



Affordable Housing & Wellness Planning for the Greater Des Moines of Tomorrow

by Claire Richmond



November 28, 2014

The MPH Practicum Experience 170:299



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A silhouette of a city skyline with various buildings and trees, rendered in shades of orange and purple, positioned at the bottom of the page.

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Abstract

The aim of this project was to emphasize health in a long-range plan for housing in Greater Des Moines. This project piggybacked on the Polk County Housing Trust Fund's (PCHTF) planning efforts to obtain community perceptions on housing-related issues for Housing Tomorrow (HT), the region's first plan for affordable housing (The Tomorrow Plan, 2014). Using secondary data and responses to key interviews, this project produced a survey tool designed to collect specialized health data related to housing in Greater Des Moines. This project fulfilled requirements of a planning capstone through its strategic approach to public participation and emphasis on advocacy planning. Additionally, its focus on population health and consideration of social determinants as risk factors met the requirements of a public health capstone.

Background

Introduction to The Polk County Housing Trust Fund

The PCHTF plans, advocates, funds, and educates the public on issues related to affordable housing in the communities that make up Greater Des Moines. Involvement in HT actively supports the organization's vision to ensure that housing is affordable, safe, and stable for all residents (Polk County Housing Trust Fund, 2014).

HT was derived from recommendations made in The Tomorrow Plan (TTP), a long-range regional plan spearheaded by the Des Moines Area Metropolitan Planning Organization and funded by The U.S. Department of Housing and Urban Development (HUD). TTP stressed the improvement of housing conditions as a top priority for the future growth and health of the region (Tomorrow Plan Steering Committee, 2013). In-depth knowledge of housing on a local level was necessary in order to address the issue in depth, and PCHTF had the expertise to do so.

HT will use a planning process that includes public input from surveys and focus groups to refine goals and objectives for housing. Additional direction will be provided by a steering committee consisting of community members from a variety of backgrounds, who all share an interest in housing. When completed, HT will act as a guide to address regional housing challenges, and help residents overcome barriers to stability and affordability.

Housing as a Public Health Concern

Housing is a social determinant of health and presents public health with a multi-faceted problem. Urban planning's roots are in public health from the dawn of the 20th century, when tenement housing reform helped prevent the spread of infectious disease in vulnerable populations. Certainly, an individual's home environment has the ability to heal or exacerbate illness (Vale, 2009).

Traditional public health approaches address the environment of a living space, such as air quality, unsafe or deficient structures, and sanitation. Each of these risk factors contributes to health outcomes, but there is more to the story of housing's impact on health than simply environmental factors. Recent studies have identified additional aspects of housing associated with health and wellbeing.

Risk factors related to housing include the inability to pay for necessities due to high rent or mortgage payments; crowding, defined as two or more individuals per bedroom; frequent moves, defined as two or more moves in a 12-month period, and environment concerns, such as lead paint, mold, and allergens (Krieger & Higgins, 2002). HUD considers households that pay more than 30 percent of their income for housing to be housing cost-burdened (U.S. Department of Housing and Urban Development., 2014). Households experience such as these experience difficulties affording necessities such as food, clothing, transportation, and medical care, all of which affect various health outcomes.

Affordability

The affordability of housing is a determinant for mental health concerns, such as anxiety, depression, and sleep deprivation, which can become chronic conditions. High rent and mortgage cost is also a barrier for healthy decision-making because the funds remaining after those monthly payments may prevent the practice of healthy behaviors, such as purchasing fresh foods or pursuing medical needs (March et al., 2011).

Crowding

Crowding is associated with both infectious disease and mental health. Two or more individuals in a single bedroom increases the likelihood of unsanitary conditions that produce allergens, such as dust mites, and may contribute to infestation of lice, cockroaches, or rodents (Burton, Weich, Blanchard, & Prince, 2005). Crowding

may also strain already deficient structures, such as heating and cooling systems, and create dangerous electrical problems. Recent research shows that families living in crowded spaces are also more at risk for food insecurities and child malnutrition (Cutts et al., 2011).

Frequent Moving

Two or more moves in one year contribute to feelings of instability that are associated with mental wellbeing. Frequent moves, particularly those involving long distances, break apart social networks, which serve as a protective element of health (Heaney & Israel, 2002). This issue impacts children in particular, because housing instability can manifest in both short and long-term effects. Children who endure frequent moves suffer in school, and are more likely to exhibit behavioral problems. As they grow up, these children are at increased risk for developing chronic illness as a result of prolonged anxiety and lack of social support (Cutts et al., 2011).

Environmental Factors

Environmental risk factors that exist in housing refer to toxins in the air and building materials. For instance, smoke, mold, and dust mites can trigger asthma in children and adults (Rauh, Landrigan, & Claudio, 2008). Other environmental health aspects are those that develop as a result of unsafe or deficient structures. In 1978, the use of lead in paint was banned, but it remains a common concern in older housing. The ingestion of lead causes neurological disorders and is of particular concern to children under age six. Other deficient structures include leaky roofs and pipes that lead to the growth of mold, and cracks in the foundation that could result in elevated levels of cancer-causing radon (Krieger & Higgins, 2002)

Significance of Risk Factors in Greater Des Moines

Two risk factors that emerged as most prevalent in Greater Des Moines are affordability and environmental. In order to realize the significance of these determinants, it is critical to understand the region's population projections and shifting demographic make up. Polk County is home to more than 450,000 people, or 14.6 percent of the state's population, giving it the largest population of any Iowa county. The population of Greater Des Moines increased by 36.8 percent over the last twenty years, which is substantially higher than the growth of Iowa, at 9.7 percent, or that of the U.S., at 24.1 percent (United States Census Bureau, 2014). Additionally, non-white populations grew from 12.2 percent in 1990 to 29.5 percent in 2010 (U.S. Census Bureau, 2010).

Affordability

Greater Des Moines is regarded as generally affordable, yet the rate of housing cost-burdened households grew from 21.9 percent in 1990 to 29 percent in 2010 (ACS 2006-2010 5-Year Estimates, 2010; U.S. Census Bureau, 1992). Furthermore, 11.4 percent of households are reported to be extremely housing-cost burdened, meaning 50 percent or more of household income is used towards housing payments. In 2010, 23.1 percent of homeowners, and 43.5 percent of renters were reportedly housing cost burdened in Polk County (ACS 2006-2010 5-Year Estimates, 2010).

Average median income (AMI) for Polk County is \$57,942, which is higher than statewide rates of \$50,997 (U.S. Census Bureau, 2010). Households with incomes between 50 and 80 percent of AMI are considered low-income, those with incomes between 30 and 50 percent of AMI are considered very low-income, and those with incomes less than 30 percent of AMI are considered extremely low-income (ELI). This final group is most likely to become homeless and is of particular concern.

