

A Health Impact Assessment of the Rental Assistance Demonstration Program in Durham, North Carolina

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Introduction and Research Purpose

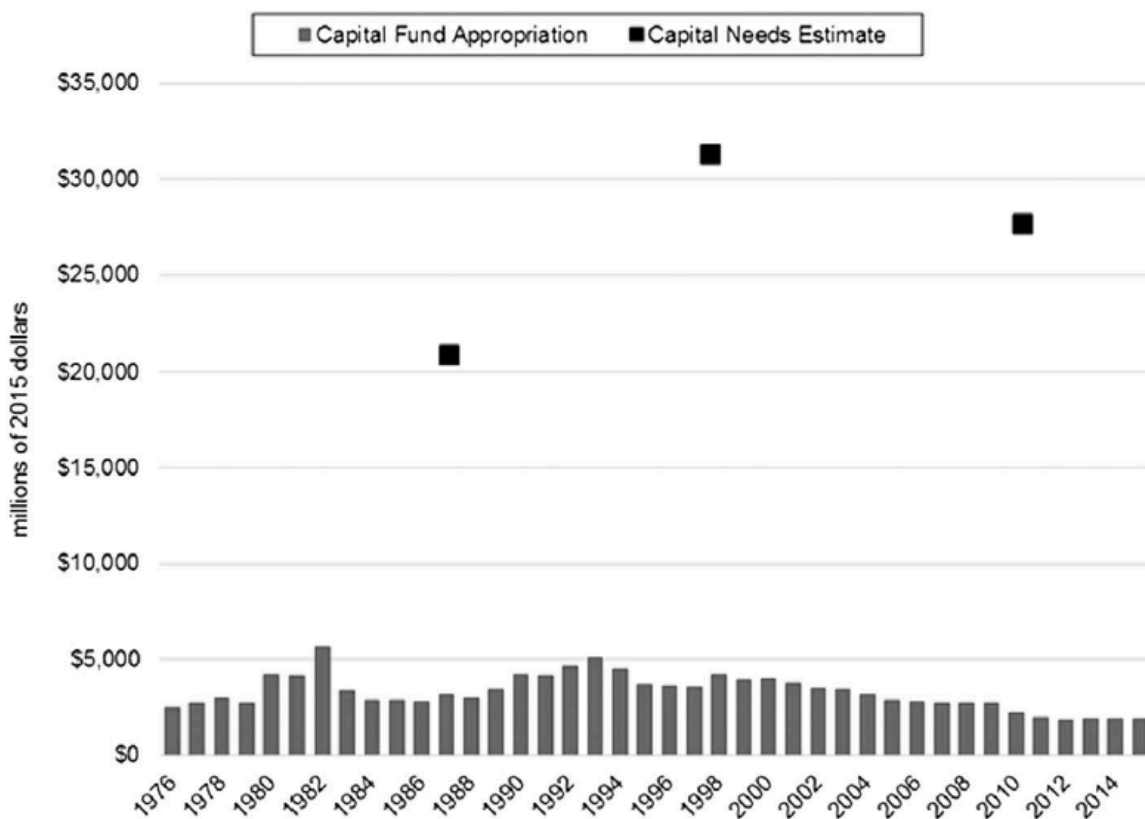
There is a growing body of research connecting the built environment, such as housing and transportation, to health outcomes. Although there are obvious connections between some of these topics, such as the way indoor and outdoor air quality may affect respiratory health, there are also less established pathways between policy decisions and the health of a population. A Health Impact Assessment (HIA) is one way to determine the potential health impacts of a proposed policy, project, or program before implementation in order to recommend changes that will protect and promote health. The International Association of Impact Assessment defines HIA as “a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, program, or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects” (Bhatia et al., 2014). The use of HIA has been growing in the United States and it can be an effective tool to determine how a policy will impact health, and ways to mitigate negative health impacts before the policy is implemented.

HIAs can be an especially useful tool to use when a new policy, project, or program may have substantial impacts on a vulnerable population, such as tenants of public housing. According to the United States Department of Housing and Urban Development, approximately 2.2 million people live in 1.1 million public housing units, managed by over 3300 local housing authorities throughout the United States (U.S. Department of Housing and Urban Development, 2017; Reid, 2017). Additionally, more than 80 percent of households in public housing are elderly, disabled, or are families with children; therefore, the quality and stability of housing for these vulnerable populations can have impacts on factors such as health, education, and quality of life (Urban Institute, 2018). Public housing residents often have a poorer overall health status; increased levels of asthma, hypertension, diabetes, obesity, depression, and smoking; decreased levels of physical activity; and higher exposure to poor indoor air quality and pests (Digenis-Bury et al., 2008). There are many social and environmental factors that may contribute to these poorer health outcomes, including levels of income and employment, neighborhood investment and

quality, and access to goods and services (Human Impact Partners, 2012). However, studies have also shown that public housing may provide a safety net for the very unhealthy poor, who may face even greater health challenges without access to public housing (Ruel et al., 2010). Given the vulnerability of this population, as well as the critical role housing plays in an individual's health status, it is important to consider the impacts new housing policies or programs will have on current public housing residents.

