
Battle Creek Uses IPMC 2015	Part 14, Title 4, Chapter 1450: Property Maintenance Code International Property Maintenance Code 2015	842 Rental Housing 1456 Vacant or Abandoned Structures	Rental Permit Application Rental Property Checklist Vacant or Abandoned Registration Form
Detroit Based on the 2000 IPMC	Chapter 9, Article 1: Property Maintenance Code	Chapter 9, Article 1, Division 3: Rental Property Chapter 26 - Housing Chapter 24, Article X: Lead Poisoning Prevention Testing and Prevention	
Flint Uses IPMC 2015	Chapter 5, Article 3: Property Maintenance Code International Property Maintenance Code 2015	Chapter 5, Article 3, Sec. 5.3-3 on: Certificate of Compliance for rental properties	
Grand Rapids Uses IPMC 2012 with amendments	Title VIII, Chapter 140: Property Maintenance Code International Property Maintenance Code 2012	Title VIII, Chapter 140, Sec. 8504: Amendments to the Code including certificate of compliance for rentals	
Michigan State Lead Law	Public Health Code, Act 368 of 1978, Part 54A: The Lead Abatement Act		Lead Hazard Control Rules

Code Comparison Tool

Grand Rapids uses the 2012 IPMC with local addenda, as described below.

<https://www.grandrapidsmi.gov/Government/Departments/Code-Compliance>

Amended IPMC (Ord. No. 2012-35, § 1, 6-19-12, eff. 7-1-12)

304.2.1 Loose paint particles.

- (1) Loose paint particles, removal required. The owner of a dwelling or dwelling unit shall not allow loose paint particles in the interior or exterior of a dwelling or dwelling unit. If the loose paint on the cited surface can be satisfactorily demonstrated to not contain lead, no hazardous condition shall exist.
- (2) Bare soil. From May 1 through October 31, bare soil located within thirty (30) inches of the foundation wall of any structure is prohibited and shall be presumed to be a hazardous condition. Such presumed hazardous condition shall be corrected by proper installation of dense vegetation, permanent paving material, or a minimum six-inch deep cover of loose material such as bark, wood chips, or stone, unless the owner provides testing performed by a Risk Assessor or Lead Paint Inspector that the cited soil does not contain lead hazards.
- (3) Remodeling, repair or painting. Any remodeling, repair or painting of residential structures constructed prior to 1978 is to be conducted in compliance with the Lead Safe Work Practices as established by the United States Environmental Protection Agency and/or the United States Office of Housing and Urban Development.

Registration is required annually for all rental units.

Certificates of compliance are valid for six or four years, depending on size of building, or 2 years if the property has a previous history of violation. The certificate is valid only for the existing owner and cannot be transferred to a new owner. The certificate can also be suspended if a “substantial violation” is identified.

One strength of the code system in Grand Rapids is that it does not rely only on a complaint by a tenant or other person; instead, it proactively mandates a regular code inspection based on a regularly scheduled certificate of compliance. The full benefit of this system from a lead poisoning prevention standpoint could be better realized if the certificate contained requirements for proactive lead dust testing, not merely a visual assessment for paint quality. Grand Rapids’ codes for loose paint particles are below the standards set by the National Center for Healthy Housing’s Code Comparison Tool; for example, it does not appear to mandate lead-safe work practices if “loose paint particles” are identified.

The 2015 IPMC requires that interior (305.3) and exterior (304.2) painted surfaces be maintained intact and that peeling, flaking, or chipping paint should be repaired or removed.

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However, the 2012 Grand Rapids code does not appear to require that deteriorated paint on properties predating 1978 be repaired in accordance with the Renovation, Repair, and Painting (RRP) Rule, or that the underlying cause of the deteriorated paint be corrected, or that paint, dust, and soil be tested to determine whether a hazard is present or absent. The requirements of the National Healthy Housing Standard are described in Appendix B.

A checklist available to owners before an inspection has been provided and matches the language shown above.

Addressing lead in water is a stretch provision in the NCHH Code Comparison Tool. The IPMC does not include any regulation of lead in drinking water. No code provision could be identified that regulates lead in drinking water.

