

The Role of Public Health Inspectors in Maintaining Housing in Northern and Rural Communities: Recommendations to Support Public Health Practice

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ABSTRACT

Objective: Although there is much evidence about the effects of particular housing conditions on health, less is known about the practices of public health inspectors (PHIs) in relation to minimizing or eliminating potential housing health risks. The purpose of this qualitative study was to illuminate the practices of PHIs in relation to types of biological and physical housing risks.

Method: This study used photo vignettes to focus on PHIs' perceptions, options, and resultant interventions with regards to typical housing risks encountered by PHIs in northeastern Ontario. The vignettes represented two general categories of potential housing risks: biological exposures, and physical characteristics of housing. During a semi-structured interview, 34 PHI participants viewed the vignettes, assessed the housing hazard depicted in each, and described the most appropriate intervention. Traditional content analysis methods were used.

Results: The assessment of the physical housing hazards was fairly consistent among the PHIs. There seemed to be more variation in their assessment of risk associated with biological factors. Variation in responses was often explained by their different interpretations of the scope of the provincial legislation as well as local public health unit policies and practices.

Conclusion: This study demonstrated that PHIs' assessment and responses to potential physical housing hazards were influenced by an interplay between variables related to residents, local service partners, organizational culture, and policy. The recommendations for action also range from specific public health unit protocol to broader research and policy advocacy initiatives. Collectively, the recommendations focus on strategies for optimizing the role of PHIs in reducing housing health risks in mid-size urban or rural areas.

Key words: Housing; environmental health; health hazards; public health; rural health

La traduction du résumé se trouve à la fin de l'article.

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The health risks associated with physical housing conditions are abundant in the health literature.¹⁻⁶ Less well known, however, is the role of Public Health Inspectors (PHIs) in improving and maintaining housing, particularly in northern and rural communities. Only a few studies were found about inspectors' challenging role responsibilities in relation to protecting residents from housing-related health threats.⁷⁻¹⁰ This gap in knowledge makes it difficult to: 1) clearly identify the role of PHIs in housing-related health risk assessment and management; 2) understand the dynamics of interventions and policies relative to the assessment and management of reported physical housing conditions; and 3) recommend ways to optimize the role of PHIs in reducing health risks associated with physical housing conditions.

The Ontario Public Health Standards (OPHS)¹¹ is a key document describing the roles and responsibilities of PHIs. PHIs have legislative authority under the Health Protection and Promotion Act (HPPA).¹² This legislation directs Boards of Health regarding the organization and delivery of public health programs and services, the prevention and control of disease, and the promotion and protection of the health of the people of Ontario. Of particular relevance in relation to the duties of PHIs, a health hazard – as defined by the HPPA – refers to:

- a) a condition of a given premises, b) a substance, thing, plant or animal other than man, or c) a solid, liquid, gas or combination of any of these, that is likely to have an adverse effect on the health of any person.¹²

The purpose of this qualitative study was to describe the practices of northeastern Ontario PHIs in relation to potential physical housing hazards. The study's research questions were:

1. What are PHIs' assessments of the more common housing health hazard complaints received from residents in northeastern Ontario?
2. As a result, in their perceived context of practice, what are PHIs' current and proposed interventions?

METHODS

This study follows an earlier participatory action project that involved homeless or precariously housed persons using cameras to take images representing their housing situations.¹³ Dissemination of the image findings resulted in PHIs' identification of strategies for change, beginning with increased community awareness of PHIs' role. To explore the views, processes and practical issues of

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Table 1. Descriptive Characteristics of the Four Study Sites

Variable	Site 1	Site 2	Site 3	Site 4
Population	192,400	122,800	116,300	84,200
Land area (square kms)	46,500	16,800	44,300	266,290
Dwellings requiring major repairs (%)	9	10	8	9
Owned dwellings spending >30% of income on shelter*	3935	2669	2571	1708
Rented dwellings spending >30% of income on shelter*	3090	1797	1785	1273
Median income – All private households	\$52,839.00	\$46,430.00	\$47,305.00	\$53,777.00
LICO (before tax) – All persons (%)	12	14	13	12

* In Site 1, individuals in 7% of owned dwellings and 13% of rented dwellings were spending more than 30% of income on shelter. Given the similarities between the four sites in the percentage of individuals below LICO, Site 1 proportions were used to estimate the percentage of dwellings spending more than 30% of income on shelter for the other three sites.

