

Effectiveness and Impact of the National Healthy Homes Partnership on Occupant Health



Dr. Pamela R. Turner
Associate Professor &
Extension Housing
Specialist
University of Georgia



Mr. Michael Goldschmidt
National Director – Healthy
Homes Partnership & Associate
Teaching Professor
University of Missouri

Dr. Kandace L. Fisher, University of Missouri, USA, fisherkl@missouri.edu

Abstract:

It is important to translate healthy housing research into real-time action steps that people can take to improve their indoor environment. The Healthy Homes Partnership does this by uniting the efforts of Cooperative Extension professionals at eight universities in the United States. Cooperative Extension is an outreach arm of land-grant universities to provide the public with evidence-based information that can help them make informed decisions.

For the last fifteen years the Healthy Homes Partnership has assisted individuals, families, and professionals using a variety of tools, including publications and curricula that addressed mould, safe drinking water, lead poisoning, pests, pesticides and chemicals, carbon monoxide poisoning, radon, and other toxins. The educational toolkit incorporates eight principles of healthy housing (dry, clean, maintained, safe, ventilated, pest-free, contaminant-free, and green) that are widely recognized across federal agencies and national organizations.

Using a variety of outreach methods, including programs, exhibits, and media (broadcast, print and social), between September 1, 2014 and November 30, 2015 we had 9,617 direct contacts and 2,000,838 indirect contacts. Effective programming requires an understanding of the audiences, potential barriers, and different tools that can be used to reach them. Increasingly, people are going online for information. With so much information online, it is critical that we provide sources for trustworthy information on healthy housing.

In this paper the authors discuss the effectiveness of this comprehensive approach, the different methods of relaying healthy housing research, and provide short, intermediate, and long-term impacts.

Keywords: Healthy housing, indoor environment, occupant health



Turner, P. DOI: <http://dx.doi.org/10.4225/50/58107a61878df>

HealthyHousing2016: Proceedings of the 7th International Conference on Energy and Environment of Residential Buildings, November 2016, edited by Miller, W., Susilawati, C. and Manley, K. Brisbane: Queensland University of Technology, Australia. DOI: <http://dx.doi.org/10.4225/50/58107c8eb9c71>

1. Introduction / Purpose

The place we call home and the type of house we live in effects our health and well-being. A house impacts health on three levels - affordability, neighbourhood conditions, and the physical condition of the house (Braveman, et al, 2011). The linkage between health and housing is not new. In the mid-19th century, physicians were advocating for decent housing as a way to reduce death and illness among the poor (Krieger and Higgins, 2002; Garb, 2003). Research supports the link between stable, decent and affordable housing and positive health outcomes (Maqbool, Viveiros & Ault, 2015). A recent study examined the health effects of housing quality, stability, affordability, ownership and subsidy receipt (Coley, Leventhal, Lynch & Kull, 2013). The researchers reported that poor housing quality was a strong predictor of emotional and behavioural problems in low-income children and youth.

When affordable housing options are limited, households can end up living in a substandard or poorly maintained housing. They may also live in older houses with lead-based paint and lead in the plumbing (Maqbool, Viveiros & Ault, 2015). In these houses, occupants are more likely to be exposed to health hazards such as lead poisoning, mould, and pests. Lead poisoning is a concern for people of all ages, but especially young children. The U.S. Centers for Disease Control and Prevention (CDC) estimates that in the U.S. over 500,000 children between one and five years of age have elevated blood lead levels (CDC, 2016). Exposure to household environmental contaminants like indoor dampness, mould and cockroaches is associated with asthma in children (Kanchongkittiphon, et al, 2015). In the U.S., asthma affects over 20 million adults (7.4%) and children (8.6%), and is the most common chronic disease among children (U.S. Department of Health and Human Services, 2016a & 2016b).