The practice of conducting visual inspections for deteriorated paint at rental inspections is roughly in line with one of the provisions in the Rochester (NY) Lead-Based Paint Poisoning Prevention code, which is considered a national model. Both codes include visual inspections as part of larger rental inspections. Rochester's code requires visual inspections in all rental inspections. However, there are many other elements of the Rochester code that are missing from or unclear in the Grand Rapids code, such as:

- Rochester also includes a prohibition on and inspection for bare soil as well as peeling paint.
- For high-risk areas, even when they pass a visual inspection, Rochester requires collecting and analyzing dust samples.
- From documents reviewed and initial conversation with the city, it is unclear what the protocol is for addressing deteriorated paint once it has been identified. Similarly, clarification is needed about regulations observed when conducting repair work.
- It does not appear that Grand Rapids currently has any provision prohibiting retaliatory action from landlords to tenants (this will be confirmed).

The Grand Rapids code also does not appear to prohibit *expressly* the use of lead-based paint in residential structures. Although the Consumer Product Safety Commission prohibited such use in 1977, lead-based paint is still manufactured in other countries (which could be imported into the U.S.) and lead-based paint is still permitted for certain industrial paints, which could in theory be applied to U.S. residences.

SECTION E: Chemical Hazards – Building Products

Questions: 10

Total Responses: 25

Answered: 25

Percentage Complete: 100%

Status: Average

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Questions E1-E6: Lead

Strong. Congratulations! Your responses indicate that your community is using most of the evidence-based provisions in the National Healthy Housing Standard (NHHS) in this area – NHHS Provisions (7.1, 7.2.2, 7.2.3, 7.2.4). To take the next step in using housing codes to protect resident health, consider implementing some or all of the provisions listed below.

Questions E7-E8: Asbestos

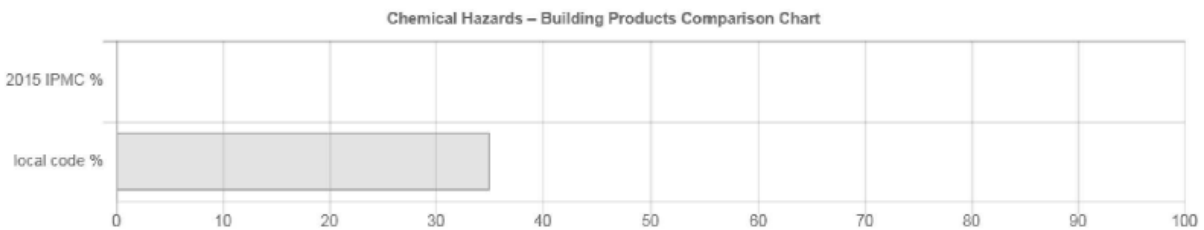
Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.3, 7.3.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

Questions E9-E10: Toxic Building Materials

Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.4.1, 7.4.2) to explore ways to improve your code. Consider implementing some or all of the provisions listed below.

SECTION	NUMBER OF NHHS MANDATORY PROVISIONS	NUMBER OF 2015 IPMC PROVISIONS THAT MEET OR EXCEED NHHS PROVISIONS	COMMUNITY SCORE (POINTS ALLOCATED FOR EACH PROVISION THAT WAS PARTIALLY OR FULLY MET)*	COMMUNITY % (COMMUNITY SCORE/NUMBER OF NHHS MANDATORY PROVISIONS)
Chemical Hazards - Building Products	10 (100%)	0%	3.5	35%

*Meets or exceeds standard = 1 point; partially meets standard = 0.5 point; doesn't meet standard=0 points



NHHS Provisions that You Reported Already Exist in Your Local Code

NHHS Provision 7.2.5. Lead-based paint shall not be applied to the interior or exterior of any dwelling or dwelling unit.

NHHS Provision 7.2.1. Lead levels at or above federal regulatory limits pursuant to 40 C.F.R. § 745.65 are deemed hazardous:

1. Lead-based paint on an existing painted surface – 0.5% by weight or 1.0 milligrams per square centimeter;

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2. Dust on floors – 40 micrograms of lead per square foot of settled dust ($\mu\text{g}/\text{ft}^2$);
3. Dust on interior windowsills – 250 $\mu\text{g}/\text{ft}^2$;
4. Dust on window troughs (wells) – 400 $\mu\text{g}/\text{ft}^2$;
5. Bare soil in children's play areas – 400 parts per million (ppm) of lead; and
6. Bare soil in areas of the yard that are not children's play areas – 1,200 ppm.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of *40 C.F.R. § 745 Subpart E*, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.3.1. Friable asbestos-containing material shall be abated by licensed asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.3.3. Abatement, removal, and disposal of all asbestos-containing material shall comply with all appropriate federal, state, and local requirements.

