

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

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

by

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for the

**Michigan Department of Health and Human Services,
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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: ChamgeLab Solutions. Retrieved May 23, 2019, from https://changelabsolutions.org/sites/default/files/Up-tp-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

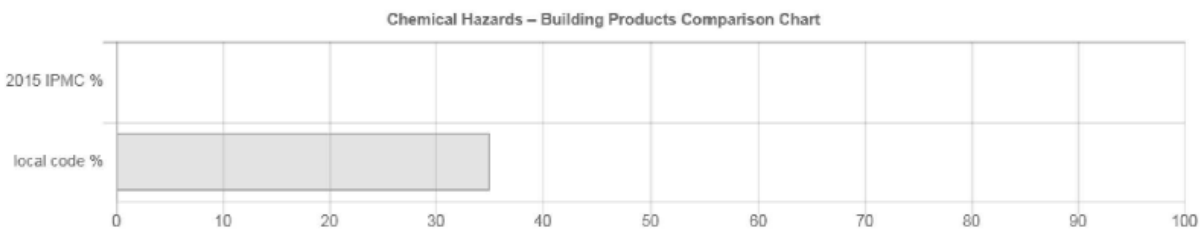
Significant Opportunities for Improvement. Your responses indicate your community may benefit by being more protective of health in this area. You can review the National Healthy Housing Standard (NHHS) provisions in this area – NHHS Provisions (7.3, 7.3.2) to explore ways to improve your code. Consider 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 begin enforcing rental registration again. City of Flint staff anticipated that the ordinance would be adopted in the coming weeks or months.