PHIs, this study used a qualitative descriptive design, guided by community-based participatory action research principles.^{14,15} During the entire project, the study’s Advisory Committee of PHIs provided invaluable comments, suggestions and reflections grounded in their extensive experiential public health knowledge. The project was approved by the research ethics boards of Laurentian University and the Sudbury & District Health Unit.

The setting for the study was four environmental health departments in northeastern Ontario, with a combined population of 555,691.¹⁶ Respecting the socio-economic landscapes of each community (Table 1), each department contributes to sustaining healthy housing conditions for vulnerable populations in their respective communities. Convenience sampling was used to recruit PHIs from an approximate total sample size of 50 eligible PHIs. A professional acquaintance between some of the researchers and the research site provided “a level of access to and familiarity with the sample that guarantees a richness of data that could not be attained if the sample was less familiar”.¹⁷ Inclusion criteria specified that participants would be English-speaking PHIs who had two or more years of experience with environmental housing issues. In Ontario, educational requirements for PHIs include completion of a degree program plus a 12-week practicum. In addition, PHIs must hold a Certificate of Public Health Inspection (Canada), as granted by the Canadian Institute of Public Health Inspectors. To facilitate recruitment, a study information session became an agenda item of the department’s scheduled meeting. Following a brief slide presentation, PHIs were invited to ask questions and, if willing to participate, return the consent forms with their signature. All PHIs who met eligibility criteria and returned signed consent forms were accepted as study participants.

Data collection involved a vignette-based, audio-taped interview with each participant. Such an approach is suitable for assessing complex situations and intervention decisions as it focuses participants on specific scenarios, and thereby permits consistency and comparison within and across data.¹⁸ Further, the Advisory Committee endorsed this style of data collection as interventions of PHIs are often situation-dependent. In consultation with the Advisory Committee, images from the earlier study were selected in response to the question, “what pictures capture the housing conditions commonly encountered by PHIs?” The selected picture sets – five in total – were grouped into two general categories of housing hazards: biological exposures (mould and infestation), and physical characteristics of housing (structural, sewage/flood, and sanitation).³ Figure 1 illustrates a biological exposure and Figure 2 shows a sanitation hazard. Each pictorial set served as a vignette, a standardized representation of a potential ‘problem-posing event’¹⁴ for the purpose of eliciting participants’ practice decisions. A trained

Figure 1. Example of biological exposure

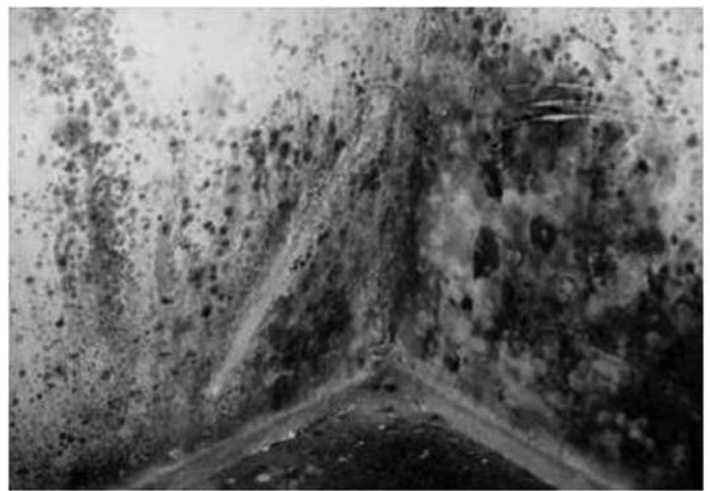


Figure 2. Example of sanitation hazard



interviewer presented each of the five sets of pictures in a sequential fashion with a participant. Participants were asked to identify and define the housing hazard from their perspective as a PHI. Next, the interviewer asked participants to describe the most relevant interventions in response to the stated hazard. Each interview concluded with participants being asked to provide information related to work experience (e.g., number of years worked, the type of activities performed, and if he or she worked mostly in an urban community or a rural one).

Table 2. Assessment of Health Risks by PHIs

Type of Health Hazard	Common Descriptive Category	Associated Interventions	
Biological a) Mould	Health risk associated with housing structural issues and contributing to respiratory illness	Referral to municipal bylaw or property standards officials	
	Variability as to whether mould constitutes health hazard as per public health guidelines and legislation	Education and advice to tenants and landlords	
	Underlying cause of infestation perceived to be either structural or due to resident behaviours		
b) Infestation	Vermin viewed as potential “disease vector” with impact on broader public health		
	Insects	A psychological impact for resident is common	
Physical a) Structural	Increased risk of injury, fire, electrical hazards and personal safety/security	Referral to various stakeholders such as municipal bylaw or property standards officials, fire/electrical authorities and in some situations, police in situations affecting personal safety/security	
	b) Sewage/Flood	Identified risks included contaminated ground water, bacterial growth, spread of disease	Enforced remediation as per public health legislation (HPPA)
		Potential impact on broader public health Relocation of tenants	Information and referral to remediation supports
c) Sanitation	Increased risk of mental or physical health issues affecting residents’ ability to care for self Involvement of family members	Referral to community supports and social services (mental health; home care)	