In 2009, the U.S. Surgeon General issued a call to action to promote healthy homes (U.S. Department of Health and Human Services, 2009). The definition of a healthy home is one that "...is sited, designed, built, renovated and maintained in ways that support the health of residents" (US Department of Health and Human Services, p. 3, 2009). The call to action outlines a comprehensive and coordinated approach to addressing health and housing that will result in the greatest impact. Four goals were put forth.

Goal 1: Ensure healthy, safe, affordable, and accessible homes

Goal 2: Increase public awareness and promote health literacy

Goal 3: Conduct healthy homes research

Goal 4: Translate research into practice and policy

The Healthy Homes Partnership (HHP) is an excellent resource to use to help reach these goals. It is a public outreach education program that addresses housing deficiencies and risks associated with indoor environmental issues related to occupant health. This unique partnership takes a holistic approach to healthy housing, addressing health and safety issues such as indoor air quality, lead poisoning, home maintenance, mould, water quality, household pests, radon, and home energy. The HHP was formed in 1999 through an interagency agreement between the U.S. Department of Agriculture National Institute of Food and Agriculture (USDA-NIFA) and the U.S. Department of Housing and Urban Development (HUD) (Booth & Peek, 2013). The goal of the HHP is to provide information and education to the public on reducing housing deficiencies and risks associated with childhood diseases and injuries (USDA-NIFA, 2016). The outreach activities of Extension assist with implementation of Goal four – *Educate the public about healthy homes* – of the federal strategy for action on healthy housing that was put forth in 2003 (U.S. Department of Housing & Urban Development, 2013).

In this paper the authors evaluate the effectiveness of the HHP's approach to providing healthy housing research and information to the public, and discuss some of the short, intermediate, and long-term impacts.

2. Methodology / Approach

2.1 Extension and the National HHP

Participation in the HHP is limited to the 107 land-grant colleges and universities that engage in research, teaching, and extension or outreach (Booth & Peek, 2013). The outreach mission is met through the Cooperative Extension System (Extension), which delivers research-based information to the public. Extension has provided non-formal education and learning opportunities since 1914. Extension is found in each of the land grant universities or colleges in the 50 states, the District of Columbia, 6 territories, 19 historically Black institutions, and 31 tribal colleges (Association of Public and Land Grant Universities, 2012). The outreach structure varies in each state or territory, but generally there are regional or county Extension educators who translate science into practical application, so people can make informed decisions.

Extension was selected as the outreach mechanism because of the long-standing history of effectively delivering healthy housing programs for low-resource audiences (Booth & Peek, 2013). From the beginning, the HHP maintained a holistic approach to healthy housing programming. Over the past 16 years, HHP has worked through the Extension delivery system, reaching over 17.5 million consumers, training more than 25,000 professionals, and developing hundreds of resources for the public. In addition to increasing knowledge, changes in behaviour have occurred. In 2010 over 16,000 homes were tested for radon and 1,164 households reduced the level of radon in their home (Booth & Peek, 2013). In addition, over 14,000 people reduced their exposure to lead in their homes, about 9,000 households installed carbon monoxide alarms, 719 households “poison-proofed” their homes, and 619 households added smoke detectors. Since 2010, the HHP has developed a more unified approach to demonstrating impact that includes an educational curriculum for all of the partners to use.

2.2 The National HHP Curriculum

The educational curriculum – Healthy Home Solutions – was developed around the principles of a healthy home. There are seven widely recognized principles of keeping a home healthy that were set forth by the National Center for Healthy Housing (NCHH) and an eighth principle that was added in recent years by the U.S. Department of Housing and Urban Development (HUD) (NCHH, 2008; HUD, 2016). The eight ways to keep a home healthy are to keep it:

- Dry – Control moisture to reduce mould, dust mites, cockroaches and rodents, which are associated with asthma.
- Clean – Eliminate clutter and clean regularly to help reduce pest infestations and exposure to contaminants.
- Pest-free – Keep pests like cockroaches and mice out of the house.
- Safe – Protect adults and children from falls and accidental poisoning.
- Contaminant-free – Reduce exposure by smoking outside, testing for radon gas, installing a carbon monoxide detector, safely removing lead paint, and selecting low-toxicity household pesticides and cleaning products.
- Ventilated – Increase the fresh air supply and change air filters regularly.
- Maintained – Regularly monitor the condition of the house and make repairs.
- Thermally Controlled – Maintain comfortable or adequate temperatures to reduce risk from exposure to extreme cold or heat.