Polk County's supply of affordable housing indicates does not match the needs of the community. For instance, for 13,784 ELI households, there are only 6,224 units priced at 30 percent AMI or lower. Figure 1 displays data on Complicating matters further, 55 percent of ELI households are in need of one-person efficiencies, which only make up 14 percent of units. Figure 2 displays data on ELI households by size and appropriately affordable units.

Currently in Polk County, ELI renters pay an average of \$626 per month, or 67 percent of their household income (American Community Survey, 2011).

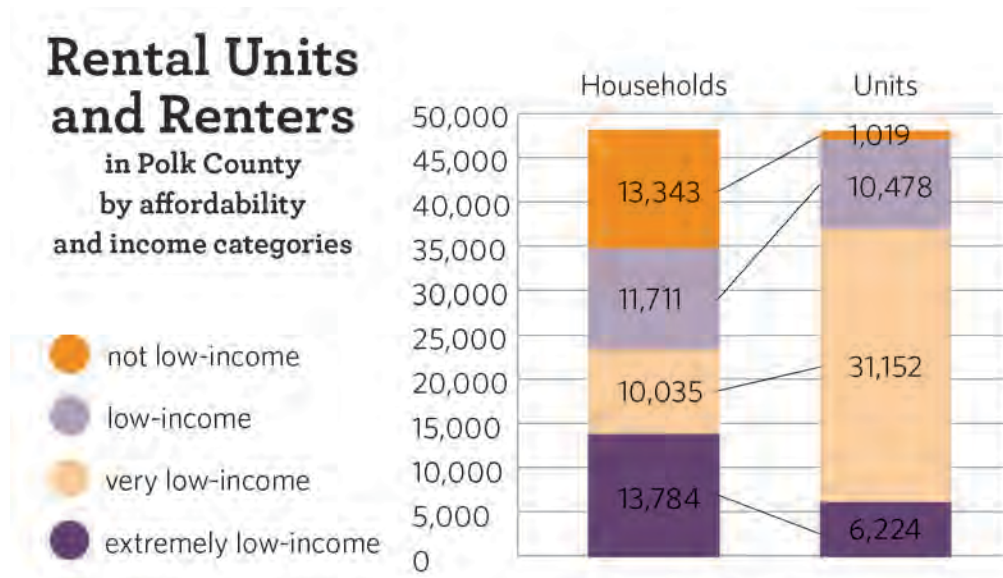


Figure 1. Source: American Community Survey, 2011

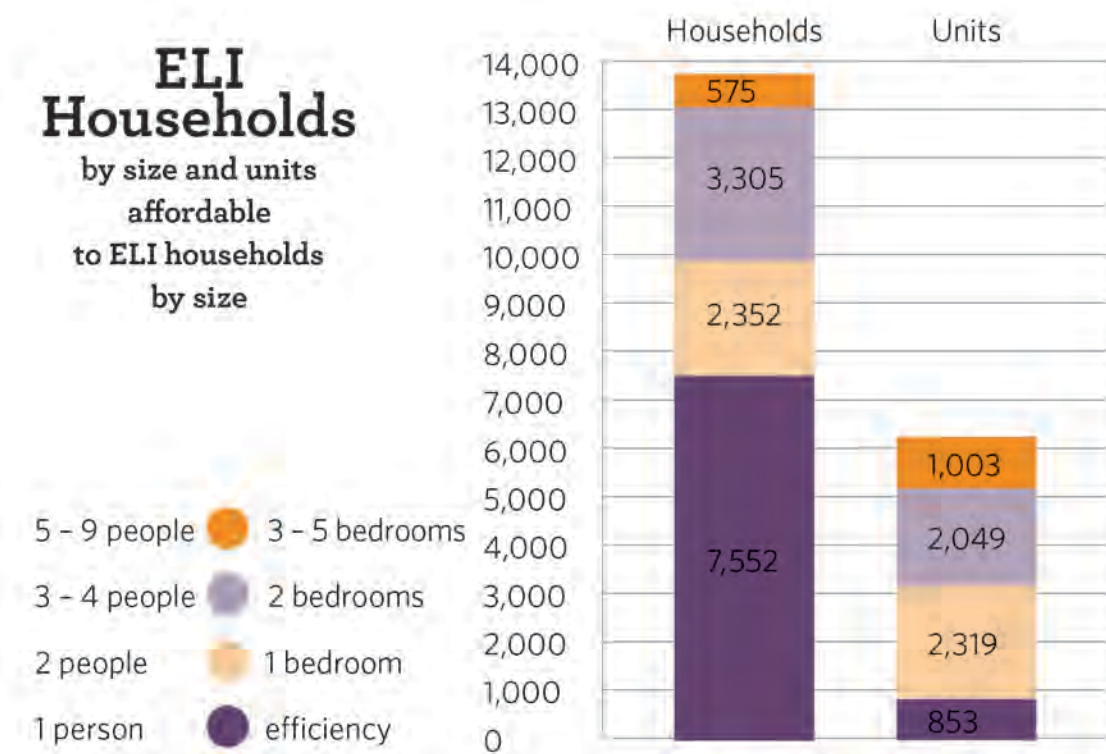


Figure 2. Source: American Community Survey, 2011

Housing instabilities can impact well-being and contribute to poor mental health, which can be disruptive to an individual's mood, thoughts, daily functioning, and ability to relate to others. State mental health rates are measured by the number of "mentally unhealthy" days in a month. Iowans overall reported five mentally unhealthy days on average since 2009. However, over 7 percent of the state reported 14 or more mentally unhealthy days in the previous month (Child and Family Policy Center, 2013).

Environmental Factors

Prevalence of housing-related environmental health issues can be seen in local efforts of lead abatement, and in asthma rates. The Bureau of Lead Poisoning Prevention at the Iowa Department of Public Health follows the U.S. Environmental Protection Agency's issued rules for renovation, which targets buildings occupied by children (Iowa Department of Public Health, 2014a). Elevated blood-lead levels in children were 1.7 percent in Polk County, compared to 3.7 percent in Iowa (Child and Family Policy Center, 2013).

Asthma hospitalization data can be a direct reflection of living situation. While it is expected that rates for children ages 5 - 14 would be the highest of any age group because they are most susceptible, higher hospitalization rates in Polk County could indicate increased exposure to poor air quality (Iowa Department of Public Health, 2014b). Table 1 displays county and statewide hospitalization rates for Polk County.