Each recorded interview was transcribed and with the assistance of NVivo (Version 7) was coded. Using traditional content analysis methods,^{19,20} two independent researchers began with open coding for each type of hazard. The next level of analysis was the identification of patterns across biological and physical categories of housing risks. For trustworthiness, a coder was required to keep a detailed record of her coding decisions. To enhance credibility of the findings, the researchers met at least three times to discuss their preliminary understanding of the findings before meeting with the advisory committee for refinement of content categories. Aside from clarity of category terminology, there were no major inconsistencies in the coding scheme.

RESULTS

The PHIs

A total of 34 PHIs participated in the study, approximately 68% of the total eligible sample size. As a group, their mean number of years as a public health inspector was 16. During their careers, several worked in varied locations, within and outside of Ontario. Most participants identified a wide variety of activities and functions that comprised their “typical day.” One study site estimated that approximately one third of PHI time devoted to addressing health hazard complaints consisted of promoting the maintenance of healthy housing. In addition to responding to housing concerns expressed by residents, PHIs reported being involved in other public health program areas such as water systems, inspections of restaurants and other premises, food safety and public outbreak investigations. While the majority of the PHIs stated that they currently worked in an “urban” area, many had experience working in both urban and rural settings.

Housing health hazards

The most frequently assessed risks in each of the two areas of housing hazards are presented in Table 2. The participants identified the most common physical hazards as structural, sewage/flood and sanitation. These three hazards were linked to broader resident and housing health concerns. The most frequent biological exposures

were mould and infestation. PHIs attributed the cause of many housing hazards to structural housing issues.

The proposed interventions in response to each of the three physical housing hazards were fairly consistent (Table 2). Irrespective of the type of hazard, PHIs often referred to other health, social or safety agencies or provided information to the resident. There was variation with regard to how PHIs intervened with biological exposures, more specifically mould. This was partly related to their conceptualization of mould as a health hazard. PHIs described educational interventions as their typical response to biological hazards. Preceding PHI interventions, however, is a complex decision-making process shaped by the PHI’s perceived context of practice. Their context consisted of political, organizational, community, social, and personal influences that, at times, were incongruent. Each of these influences is described below.

Political processes

“I don’t know if you’re aware of the definition of a health hazard but it’s so wide that you could walk an elephant through it.”

The most frequently identified and most influential factor influencing PHIs’ responses to housing issues was related to the uncertainty of how or when to deem an issue a health hazard as per the HPPA. Most PHIs defined health hazard as the extent to which a health issue affects the general population, as opposed to the health of an individual. Their interpretation of the legislation, however, seemed to differ with respect to certain risks, most prominently mould. PHIs frequently reported that existing legislation and guidelines do not clearly or adequately define their role with regard to housing risks. Further, they identified frustration related to their perceived lack of ability to intervene and work to effectively resolve housing-related complaints. Specifically, even when conditions were deemed unhealthy, they reported that they were sometimes reluctant to intervene or issue “orders” for remediation due to the lack of clear legislation to support them and, ultimately, to avoid potential liability issues.

In relation to their scope of practice, several participants referenced the HPPA,¹² which defines a housing health hazard as a risk affecting the ‘general population.’ In the case where the property

in question is owned rather than rented, PHIs perceived their practice scope as being constrained. PHIs' "work setting" was generally beyond the boundaries of the property or single dwelling, as in the case of sewage leakage into adjacent dwellings. Even when immediate health risks to the resident were identified, PHIs reported that they are influenced by accepted norms and values such as the view that: "a man's home is his castle," and "everyone has the right to live as they choose." This was frequently identified as a conflict between wanting to help and not having the appropriate authority, especially in cases involving people with health conditions that affected their capacity to care for themselves adequately.

Organizational and community processes

"We can offer advice and we can consult with people and help them that way, but in terms of enforcement, we really can't get involved, which is a shame."