The eighth principle encompasses energy efficiency, which is an important component of healthy housing for low-resource audiences. Findings from a recent study, indicate that low-income households (income at or below 80 percent of area median income) who lived in older houses with poor ventilation, and aging appliances and heating systems, spent 7.2 percent of their income on utility bills, which is more than three times the 2.3 percent paid by higher income households

(Drehobl, A. & Ross, L., 2016). Energy efficiency and healthy housing principles are key factors in green building strategies. A tighter building envelope with adequate ventilation reduces energy use and exposure to indoor contaminants (Beatley, 2011).

2.3 Method of Program Delivery

The Healthy Home Solutions curriculum includes educational presentations, speaker notes, lesson plans and evaluations. State partners use this curriculum as a foundation for conducting healthy housing programs and outreach activities. Effective programming requires an understanding of the audiences, potential barriers, and different tools that can be used to reach them. Extension has a history of providing programs for both rural and urban audiences. Historically face-to-face Extension programs have been used to disseminate information to the public in both urban and rural communities. It was, and still is, an effective way to deliver findings from research at the universities to the public.

Healthy housing information is also delivered through broadcast, print and social media outlets. As personal time constraints increase and technology continues to improve, more people have access to online sources of information. As of July 2015, 67-percent of adults in the U.S. had broadband internet access at home and 8-percent of adults owned a Smartphone (Pew Research Center, 2016). The use of social media by adults has grown from 10-percent of internet users in 2005 to 76-percent in 2015 (Perrin, 2015). It is more widely used by adults under the age of 50, with 90-percent of all 18 to 29 year olds using social media and 77-percent of 30 to 49 year olds (Perrin, 2015). Slightly over half (51%) of all adults 50 to 64 years of age use social media. Facebook remains the most popular social media site. As of September 2014, 71-percent of online adults reported using Facebook (Duggan, Ellison, Lampe, Lenhart & Madden, 2015). Around one-fourth of online adults reported using Twitter (23%), Instagram (26%), Pinterest (28%) and LinkedIn (28%). The HHP uses social media sites to provide reliable and consumer-friendly sources of information.

2.4 State and Regional HHP Leadership

The states participating in the HHP are affiliated with Extension at eight universities – University of Alaska, University of Connecticut, University of Georgia, Louisiana State University, University of Missouri, Montana State University, Oklahoma State University and University of Tennessee. Each of the universities has an Extension education and outreach delivery system in place that reaches rural and urban populations throughout the state. The HHP participating states vary in population and demographics. Three of the states are in the southeast, two in the northwest, one in the northeast, one in the Midwest and one in the Great Plains. Table 1 provides state populations, and racial and ethnic composition of the population.

Table 1: Demographics of HHP States¹

State	Population	Race/Ethnicity				Region of U.S.
		White	Black	Native American & Alaska Native	Hispanic	
Alaska (AK)	736,732	66.9%	3.9%	14.8%	6.8%	Northwest
Connecticut (CT)	3,596,677	81.2%	11.5%	0.5%	15.0%	Northeast
Georgia (GA)	10,097,343	62.1%	31.5%	0.5%	9.3%	Southeast
Louisiana (LA)	4,649,676	63.4%	32.5%	0.8%	4.8%	Southeast
Missouri (MO)	6,063,589	83.5%	11.8%	0.5%	4.0%	Midwest
Montana (MT)	1,023,579	89.4%	0.6%	6.6%	3.5%	Northwest
Oklahoma (OK)	3,878,051	75.1%	7.7%	9.0%	9.8%	Great Plains
Tennessee (TN)	6,549,352	78.9%	17.1%	0.4%	5.0%	Southeast

¹ U.S. Census Bureau, 2015

The eight states participating in the HHP receive a small grant to help fund healthy housing activities. To increase healthy housing activities, states leverage funds from other sources. For example, funds from the State Indoor Radon Grant help to support healthy housing activities related to radon in Alaska and Georgia.