2014 Asthma Hospitalization Rates for Polk County, Iowa

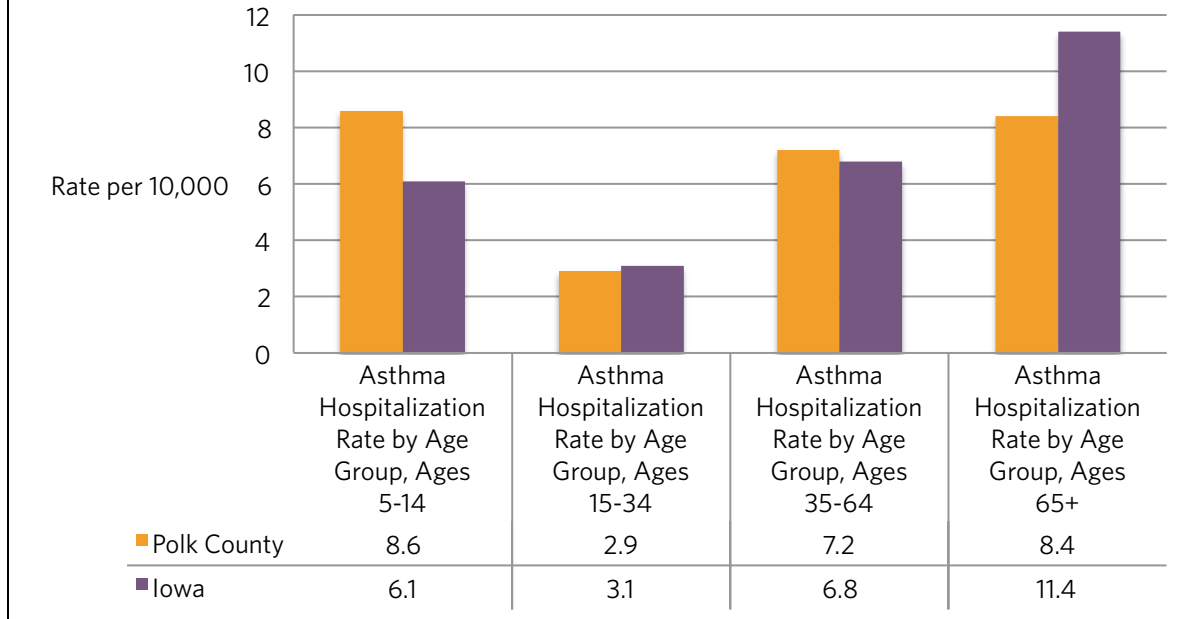


Table 1. Source: IDPH Tracking

Process

Development of a Housing Survey

The HT planning process included public meetings and a survey targeted to the general public. Public participation efforts began with community conversations at planned focus groups and events. Next, an introductory housing affordability survey was written using Textizen, a texting-based software program that allows anyone with a texting plan to complete the survey using a cell phone. The survey produced quantitative data and required a sample of 600 to be representative of Polk County's population at a 95 percent confidence level. Participants could be easily targeted in the future for follow-up surveys, including one focusing on health-related issues, which involved my project. Significant efforts were focused on the marketing and design of a campaign that would strongly urge community members to partake in the survey. The survey was disseminated using flyers in local businesses, posters on city buses, and a strategic, direct mail campaign.

Development of a Health Survey

For me, this project started with an analysis of existing research. First, I used case studies to develop an understanding the epidemiology of housing-related health outcomes common to homes in the U.S. Next, I was able to develop a scope of the risk factors present in Polk County by comparing local demographic, housing, socioeconomic, and health outcome data compared to statewide rates. Finally, I reviewed regional documents, including the most recent analysis of impediments to fair housing, TTP, and a 2012 housing study (RDG Planning & Design, Gruen Gruen + Associates, 2013; Rongerude & Department of Community and Regional Planning Iowa State University, 2012; Tomorrow Plan Steering Committee, 2013). Information from these sources allowed me to develop a list of relevant and strategic questions that would best be answered by community members with direct experience (see Appendix A).

I conducted eight total interviews over the phone, four with public health professionals, and four with planners. I wanted to know which health conditions were impacted by housing, which population groups in the community were most vulnerable, the prevalence of risk factors, and actions that could address these concerns. I then analyzed the qualitative data and was able to extrapolate trends, providing a basis for questions that the PCHTF will use to collect quantitative data in their community questionnaire.

I chose interviewing as a data collection tool because I had limited time and could conduct interviews over the phone. While focus groups may have provided an increased amount of information, they require face-to-face contact and specialized skills in facilitation. As it was, I believed the varied backgrounds of my interviewees provided rich data on the topic. Approval from the Institutional Review Board was deemed unnecessary by the University of Iowa Office of Human Subjects because I was not seeking identifiable or generalizable information on health outcomes(Williams, 2014).

Discussion

My Role

A bulk of my graduate research involved unhealthy environments and the less visible, social determinants of health. Last semester, my interest in public health as it related to planning settled on issues of housing. I had

difficulty in brainstorming ideas for my practicum project because there was little active collaboration between planning and public health entities. However, the PCHTF seemed eager to utilize health concerns to shape the goals of HT. I brought a health focus, interviewing skills, and knowledge of marketing campaigns and building brands to this practicum project.

I initially identified my role to be primarily a public health consultant, but soon realized my skills-set made me uniquely qualified. My goal was to produce health-related survey questions, but I had an interest in the successful dissemination of the initial housing affordability survey because I needed those participants for my follow-up.

My marketing background proved useful, and I found myself working alongside the PCHTF policy and communications coordinator as we developed a strategic approach to community engagement. After running into a number of obstacles, outlined later in this paper, we shifted gears towards the end of the semester, and worked together to assemble a comprehensive questionnaire for web-based delivery.

Barriers

My practicum proposal outlined three objectives: to conduct a literature review, to develop and use a survey tool, and to create a report of findings and next steps. However, mid-way into the semester it became clear to me that these three objectives were not realistic in the amount of time I had to complete the project. Response rates of the texting-based housing affordability survey were low. Despite a strategic, professionally designed communications campaign to push out the survey instructions, we had not received enough data to represent a statistically significant portion of the population, particularly if the health survey targeted only a portion of those responses. A month before my report was due, I revised the last two objectives to accommodate a response delay, and reflect my new priority, which was to obtain increased amounts of qualitative data from interviews. My second objective then became “to collect data from key stakeholders interviews”, and the survey tool was pushed back to my project’s final objective, the deliverable.

Failure of housing affordability survey required PCHTF to readdress its approach to public participation. The texting-based platform was not working as hoped. Instead of providing an outlet for individuals without Internet

access to voice their opinion, the survey raised concerns about privacy issues because it required texting to an unknown phone number. The issue was discussed at the November HT meeting, and members of the steering committee decided an online platform would be the best solution. This would provide a link for sharing over email, on websites, and through social media campaigns. By this time, my health survey questions were finalized and ready to be included in a longer, more comprehensive set of questions. The follow-up surveys on Textizen will not be pursued due to its ineffectiveness, and fears of data duplication.