NHHS Provisions that Your Local Code Does Not Include (in Part or in Full)

NHHS Provision 7.1. All chemical and radiological agents in dwellings, premises, and accessory structures, including but not limited to deteriorated lead-based paint, friable asbestos-containing material, formaldehyde, volatile organic compounds, radon, pesticides, and methamphetamine, shall be contained, stored, removed, or mitigated in a safe and healthy manner consistent with federal, state, and local laws and regulations. When an applicable regulatory limit is more protective than the level included in this section, the more restrictive limit shall apply.

NHHS Provision 7.2.2. Painted surfaces shall be maintained intact. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, deteriorated paint at a property built before 1978 shall be repaired in accordance with the renovation requirements of *40 C.F.R. § 745 Subpart E*, and the underlying cause of the deterioration shall be corrected.

NHHS Provision 7.2.3. All renovation, repair, and painting work that disturbs a painted surface in a pre-1978 dwelling shall be performed in accordance with the renovation requirements of *40 C.F.R. § 745, Subpart E*, unless the paint has been tested and found not to contain lead-

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based paint in accordance with *40 C.F.R. § 745.82(a)*. Dust clearance testing shall be performed at the conclusion of the renovation work.

NHHS Provision 7.2.4. With the exception of paint that is tested and found not to contain lead-based paint in accordance with *40 C.F.R. § 745.82(a)*, a painted surface shall not be disturbed using methods that involve (1) open-flame burning or torching or operating a heat gun at temperatures above a maximum of 1, 100° F (593° C); or (2) power sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting unless such machines have shrouds or containment systems and a high-efficiency particulate air (HEPA) vacuum attachment that collects dust and debris at the point of generation. The shroud or containment system shall release no visible dust or air outside the shroud or containment system.

NHHS Provision 7.3. Every owner shall maintain in good repair all asbestos-containing material on the premises. All asbestos-containing material shall be maintained non-friable and free from any defects such as holes, cracks, tears, and/or looseness that may allow the release of fibers into the environment.

NHHS Provision 7.3.2. Any renovation, demolition, or other activity that will disturb asbestos-containing materials shall be preceded by asbestos abatement performed by certified asbestos professionals in accordance with federal, state, or local requirements.

NHHS Provision 7.4.1. Building materials consisting of hardwood plywood, medium-density fiberboard, and particleboard as defined by *15 U.S.C. 2697(b)(2)* shall not be used in maintenance and renovations within dwellings, unless the materials have been certified to meet the formaldehyde emission standards of *15 U.S.C. 2697(b)(2)*:

1. Hardwood plywood with a veneer core, 0.05 parts per million (ppm);
2. Hardwood plywood with a composite core, 0.05 ppm;
3. Medium-density fiberboard, 0.11 ppm;
4. Thin medium-density fiberboard, 0.13 ppm; and
5. Particleboard, 0.09 ppm.

NHHS Provision 7.4.2. Building materials used in maintenance and renovations, including but not limited to paints, coatings, primers, glues, resins, adhesives, and floor coverings, shall be certified as having no volatile organic chemicals (VOCs) or low-VOC emissions, and having no halogenated flame retardants (HFRs).

NHHS Stretch Provisions (Not Assessed in Online Tool)

NHHS Stretch Provision 7.2. Lead present at or above the following limits is deemed hazardous:

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1. Lead-based paint on a friction, impact, or chewable surface, damaged or otherwise deteriorated, or non-intact – 0.06% by weight;
2. Dust on floors – 10 micrograms of lead per square foot of settled dust ($\mu\text{g}/\text{ft}^2$);
3. Dust on interior windowsills – $100 \mu\text{g}/\text{ft}^2$; and
4. $40 \mu\text{g}/\text{ft}^2$ on porches.

Why Chemical Hazards – Building Products Matter

Lead is a heavy metal that accumulates in the body when ingested and has toxic effects on the nervous system, cognitive development, and blood-forming and other systems. Sources of lead include lead-based paint and the dust it generates, soil, drinking water, and consumer and other products. Lead-contaminated soil may be found particularly around older buildings contaminated by flaking external paintwork, adjacent to industrial premises using (or previously having used) lead, and near busy roads from the exhaust fumes from leaded gasoline. Lead is readily absorbed from the intestinal tract, especially in children, and its absorption is enhanced by dietary deficiency of iron and calcium.