Two of the HHP deliverables for each partner state were to: (1) develop a state wide healthy housing advisory board to bring together community partners to identify and collaborate on healthy housing issues within the state; and (2) deliver healthy housing programs and other outreach activities. In addition, each state partner worked on a national deliverable for the HHP. Table 2 lists these national deliverables.

Table 2: National HHP Deliverables

State/University	Deliverables
University of Fairbanks – Alaska (AK)	Develop 3 two-hour healthy housing webinars
University of Connecticut (CT)	Develop, launch and maintain social media in cooperation with the University of Georgia
University of Georgia (GA)	<p>Develop, launch and maintain social media in cooperation with the University of Connecticut</p> <p>Work with Oklahoma and Missouri to create a consumer guide to accompany the <i>Help Yourself to a Healthy Home</i> publication</p>
Louisiana State University (LA)	Establish a communication network among sub-grantees through a monthly e-newsletter
University of Missouri (MO)	<p>Develop a series of healthy housing educational displays or posters to support the Healthy Home Solutions toolkit</p> <p>Maintain in cooperation with Montana State University, the national HHP website (www.extensionhealthyhomes.org)</p> <p>Work with Georgia and Oklahoma to create a consumer guide to accompany the <i>Help Yourself to a Healthy Home</i> publication</p>
Montana State University (MT)	<p>Provide oversight and guidance involving the HHP online program tracking system/database</p> <p>Work with the University of Missouri to develop, launch and maintain the national HHP website</p>
Oklahoma State University (OK)	<p>Develop an App to serve as a tool to reduce housing deficiencies and risks associate with childhood diseases and injuries</p> <p>Work with Georgia and Missouri to create a consumer guide to accompany the <i>Help Yourself to a Healthy Home</i> publication</p>
Tennessee (TN)	Develop 4 two-hour webinars on comprehensive approaches to healthy homes using the Healthy Home Solutions Toolkit resources

Accomplishment of the national deliverables and individual state outreach activities were reported to the national HHP office at the University of Missouri where they were compiled into a report for USDA-NIFA. The outcomes are discussed in the following section.

3. Results and Discussion

3.1 National HHP Deliverables

The majority of the national deliverables were completed by the end of the reporting period (November 30, 2015). The outcomes of these projects are discussed below.

A total of six healthy housing webinars were developed by Alaska and Tennessee. The webinars were designed for professionals in Extension, public health, environmental health, non-profits, and local, state and federal government. The three webinars developed by Alaska covered home safety; allergies/asthma and hazardous household waste; and indoor air quality. These webinars examined the issues from a cold climate perspective. Tennessee combined two issues and created three webinars instead of four. These webinars examined issues from a hot climate perspective, covering mould and moisture; pests and pesticides; and lead poisoning prevention and energy efficiency. There were 95 participants from 11 different states. To provide ongoing access to past participants and as an ongoing resource, Tennessee posted the webinars they created on the HHP website (<http://extensionhealthyhomes.org/>) and YouTube.

Connecticut and Georgia worked together to develop an online presence for the HHP. The Facebook, Twitter and Pinterest sites were created in the spring of 2015. As of November 30, 2015, there were 201 likes on Facebook, 144 tweets and 24 Twitter followers, and 19 Pinterest boards with 503 pins and 23 followers.