I experienced additional barriers through the interview process, such as misinterpretation of what was asked, and the need for flexibility in the evolution of my questions. More than one individual used my interview as an avenue to air out criticisms of ways in which the City of Des Moines was handling affordable housing and how it impacted their jobs. While this unintended surge of information did not prove particularly useful for me, it gave me valuable experience in handling the frustration that surrounds many planning issues.

Personal Assessment

A Planning Approach

The planning approach of HT uses several constructs of planning theory. Elements of rational planning are seen in the attempt to assign scientific methodology to HT by using data to form goals and create action steps. HT is a form of advocacy planning because of its priority to address issues experienced by disenfranchised populations that cannot afford the housing market of Greater Des Moines. Communication planning is clearly emphasized in marketing campaigns that shifted with audience response, or lack thereof (Brooks, 2002).

A Public Health Approach

Public health models and theory provided guidance for the development of a survey tool. Constructs of community-building theory were employed through seeking input from key, influential stakeholders in Greater Des Moines. Additionally, the theory stresses the importance of active community participation surrounding health and social problems. The health belief model was used in crafting the marketing message of severity and cues to action (Glanz, Rimer, & Viswanath, 2008). Originally, advertisements read: "Hey, Central Iowa! Do you pay too much for housing?" (see Appendix B.) But after a test run, feedback indicated the general public

perceived our survey as related to mortgage refinancing or a related service. The message was then converted into one that communicated self-efficacy: "Text now. Improve housing in Central Iowa forever." (See Appendix C.)

Public Health Competencies

I experienced numerous public health competencies through work on my project and the time I spent collaborating with community professionals. I incorporated all of the competencies stated in my proposal, although some proved central to the project and looked different in practice.

E. 1. Social and Behavioral Sciences: Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice.

Constructs of community-building theory served as a guide for creating strategies that reached underprivileged populations through influential community members and public engagement. The health belief model provided insight into reframing the survey's marketing message to one that presented emphasized self-efficacy rather than susceptibility to high housing costs. Additionally, the ecological model presented perspectives from various levels of the population I would not have otherwise considered.

E.3. Identify individual, organizational and community concerns, assets, resources, and deficits for social and behavioral science interventions and populations.

From the beginning of this project, it was clear the PCHTF emphasized this core competency. HT will be the product of a collaborative effort of community planning. The individuals and organizations represented on the steering committee increase access to community resources that will enhance the plan's development. Partnerships with community groups that have high levels of civic engagement in Greater Des Moines, such as the Polk County Public Health department and AARP's Iowa office, will ensure participation of targeted populations.

F. 7. Communication and Informatics: Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities.

Effective communication skills were paramount to this project. I worked remotely for the duration of this project and email correspondence with preceptors and interview subjects required clear writing skills. Effective oral communication was necessary when conducting interviews, particularly because accurate interpretation of responses is necessary for effective qualitative analysis.

F. 8. Communication and Informatics: Use information technology to access, evaluate, and interpret public health data.

Public health data was collected using Textizen, a technology that provided participants with a local phone number to which they could text answers to housing affordability questions. Textizen had the ability to target participants in future surveys, which would allow researchers to focus questions on population groups and would result in layers of overlapping data. Responses were stored in an online database and displayed visibly through charts and graphs. The PCHTF also used Constant Contact to share the link of their long-form survey through an emarketing campaign.

G. 5. Diversity and Culture: Use the basic concepts and skills involved in culturally appropriate community engagement and empowerment with diverse communities.

Basic skills and concepts of cultural competency were used in survey development, such as the choice of words and distribution to appropriate outlets. The text-based platform itself was chosen through cultural consideration of Internet availability among demographic groups. The PCHTF established a presence at several diverse community events in an effort to reach a representative sample of the population and also provided the option of survey questions in Spanish.

G. 7. Differentiate among availability, acceptability, and accessibility of health care across diverse populations.

Location of affordable housing in relation to health care facilities is a risk factor for poor health and was revealed to be a concern among interviewees. Proximity of providers to residences can be measured using existing data, but health-related survey questions seek to identify issues regarding the acceptability and accessibility of health care across local neighborhoods and in diverse populations.

Results

The results presented in this report were derived from qualitative interview data and provide insight into concerns specific to Greater Des Moines. Planning professionals interviewed included a housing planner for the City of Des Moines, the director of a home repair program for elderly, and the director and a program manager of a transitional housing program. Public health professionals interviewed included a public health professional from the Polk County Public Health Department, the program director for lead abatement, a healthcare coordinator for the homeless, and a social services planner for physically and mentally disabled. See Figure 3 for a list of interviewees by expertise. Collected data were limited to the opinions of the interviewees' scope of housing-related issues, but provide a valuable basis for the development of survey questions to the general public.

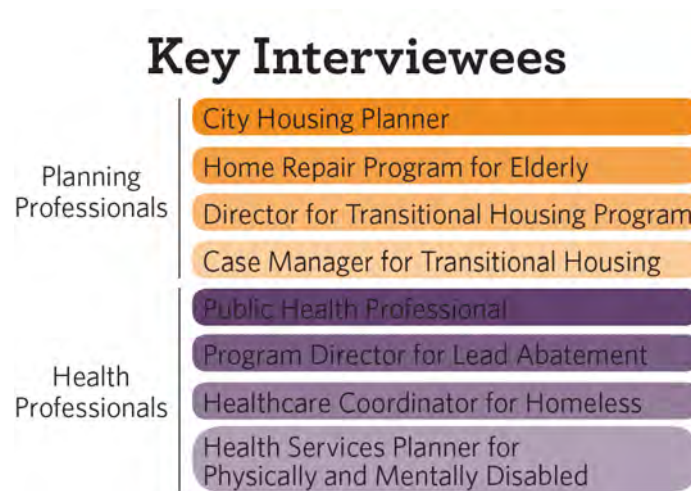


Figure 3.

Top Responses

Interviewees unanimously agreed that the health condition most impacted by housing in Greater Des Moines is stress and mental health, particularly related to economic aspects and feelings of safety. Pests, pride of home, and accessibility to jobs and stable employment were also associated with mental health. More than one interviewee indicated severe housing instability in association with sleep deprivation, situational depression, and increased anxiety in children. Figure 4 shows a full list of health conditions responses by interviewee.