Exposure to asbestos increases the risk of developing lung disease. Asbestos products were historically used extensively in building materials. Vermiculite insulation in homes may be contaminated with asbestos. Vermiculite insulation should be assumed to be contaminated with asbestos and should not be disturbed. Trained professionals must be hired to remove vermiculite insulation. Formaldehyde is a prominent VOC found in household and construction products. It is a colorless, strong-smelling gas that can cause watery eyes, nausea, coughing, chest tightness, wheezing, skin rashes, and allergic reactions, and a burning sensation in the eyes, nose, and throat.

Formaldehyde is classified by the World Health Organization as a known human carcinogen . The most significant source of formaldehyde in the homes has been pressed-wood products made using adhesives that contain urea formaldehyde (UF) resins.

Suggested Next Steps

You have your results. Now what? Here are some suggested next steps:

- Review your results and identify places where your code is already strong and where there may be an opportunity to improve your local codes.
- Use the graphic provided (or export your data and create one yourself) to create a memo or presentation summarizing these results to start a conversation about whether there is an opportunity for action in your community.
- Download the National Healthy Housing Standard for reference as a model code.

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- Read about how other communities have used the NHHS to strengthen their local codes and are using codes to improve health.
 - Healthy Housing Codes:
<https://nchh.org/information-and-evidence/healthy-housing-policy/state-and-local/healthy-housing-codes/>
 - Proactive Rental Inspections:
<https://nchh.org/resources/policy/proactive-rental-inspections/>
 - Incentivizing Healthy Housing:
<https://nchh.org/resources/policy/incentivizing-healthy-housing/>
 - APHA: Healthy Homes:
<https://www.apha.org/healthy-homes>
- Ask for technical assistance or help getting connected to a peer mentor. Contact Jonathan Wilson (<mailto:jwilson@nchh.org>).

Appendix C: TACTIC Site Visit Meeting Minutes

Meeting One: December 18, 2018 – Kent County Health Department

Attendees:

Adam London, Administrative Health Officer
Chandy Colley, Program Supervisor, Community Wellness Division
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

Health Department Programs

The Health Department CLPP program has 1.5 nurses and is currently hiring a lead inspector to work with the new CHIP money. They recently began a new protocol for transferring capillary results to venous testing. The new inspector will do LIRAs and give the report to the landlord and the city. They will not have to give it to the tenant because state law says you need the landlord's permission. This is a big loophole in the state law.

Good elements of the lead program: integration with CHIP program is promising, HUD grant has gone well; they feel there is a good base from which to build.

Bad elements: Housing authorities don't want to share data. HHS is trying to work on sharing that data but has not been successful.

The county has drawn up an enforcement protocol for homes with current EBLL kids using the county code. This will begin in 2019.

- The first penalty is \$100, second is \$200, and then the violation will be prosecuted. Unclear what the time frames are between these actions.
- They have identified 443 properties where multiple families have been impacted. This protocol will attempt to get at those repeat offenders.
- They have also witnessed many cases where families were evicted after the notice to landlords, so that's a concern to keep in mind.

The health department has also encountered five homes that have previously gone through the lead hazard control program and where an EBLL child has turned up later. This has led to some concerns about clearance testing.

The health department would also be interested in using homes with previous EBLL children as another targeting technique for code enforcement. The health department would ID these homes.

Other Observations

There is no communication between the health department/lead program and code enforcement. There is some collaboration between the environmental health program and codes, but this has not extended to lead. One area of current collaboration between these programs is in garbage disposal and sewage.

Mark Washington, the City Manager, is very focused on results and optimization.

The city is currently working on a “health in all policies” agenda.

Meeting Two: December 18, 2018 – Advisory Committee Meeting

There are 3,000-4,000 rental inspections in the city per year.

City properties are split roughly 50/50, rental and owner.

The rental inspection schedules are two, four, or six years. Two years are for bad actors; four years are for those with some violations. They are currently in the second round of the single-family certifications which usually get six years; they only began including single-family properties in 2012.

Meeting Three: April 16, 2019 – Code Officials Meeting

Attendees included:

Connie Bohatch, Managing Director of Community Services
Eric Jordan, Code Compliance Manager
David Jacobs, Chief Scientist, National Center for Healthy Housing
Sarah Goodwin, Policy Analyst, National Center for Healthy Housing

Notes

- The city currently uses \$1.4 million a year of CDBG money for code enforcement. Community development, housing rehab, and codes are all in the same service group.
- The current code assumes lead hazards for deteriorated paint.
- They work on proactive education in coordination with industry partners.

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- Single-family registrations were only passed in 2012, and they're still seeing resistance to that program. This concerns code officials that additional changes will see a lot of pushback from landlords in the city.