Louisiana designed, wrote and distributed electronically six *Healthy Homes Highlights* newsletters to partners, state advisory boards, and other professionals interested in healthy housing. The purpose of the newsletters was to provide a communication network for HHP partners and state advisory boards. To provide a reference and increase reach, the newsletters were posted on the national HHP website (<http://extensionhealthyhomes.org/>).

Missouri created nine educational posters that were distributed to all of the state partners. The posters were designed so they can be personalized by each of the state partners. Figure 1 shows examples of two of the posters. The poster on the right has been personalized by Georgia with their logo and website.



Figure 1: Educational Posters designed by Missouri and personalized by Georgia

Missouri and Montana worked together to update the national healthy homes website and incorporate links for consumers and educators (www.extensionhealthhomes.org). The website provides educators access to the *Healthy Home Solutions* toolkit. Montana is still working on developing a database for HHP educators to track educational outreach activities.

Oklahoma worked with Georgia and Missouri to create a four-page consumer guide to accompany the widely used practitioner publication *Help Yourself to a Healthy Home*. The consumer guide and practitioner publication are under review and should be available before the end of 2016 under the name of *Everyone Deserves a Healthy Home*. Oklahoma continues to work on the development of the Smartphone App.

3.2 Other Healthy Housing Activities

Each state established, or strengthened, their healthy homes advisory group. Activities of the advisory groups varied among the states. The healthy homes advisory groups provided an opportunity to increase the exchange of healthy housing resources and information.

To assess the impacts and health improvements from the implementation of this comprehensive healthy housing program, partner states collected data from healthy housing programs, workshops, exhibits, media, websites, telephone calls, emails, and individual questions. Table 3 shows a breakdown by state of healthy housing trainings, workshops, exhibits, media (print, broadcast and social), state web pages, and direct consumer contacts.

States reported healthy housing activities that reflect one or more of the eight principles of healthy home. Examples of some of the outreach activities and the healthy homes principle they relate to are listed below.

- Keep your home contaminant-free
 - Alaska radon trainings for 52 professionals at two different international symposiums, and distributed radon test kits throughout the state.
 - Georgia trained 29 professionals about radon in water, and distributed about 900 radon test kits in the state. Around 65-percent of those who purchased a radon test kit tested their homes.
 - Georgia developed a four-page consumer publication on testing for radon in water.
- Keep your home clean
 - Connecticut produced a 16-page consumer publication on managing clutter.
 - Georgia conducted programs on green cleaning, reaching 83 people who learned more about the links between a clean house and health.
- Keep your home pest-free
 - Oklahoma created a consumer publication on reducing the risk of bed bugs when thrift shopping.
- Keep your home safe
 - Oklahoma developed two consumer publications for older adults. One on medication safety and the other on reducing falls in the home.
- All eight principles
 - Connecticut conducted a program for 248 youth and adults.
 - Georgia posted healthy housing information on the UGA GreenWay social media sites, which have 559 likes on Facebook; 665 Twitter followers; 45 Pinterest boards with 871 followers; 17 videos with 2,057 YouTube views; and 1,922 visitors to the blog.
 - Louisiana trained 100 Extension educators and collaborators in Louisiana and Mississippi on using the HHP *Healthy Home Solutions* curriculum.
 - Missouri conducted *Rent Smart* programs for 750 adult renters who faced challenges finding rental housing.
 - Missouri worked with university police to provide healthy housing and renting information for an App.
 - Montana conducted trainings for asthma control group community partners who conduct home visits.
 - Oklahoma modified the *Healthy Home Solutions* curriculum to meet the needs of their residents.
 - Tennessee was invited to present information on healthy housing at the Governor's Housing Summit on affordable housing.