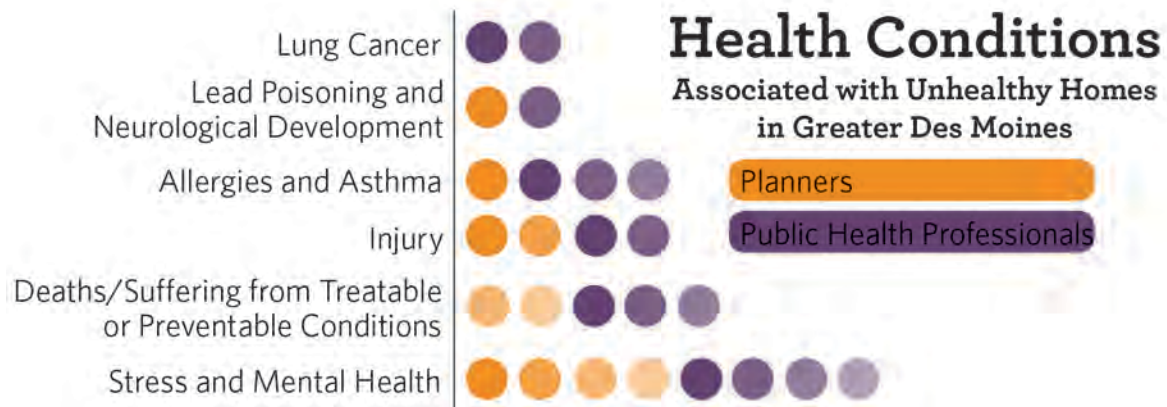


Figure 3.

The other top response was death and suffering from preventable or treatable conditions. In some cases, this referred to availability and access to medical care, which can be both unaffordable and not located nearby these residential units. Specific environmental health concerns mentioned were lead poisoning from lead-based paint, and asthma from poor air quality, pests, and mold. Figure 5 displays words frequently used in response to health conditions influenced by housing.

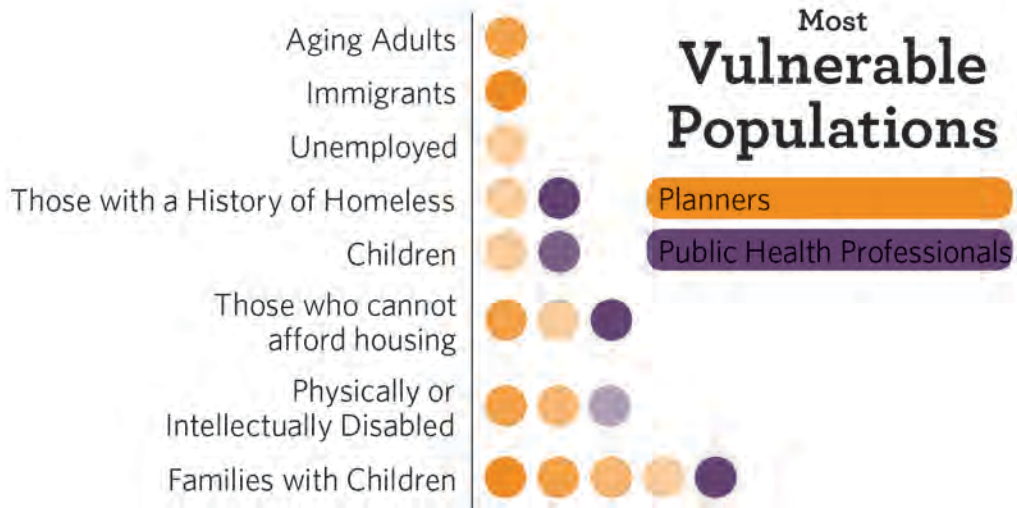


Figure 5

The most prevalent risk factor of housing was affordability; a concern shared by planning and health professionals alike. A close second included environmental health concerns, specifically unsanitary conditions that lead to bedbugs and other pests, and lead-based paint. Poor plumbing that produces mold, and the lack of radon mitigation systems were also important environmental health concerns. Underlying all risk factors was landlord neglect and non-compliance with rental property regulations. Figure 7 displays a full list of reported risk factors by interviewee.

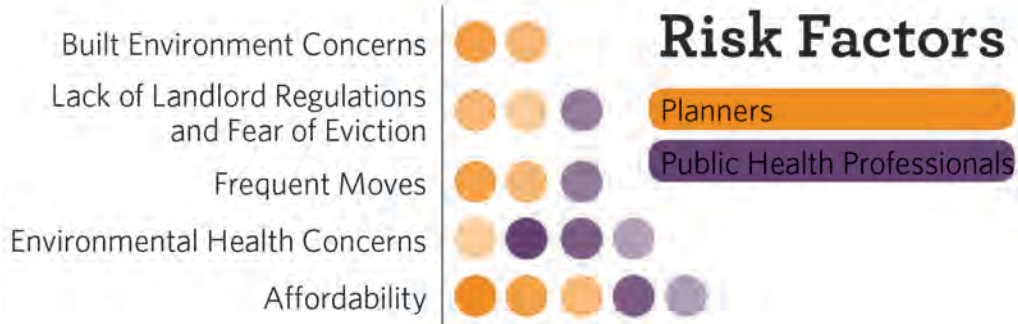


Figure 6

Each interviewee had ideas for approaches to improve the housing situation in Greater Des Moines. The most common proposed solutions included an increase to the supply of housing priced at 30 percent AMI and below, and scattered placement of affordable housing. Inclusionary zoning and environmental health regulations in new

question to measure overall perception of health asked participants to agree or disagree with the following statement: My home contributes to my health and well-being.

Demographic information relevant to measuring risk factors for housing included household makeup and age. One of the final two survey questions asked for details about living situations, which referred primarily to the family dynamics within a household, such as “single parent with child or children”, “live alone”, or “live with another adult or adults”. The last question asked participants to choose their age range.

Conclusion

Results of this project illustrate a clear point: there is not enough housing available for ELI to afford monthly payments, and maintain good health. Developing units for 30 percent AMI and under is expensive and investors will not get the same return as fair market. Currently, low-income housing tax credits are used to address affordable housing in Greater Des Moines, but only serve a portion of the population, households between 50 and 80 percent AMI. On top of that, dwelling units that have been historically more affordable in the urban core now present the city with higher end redevelopment opportunities that will expand their property tax base.

Potential Solutions

Several interviewees suggested inclusionary zoning as a potential solution. Inclusionary zoning is an ordinance used by local authorities that requires a portion of new developments be low to moderate income. Developers are not likely to practice inclusionary zoning unless it is a requirement, and in order for inclusionary zoning to be effective in Greater Des Moines, it must be done on a regional level (Hellyer, 2014).