Many PHIs referred to internal public health unit policies and practices that guided their decision-making and ability to respond to housing-related complaints. Most significantly, some identified the challenges associated with completing assessments over the telephone, as is common practice in some health units. In their assessment of the images, it was not uncommon for them to comment that they "needed more information." PHIs explained that thorough assessments, and the associated recommendations, seemed to depend on a great deal of sensory (for example, olfactory) as well as contextual information. They also commented, however, on the limited capacity (human resources, funding) to undertake in-person assessments of every housing complaint. As one participant stated,

"I mean, we're just, we just got our heads above water now or are trying to and keeping up with what's going on. If we're given more work to do it will tax that ability to respond appropriately."

The need for effective and efficient partnerships was highlighted by the majority of participants. As a PHI stated,

"...so you look to an agency you feel has a stronger, more specific mandate so that not only can they take the issue on but they can be successful with the issue and close it."

With respect to addressing housing hazards, these partnerships took a variety of forms. Positive relationships with referral agencies and municipal bylaw and property standards officials were seen to facilitate resolution of resident complaints. In contrast, in absence of these working relationships, residents were seen to be at risk of "falling through the cracks," or getting "bounced around" between community agencies and service providers. Collaborations between community agencies – such as public health, social services, mental health, and municipalities – were viewed as especially necessary to achieving optimal outcomes for vulnerable residents and populations. PHIs identified the benefit of being able to leverage the skills, mandates and authority of a variety of agencies as they worked towards improved health for residents and housing conditions within their communities. As one inspector explained, "It's a lot of having good contacts. Knowing where to go."

In relation to their geographical location, many PHIs stated that there were fewer services and supports and, as a result, fewer potential partners with whom they could collaborate to address housing risks, especially in unorganized territories. Unorganized territories are not incorporated as municipalities and therefore have no local government in place that can establish and enforce bylaws. As a result, one of the most common interventions conducted by PHIs in response to

housing issues – referral to bylaw/property standards officials – is not available to PHIs working in this context. For example, a PHI stated,

"So 90% of what we deal with up here, although there's very little population in there, there's no governing body other than the province, so we're not dealing with ... the building code because there's nobody there to enforce it ... It all falls back on us."

While seen as a challenge by some, other participants viewed this absence of municipal governance as providing them with more autonomy to implement interventions.

Vulnerable populations

"I'm sure there are a lot of people that we don't even get calls from that just live with these situations because they don't know any different. And they think that it must be normal, and I don't think that it should be normal. But it's a sad state of the world that we live in that for some people it is."

Many PHIs reported that the conditions represented in the photo vignettes were more likely to involve and affect vulnerable populations such as the elderly, the poor or those with chronic physical or mental illness. The tenants' housing circumstances frequently motivated PHIs to resolve the issue in question. Power differentials both between landlords and tenants, and between tenants, landlords and public health inspectors, could impede mutual problem resolution. For example, several PHIs reported that tenants were often reluctant to make complaints about their housing for fear of landlord retribution/eviction. Specifically related to interventions of PHIs, several noted that their decision to order a premises evacuated and closed was frequently influenced by the ability of tenants to find alternate shelter. Several PHIs expressed concern for those experiencing poor housing conditions. As one PHI stated,

"I don't think anybody should have to live in these types of conditions. I don't care what socio-economic status you are. I don't think anybody deserves those types of conditions. It's not fair."

Professional and personal commitment

"I mean as a group of PHIs we go way above and beyond sometimes to take care of these problems."

PHIs consistently demonstrated problem-solving skills and commitment to resolving residents' issues. In many instances where PHIs perceived issues to be beyond their scope, as defined by legislation or health unit policy, they expressed dissatisfaction and frustration with their lack of ability to act and enforce remediation. As a result, they frequently shared experiences in which they had gone "above and beyond" the expectations of their job. This sometimes involved working extra hours in order to connect residents with appropriate referrals and resources. PHIs also indicated that some circumstances required extensive and "creative" negotiations. This approach was typically endorsed by PHIs' respective health units and seen as a way to resolve housing issues without resorting to "orders" that may not be adequately supported by the public health legislation. PHIs' reluctance to issue orders in these cases was in part influenced by the knowledge that, if "called on it," precedent would be set and their future practice would be further limited.

DISCUSSION

These study findings explore problem solving relative to housing health hazards commonly identified in the population health literature.^{3,5} Overall, the findings highlight the combination of political,

organizational, community and personal issues influencing PHIs' assessment of potential housing health hazards. Notable among these influences was the challenge of addressing housing risks for residents disadvantaged by their socio-economic status or geographic isolation. This finding is consistent with the multiple pathways between physical housing, socio-economic and health variables outlined by Dunn.² For some participants in this study, the two-dimensional nature of the picture sets limited their understanding of the "problem-posing event." This was reflected by their qualifying contextual statements preceding a detailed response. Further study using multiple methods can further expand PHIs' strategies of prevention and protection in relation to home health hazards.