Table 3: Healthy Homes Partnership Activities by State Partners
(September 1, 2014 to November 30, 2015)

	AK	CT	GA	LA	MO	MT	OK	TN	Total
Outputs									
Trainings, Workshops, Presentations	72	12	1,052	546	4,339	110	65	724	6,920
Displays, Exhibits	36	185	8,275	2,093	9,762			1817	22,168
Broadcast Media (radio & television)	200		660,000		874,793				1,534,993
Print media (newspapers & newsletters)	2		201,661	3	923			200	202,789
Social media *		575	10,904	5,907					17,386
Website activity	4		6,771	200,000	11	12,500	1		219,287
Telephone calls	61	20	350		308	43	27	15	824
Direct Mail			150		30				180
Home visits					27				27
Other			1,248		1,060		903		3,211
TOTAL									2,007,785

* Social Media numbers reflect total numbers of likes, followers, tweets, boards, pins, views, and subscribers.

4. Conclusion

Working in a partnership provided opportunities for meeting broad overall healthy housing goals. State partners used a broad array of outreach methods, including face-to-face programs, webinars, exhibits, publications, and media (broadcast, print and social) to increase awareness about healthy housing. This analysis of the HHP provides valuable insights into the effectiveness of an integrated approach to healthy housing programming from an established entity. The HHP reaches large numbers of people; however, it could be more effective by increasing assessments of intermediate- and long-term impacts.

The HHP reported several short-term impacts from outreach activities. The main impact was an increase in healthy housing knowledge among consumers and professionals from programs, trainings and webinars. Residents in Alaska and Georgia tested their homes for radon. In the online community, the HHP increased access to healthy housing information. Additionally, several new healthy housing partnerships and collaborations were developed. Fewer intermediate- and long-term impacts were reported. In Missouri 80-percent of the households in Eastern Jackson County who attended a *Rent Smart* workshop were able to avoid an early lease termination that would have resulted in financial losses of \$2,500 or more. Studies in Missouri show long-term success of participants in *Rent Smart* as well as improvements in cooperation between students and landlords. Assessing intermediate- and long-term impacts requires time and funding to follow-up with participants in programs and trainings. This can be a major challenge for universities with limited staff and finances.

The challenges for the future are to develop new ways to assess outcomes from programs and trainings, and to measure the effectiveness of social media as a means of disseminating information. Key to the ongoing success of the HHP is to maintain a mindset of change.

Extension is a great tool to use across states in the U.S. to provide a consistent healthy housing message. The organization is nationwide, provides unbiased research-based information, and offers free or low-cost access to information. Face-to-face programs will remain an important delivery method, but we expect to continue to see decreases in program attendance and increased use of online tools and networks. It is important to be at the forefront of change and explore ways to expand our reach to the online generation. The HHP should continue to experiment with new ideas to expand knowledge about healthy housing.

Acknowledgements

The Healthy Homes Partnership project is supported by funding from the U.S. Department of Agriculture, National Institute of Food and Agriculture and the U.S. Department of Housing and Urban Development's Office of Lead Hazard Control and Healthy Homes. The authors acknowledge and thank other Cooperative Extension professionals who provided data to the Healthy Homes Partnership. These individuals include Barbara Allen (Montana State University), Dr. Martha Keel (University of Tennessee), Art Nash (University of Alaska), Dr. Gina Peek (Oklahoma State University), Dr. Claudette Reichel (Louisiana State University), and Mary Ellen Welch (University of Connecticut).