Buy-in for this and similar solutions will be a challenge for the implementation of HT, and perhaps the biggest being misconceptions of affordable housing. The general public, may think affordable housing is important, but do not want it near their home. An educational component and marketing campaign humanizes occupants of affordable housing have successfully confronted negative community perceptions in the past. PCHTF has already begun this effort by launching the “Can I be your neighbor?” campaign (See Appendix F).

Anticipated Outcomes

Health-specific survey questions produced by this project contributed to a long-form questionnaire targeted to the Greater Des Moines community (see Appendix E). In addition to affordability and health, the questionnaire will measure desired housing type and location preferences, as well as additional demographic information. It will be distributed by the PCHTF and Housing Tomorrow Steering Committee via email and the Internet in early December 2014.

Determining the housing needs of the Greater Des Moines community is important, but it is only a piece of the problem. Individuals who grow up in substandard housing may lack an understanding of what is unsafe or deficient, they may accept living conditions to the detriment of their health. Additionally, they may lack the resources or knowledge to maintain and make minor repairs to a property, which may lead to major problems in the future. As affordable housing units age, special attention will be required for them to remain safe. Regulations and annual inspections may be able to address some of issues, but a regional educational campaign may be a way to start promoting health and safety within homes. Social workers in the community could also be trained to spot risk factors.

Health in planning has gained recent popularity, and conversations about active transportation, walkable cities, and healthy places are increasing nationwide. Healthy community design is a new priority of the American Planning Association, thanks to a grant from the Centers for Disease Control and Prevention that provides funding for state and local planning initiatives (American Planning Association, 2014). This trend is consistent with the priorities of various planning entities in Greater Des Moines. In fact, collaborative efforts have already led to the formation of interdisciplinary coalitions focused on health in all policies. The recent uptick of local long-range planning goals and reports indicate the community has started preparations for conversations and big changes. This project will insert health into the ground floor of the region's first affordable housing plan. It will ensure that decisions for the housing of tomorrow are guided by the health of Central Iowans.

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Appendix A.

Date _____ Time _____ Name _____

Agency _____ Position _____

Thanks for your willingness to speak with me today. As an introduction, I wanted to review my purpose in conducting this interview. I am a University of Iowa public health and urban planning graduate student, working with the Polk County Housing Trust Fund for my practicum project. As the agency seeks public input for Housing Tomorrow, the regional plan for affordable housing, I am helping collect information on perceptions of housing's impact on health in the Greater Des Moines area.

Housing Tomorrow grew out of housing-specific data reported by the Tomorrow Plan, and its goal is to create a regional plan to provide housing that is affordable to all who wish to live in Greater Des Moines. Goals of the Housing Tomorrow plan are to increase workforce housing, provide the area with alternate housing options that are affordable, and develop policy that addresses housing concerns on a regional level.

Any information you provide me today will be used to develop survey questions to be answered by the general public. Responses will not be identified individually.

Questions.

1. Tell me about any housing conditions that impact health that you have encountered through your professional experience.

Follow Up- In what ways have those conditions impacted health?

2. In order to better obtain information from impacted populations, in your opinion, what is the most vulnerable population impacted by this issue in the area?

3. Risk factors for health concerns related to housing include the inability to pay for necessities due to high rent or mortgage payments, crowding (2 or more individuals per bedroom), frequent moves (2 or more times in a 12-month period), and environment concerns (such as lead paint, mold, and allergens). Are there any additional issues you see prevalent in Greater Des Moines housing?

4. What actions do you see as the most practical and cost-effective to address risk factors?

5. As previously stated, the goals of the Housing Tomorrow plan are to increase workforce housing, provide the area with alternate housing options that are affordable, and develop policy that addresses housing concerns on a regional level. What do you think Greater Des Moines can do to best achieve these goals?

6. Is there anything else you would like to add? Thank you again for your time.

Appendix B.



Hey Central Iowa!

Do you pay too much for housing?



**Text YES or NO to:
515-512-5033**

Housing Tomorrow is made possible by the generous support of:



COMMUNITY FOUNDATION
GREATER DES MOINES

POLK COUNTY
LEARNING THE WAY

LIVE UNITED
United Way
United Way of Central Iowa

Appendix C.

The advertisement is split into two main sections. The left section features a photograph of a large, multi-story brick apartment building with many windows, set against a clear blue sky and green trees. Overlaid on this image is the text: "Text now. Improve housing in Central Iowa forever." in a white, sans-serif font. The right section has a solid orange background at the top with the text: "Text START to: 515-512-5033 to take a quick survey." Below this, there is a logo for "HOUSING TOMORROW" which includes a colorful geometric design and the tagline "Creating for a Smarter, Greener, Des Moines". Underneath the logo is the text "POWERED BY" followed by the "Textizen" logo. On the far right, there is an illustration of a hand holding a purple flip phone. The phone's screen displays the number "515-512-5033" and the word "YES" in large, bold letters.

Appendix D.

Health Survey Questions:

Do you worry about any of the following issues related to your home (check all that apply):

- A) Affordability of payments or repairs
- B) Safety of your neighborhood
- C) Proximity to jobs
- D) Unhealthy or unsanitary conditions

Does your home contain any of the following (check all that apply):

- a. steep stairway with no railings
- b. lack of handicap accessibility
- c. lead paint
- d. inadequate electrical
- e. leaky roof
- f. leaky pipes or poor plumbing
- g. poor heating and cooling
- h. poor insulation
- i. radon
- j. bed bugs
- k. cockroaches
- l. lice
- m. rodents
- n. termites
- o. other

In the last year, have you had trouble paying for any of the following (check all that apply):

- A) rent or mortgage
- B) utilities
- C) healthcare, doctor's visits, or prescriptions
- D) home maintenance and repairs
- E) daily needs, such as food
- F) Other: please list

Agree or disagree: my home contributes to my health and well-being.

Please choose the option that best describes your current living situation:

- Single parent with child or children
- Live with adult and child or children
- Live alone
- Live with another adult or adults
- Live with elderly parent

Please indicate your age:

- Under 18 years old
- 18 - 24 years old
- 25 - 34 years old
- 35 - 44 years old
- 45 - 54 years old
- 55 - 64 years old
- 75 years or older

Appendix E.

1. What type of home do you currently live in?
 - a. Single-family detached house
 - b. Duplex or townhome
 - c. Apartment or condo
 - d. Mobile home
 - e. Other (what type?)

2. What type of home would you prefer to live in, regardless of cost?
 - a. Single-family detached house
 - b. Duplex or townhome
 - c. Apartment or condo
 - d. Mobile home
 - e. Other (what type?)