The assessment of the physical characteristics of housing tended to be consistent, while that of biological hazards showed more variation. In many cases, referral to or consultation with community partners was a necessary intervention. Variation in responses was often explained by differing interpretations of the scope of the provincial legislation as well as local public health unit policy and practice. These policy-related issues are consistent with those that have been previously identified by environmental health practitioners in other jurisdictions, such as England.¹⁷ The success of these interventions was in large part determined by the working relationships between partners and the clarity of respective roles. The ability to refer and to collaborate was further limited in unorganized territories, where few services exist.

Findings suggest nine recommendations ranging from specific public health unit practice to broader research and policy advocacy initiatives that would help to optimize the role of PHIs in reducing physical and biological housing hazards. Related to the political processes identified by PHI participants are the following:

1. Develop public health guidance documents that clarify the role of public health inspectors in relation to housing issues.
 2. Develop and adopt tools to standardize the assessment of housing factors that mediate the relationship between housing and population health.
- PHI-identified issues related to vulnerable populations and professional and personal commitment suggest the need to:
3. Develop post-secondary curricula related to factors that mediate the housing-population health relationship and related public health interventions.
 4. Provide ongoing staff development and training to support public health inspectors working to resolve housing-related issues.
- Related to the organizational and community processes identified by PHI participants, recommendations include:
5. Ensure that organizational priority is given to the development and fostering of partnerships and communication between community stakeholders.
 6. Increase the availability of provincial supports provided to residents of unorganized territories.
- Additional research team recommendations related to ongoing involvement and monitoring of PHIs in housing-related issues include:
7. Evaluate the support that Boards of Health and Medical Officers of Health provide for the involvement of PHIs in advocacy related to the social and economic conditions that impact on housing and health.
 8. Implement surveillance and purposeful reporting of housing indicators to monitor trends and evaluate the effectiveness of interventions.

9. Conduct further research to identify best practices related to public health interventions to improve and maintain housing.

In conclusion, it is critically important that knowledge be built in this area through a research program. This study has demonstrated that assessing and intervening in potentially hazardous housing situations present many complexities and require a will on the part of multiple sectors and jurisdictions to act in concert. Studies such as this provide some compelling evidence to support actions, particularly related to PHI practice, that could help move this agenda forward.

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RÉSUMÉ

Objectif : Les preuves des effets de certaines conditions de logement sur la santé abondent, mais on en sait moins sur les pratiques des inspecteurs en santé publique (ISP) qui peuvent réduire ou éliminer les risques sanitaires potentiels des logements. Notre étude qualitative visait à éclairer les pratiques des ISP à l'égard des types de risques biologiques et physiques liés aux logements.

Méthode : À l'aide de vignettes photographiques, nous avons étudié les perceptions des ISP, leurs options et les interventions qui en résultent en ce qui a trait aux risques typiquement rencontrés dans les logements du Nord-Est de l'Ontario. Les vignettes représentaient deux grandes catégories de risques possibles dans les logements : les risques biologiques et les caractéristiques physiques du logement. Au cours d'un entretien semi-structuré, 34 ISP participants ont étudié les vignettes, évalué le risque présenté, puis décrit l'intervention la plus appropriée. Nous avons analysé le contenu de ces entretiens par les méthodes classiques.

Résultats : L'évaluation des dangers physiques des logements a été sensiblement la même d'un ISP à l'autre. Il semble y avoir plus d'écarts dans leur évaluation du risque associé aux facteurs biologiques. Les différences dans les interventions proposées s'expliquent souvent par leurs interprétations différentes de la portée des lois provinciales, et des politiques et des pratiques des bureaux de santé publique locaux.

Conclusion : L'étude démontre que les évaluations par les ISP et les interventions qu'ils proposent pour contrer les dangers physiques possibles dans les logements sont influencées par l'action réciproque de variables liées aux résidents, aux partenaires locaux dispensateurs de services, à la culture organisationnelle et aux politiques. Les mesures qu'ils recommandent varient aussi, allant de protocoles précis pour un bureau de santé publique à de vastes initiatives de recherche et de défense des politiques. Collectivement, les recommandations mettent l'accent sur des stratégies pour optimiser le rôle des ISP en vue de réduire les risques sanitaires des logements dans les agglomérations urbaines de taille moyenne et les régions rurales.

Mots clés : logement; santé environnementale; dangers pour la santé; santé publique; santé en zone rurale

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