5. References

- Association of Public and Land-grant Universities (2012, February). The Land-Grant Tradition. Retrieved from <http://www.aplu.org/library/the-land-grant-tradition/file>.
- Beatley, N. (2011, March). Green Housing=Improved Health: A Winning Combination. Retrieved from http://www.nchh.org/Portals/0/Contents/green_build_symposium_r3.pdf.
- Braveman, P., Dekker, M., Egerter, S., Sadegh-Nobari, T. & Pollack, C. (2011, May). Housing and Health. Exploring the Social Determinants of Health (Issue Brief #7). Robert Wood Johnson Foundation. Retrieved from <http://www.rwjf.org/en.html>.
- Booth, L.B. & Peek, G.G. (2013, February). The Healthy Homes Partnership: A Cooperative Extension Model. *Journal of Extension*, 51(1).
- Centers for Disease Control and Prevention (2016, January 29). Lead. Retrieved from <https://www.cdc.gov/nceh/lead/default.htm>.
- Coley, R.L., Leventhal, T., Lynch, A.D. & Kull, M. (2013, September), Poor Housing is tied to Children's Emotional and Behavioral Problems. MacArthur Foundation How Housing Matters Policy Research Brief. Retrieved from <https://www.macfound.org/>.
- Drehobl, A. & Ross, L. (2016, April). Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities. American Council for an Energy-Efficient Economy. Retrieved from <http://energyefficiencyforall.org/resources>.
- Duggan, M., Ellison, N.B., Lampe, C.I., Lenhart, A. & Madden, M. (2015, January 9). Social media update 2014. Pew Research Center. Retrieved from <http://www.pewinternet.org/2015/01/09/social-media-update-2014/>.
- Garb, M. (2003). Health, Morality, and Housing: The "Tenement Problem" in Chicago. *American Journal of Public Health*, 93(9), pp 1420-1430.
- Kanchongkittiphon, W., Mendell, M.J., Gaffin, J.M., Wang, G. & Phipatanakul, W. (2015, January). Indoor Environmental Exposures and Exacerbation of Asthma: An Update to the 2000 Review by the Institute of Medicine. *Environmental Health Perspectives*, 123(1), pp 6-20. Retrieved from <http://ehp.niehs.nih.gov/1307922/>.
- Krieger, J. & Higgins, D.L.. (2002). Housing and Health: Time Again for Public Health Action. *American Journal of Public Health*, 92, pp 758-68.
- Maqbool, N., Viveiros, J. & Ault, M. (2015, April). The Impacts of Affordable Housing on Health: A Research Summary. Center for Housing Policy. Retrieved from http://www2.nhc.org/HSGandHealthLitRev_2015_final.pdf.
- National Center for Healthy Housing (2008). Seven Principles of Healthy Homes. Retrieved from <http://www.nchh.org/WhatWeDo/HealthyHomesPrinciples.aspx>.
- Perrin, A. (2015, October 8). Social Media Usage: 2005 – 2015. Pew Research Center. Retrieved from <http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/>.
- Pew Research Center (2016). Three Technology Revolutions. Retrieved from <http://www.pewinternet.org/three-technology-revolutions/>.
- U.S. Census Bureau (2014, July 1). Quick Facts. Retrieved from <http://www.census.gov/quickfacts/table/PST045215/00>.

- U.S. Department of Health and Human Services (2009). The Surgeon General's Call to Action to Promote Healthy Homes. Retrieved from <http://www.ncbi.nlm.nih.gov/books/NBK44192/>.
- U.S. Department of Health and Human Services (2016a, Feb. 10). Summary Health Statistics Tables for U.S. Adults: National Health Interview Survey, 2014, Table A-2. Retrieved from http://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2014_SHS_Table_A-2.pdf.
- U.S. Department of Health and Human Services (2016b, Feb. 10). Summary Health Statistics Tables for U.S. Children: National Health Interview Survey, 2014, Table C-1. Retrieved from http://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2014_SHS_Table_C-1.pdf.
- U.S. Department of Housing and Urban Development (2013). Advancing Healthy Housing A Strategy for Action – A Report from the Federal Healthy Homes Work Group, Retrieved from http://portal.hud.gov/hudportal/documents/huddoc?id=stratplan_final_11_13.pdf.
- U.S. Department of Housing and Urban Development Office of Lead Hazard Control and Healthy Homes (2016). Eight Tips for Keeping a Home Healthy. Retrieved from <http://portal.hud.gov/hudportal/documents/huddoc?id=HH8Tips.pdf>.