3. Do you feel that you are paying too much for housing? Y/N

4. Do you make sacrifices to pay for your home? [Select all that apply.]
 - a. No, I am able to afford all I need.
 - b. Yes, I cut back on food, medical care, or other necessities.
 - c. Yes, I share a home with family or friends to make ends meet.
 - d. Yes, I live in an unsafe or undesirable neighborhood because it is within my budget.
 - e. Yes, I commute long distances to a home I can afford.
 - f. Other

5. In the last year, have you had trouble paying for any of the following (check all that apply):
 - G) rent or mortgage
 - H) utilities
 - I) healthcare, doctor's visits, or prescriptions
 - J) home maintenance and repairs
 - K) daily needs, such as food
 - L) Other: please list

6. How would you describe finding safe and affordable housing in our area?
 - a. Easy
 - b. Somewhat easy
 - c. Somewhat difficult
 - d. Difficult

7. Do you think housing in Greater Des Moines is affordable to our area's workers? Y/N

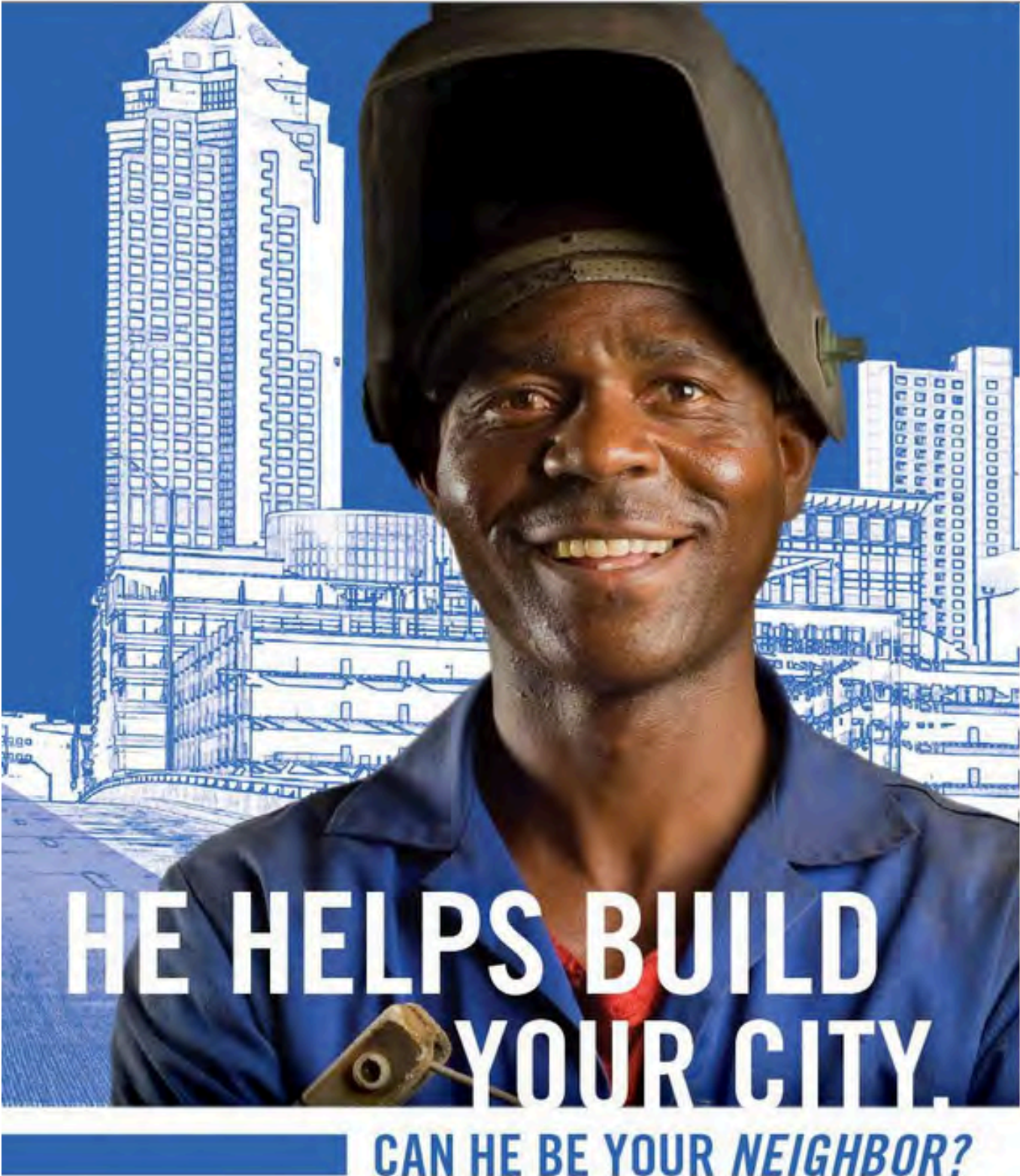
8. Are you satisfied with your current housing situation? [Select all that apply.]
 - a. Yes, my housing is adequate for my needs.
 - b. No, it is in need of maintenance.
 - c. No, it is too small for my needs.
 - d. No, it is located too far from work or other amenities.
 - e. No, it is in an unsafe or undesirable neighborhood.
 - f. Other

9. How many times have you moved to a new dwelling in the past twelve months?
 - a. I have not moved in the past year
 - b. I have moved once

- c. I have moved multiple times (how many?)
10. Do you expect to move in the next six months? Y/N
11. Do you worry about any of the following issues related to your home (check all that apply):
- a. Affordability of payments or repairs
 - b. Safety of your neighborhood
 - c. Proximity to jobs
 - d. Unhealthy or unsanitary conditions
12. Does your home contain any of the following (check all that apply):
- a. steep stairway with no railings
 - b. lack of handicap accessibility
 - c. lead paint
 - d. inadequate electrical
 - e. other
 - f. leaky roof
 - g. leaky pipes or poor plumbing
 - h. poor heating and cooling
 - i. poor insulation
 - j. radon
 - k. bed bugs
 - l. cockroaches
 - m. lice
 - n. rodents
 - o. termites
 - p. other
13. Agree or disagree: my home contributes to my health and well-being.
Please explain:
14. Are you currently employed?
- a. Yes, full-time
 - b. Yes, part-time
 - c. No, but I am looking for work
 - d. No, and I am not looking for work
15. If employed full- or part-time: How much time do you spend daily traveling between home and work?
- a. 0-20 minutes
 - b. 20-40 minutes
 - c. 40 minutes to an hour
 - d. More than an hour
16. If employed full- or part-time: In what city is your workplace? [open response?]
17. If employed full- or part-time: Do you feel that your commute is too long? Y/N
18. If yes: Why don't you live closer to your work?
- e. Personal choices
 - a. Work area unsafe or undesirable
 - b. Work area has poor schools
 - c. Work area lacks housing

- d. Housing in work area unaffordable
19. How much did your household earn before taxes last month?
- a. \$0-1,000
 - b. \$1,000-2,000
 - c. \$2,000-3,000
 - d. \$3,000-4,000
 - e. Over \$4,000
20. How much did your household spend on housing last month?
- a. \$0-300
 - b. \$300-600
 - c. \$600-900
 - d. \$900-1,200
 - e. Over \$1,200
21. Do you rent your housing? Y/N
22. What is your zip code?
23. What is your age?
- f. Less than 18 years
 - g. 18-24
 - h. 25-39
 - i. 40-54
 - j. 55 years and older
24. Were you born in the United States? Y/N
25. What is your race? [Select all that apply.]
- k. White
 - l. Black
 - m. American Indian or Alaska Native
 - n. Asian or Pacific Islander
 - o. Hispanic or Latino
 - p. Other

Appendix F.



2014 Asthma Hospitalization Rates for Polk County, Iowa

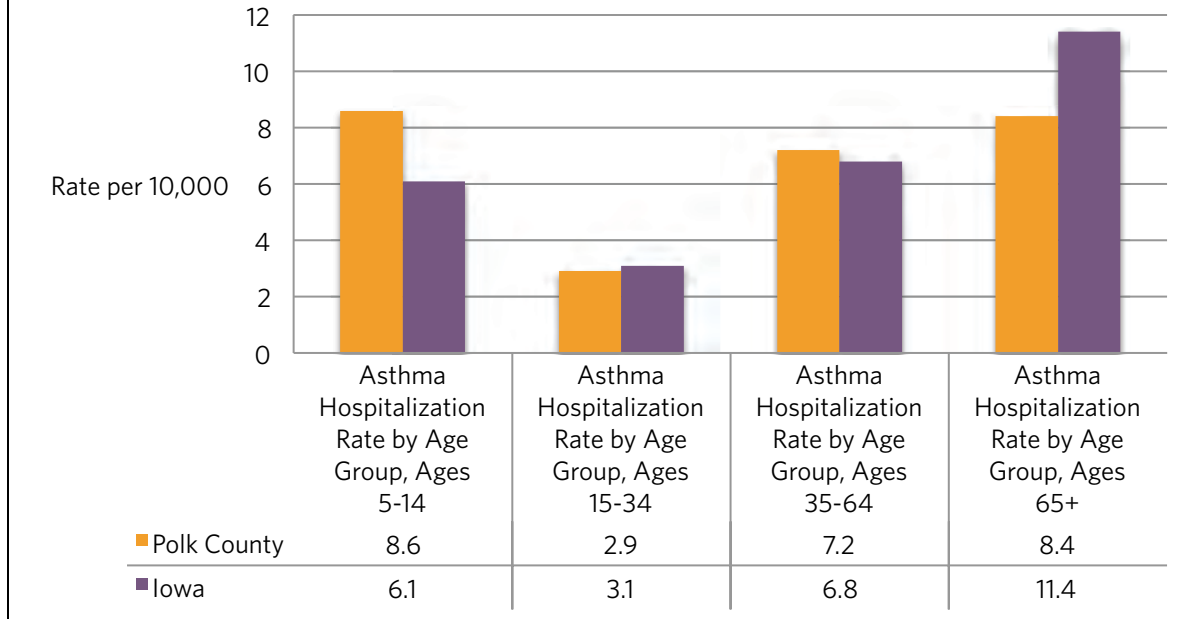


Table 1. Source: IDPH Tracking

Process

Development of a Housing Survey

The HT planning process included public meetings and a survey targeted to the general public. Public participation efforts began with community conversations at planned focus groups and events. Next, an introductory housing affordability survey was written using Textizen, a texting-based software program that allows anyone with a texting plan to complete the survey using a cell phone. The survey produced quantitative data and required a sample of 600 to be representative of Polk County's population at a 95 percent confidence level. Participants could be easily targeted in the future for follow-up surveys, including one focusing on health-related issues, which involved my project. Significant efforts were focused on the marketing and design of a campaign that would strongly urge community members to partake in the survey. The survey was disseminated using flyers in local businesses, posters on city buses, and a strategic, direct mail campaign.

2014 Asthma Hospitalization Rates for Polk County, Iowa

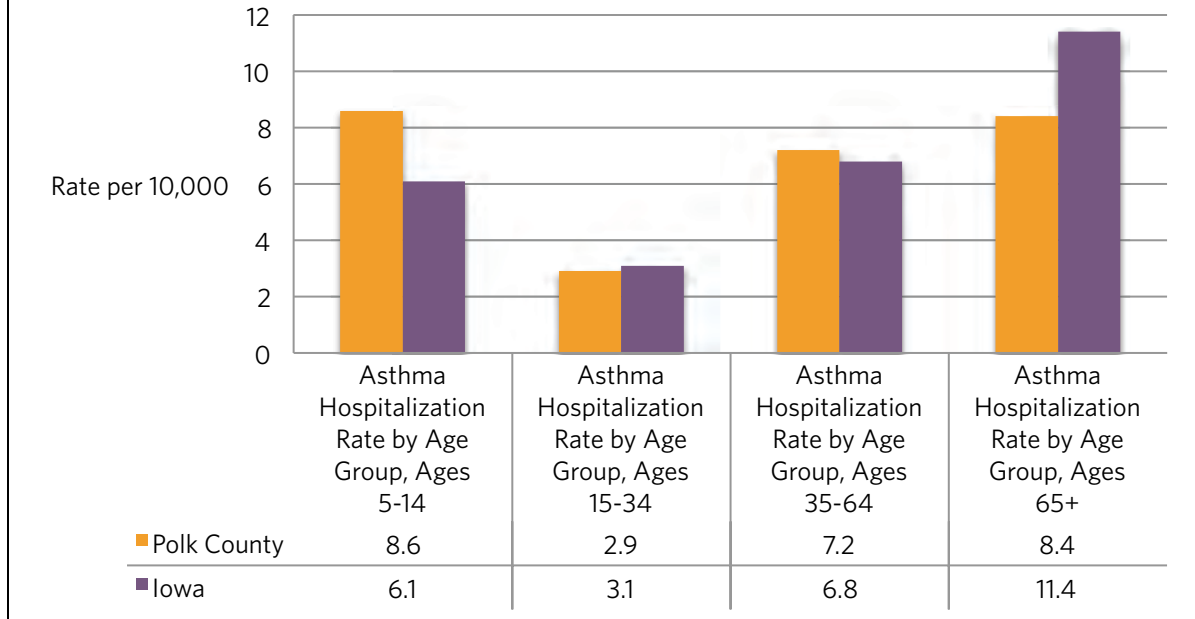


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