Between 1991 and 2013, the inventory of public housing units throughout the United States decreased by 22.7%, or 320,000 units, mostly due to units being deemed uninhabitable (Collinson et al., 2015; Reid, 2017). Although there was a substantial increase in the number of tenant-based housing vouchers provided in this same time period, concerns about the availability of affordable units for low-income individuals and families persist (Hanlon, 2017). Over five million households receive some kind of federal rental assistance in the United States. However, there are almost eleven million low-income renter households paying more than half their income for housing that receive no assistance (Center on Budget and Policy Priorities, 2017b). Only 9% of the country's public housing stock was built after 1990 and 44% was constructed before 1970 (Schwartz, 2014). Aging infrastructure and inadequate funding for the renovation of these public housing units from the Capital Fund, part of the United States Department of Housing and Urban Development's budget, has led to deteriorating conditions in public housing across the country (Goetz, 2013). In 2015, Congress appropriated less than \$1.9 billion for the Capital Fund, a decrease of more than 50 percent from the appropriation in 2000, despite the existence of a very large capital needs backlog of \$25.6 billion in 2010 (Schwartz, 2017). Figure 1 shows the disparity between the Capital Fund appropriation and the capital needs estimate for public housing units in the United States. Although the most recent omnibus spending bill passed by Congress in March 2018 includes an \$809 million, or 41.6 percent, increase in the Capital Fund from fiscal year 2017 funding levels, the uncertainty that persists from year to year makes it difficult for housing authorities to establish sustainable maintenance practices to preserve their existing stock of public housing units (National Low Income Housing Coalition, 2018).

Figure 1: Public Housing Capital Fund and Capital Needs Estimates (Hanlon, 2017)



Source: Hanlon, J. (2017). *The Origins of the Rental Assistance Demonstration Program and the End of Public Housing*. *Housing Policy Debate*, 27(4), 611–639. <http://doi.org/10.1080/10511482.2016.1262445>

Given this dire financial situation, many public housing authorities are desperate to find new and innovative ways to fund renovations of their existing housing stock. One such program is the Rental Assistance Demonstration (RAD) Program, a federal program aimed at improving America’s stock of public housing by converting current public housing units to project-based Section 8 assistance (Hanlon, 2017). Through the RAD Program, public housing authorities can position themselves to tap into private sources of funding for real estate, including bank loans, bond proceeds, and tax-credit equity, that can be used to renovate or build new units. The RAD Program removes the current funding restrictions faced by public housing authorities. Communities that have undergone RAD conversion have utilized a range of financing sources including mortgage debt, Low-Income Housing Tax Credits, Federal Housing Administration mortgage insurance, grants (such as HOME Investment Partnerships Program grants and

Community Development Block Grants), and state and local housing trust funds (Econometrica, Inc., 2016; Smith, 2015). Given the country's public housing capital needs backlog and the deteriorating condition of public housing throughout the country, the RAD Program has been viewed as an opportunity to drastically improve public housing conditions while also establishing a more stable funding stream for future improvements.

Although the RAD Program has only been in existence since 2013 and was initially limited to 60,000 housing units across the country, it has been growing rapidly and becoming more popular among housing authorities, including the Durham Housing Authority in North Carolina (Schwartz, 2017). As of August 2017, more than 185,000 units have been converted or are in the process of being converted from public housing to project-based Section 8 assistance through the RAD Program; an additional 43,000 units are awaiting HUD approval for conversion and 48,000 units are on a program waiting list (Schwartz, 2017; Reid, 2017). Additionally, the omnibus spending bill passed by Congress in March 2018 includes an increase in the cap on the RAD Program from 225,000 to 455,000 public housing units and extends program authorization to 2024 (National Low Income Housing Coalition, 2018). Despite this rapid growth, little research has been done to determine the impacts this policy will have on current public housing residents. In fact, recent reports have indicated that additional oversight is needed in order to protect tenants of public housing. The United States Government Accountability Office released a report in February 2018 indicating that HUD needs to take action to improve metrics and ongoing oversight of the RAD Program, particularly the effects of RAD conversions on resident households (U.S. Government Accountability Office, 2018). Therefore, this HIA has two main goals:

1. To determine the potential health impacts of implementing the RAD Program in Durham, NC.
2. To recommend changes to the Durham Housing Authority's RAD Program implementation plan in order to protect and promote health of Durham Housing Authority residents.

The purpose of this HIA is to determine how the RAD Program will impact the health of Durham Housing Authority residents and to recommend ways to protect and promote health for this population. Prior to this assessment, a few key pathways through which the RAD Program may impact the health of Durham Housing Authority residents were identified, including: changes in the type of management in public housing; changes in housing quality, affordability, and stability; changes in resident organizing and social capital; and changes in the potential for resident displacement (explained further in the “Potential Health Impacts of the RAD Program” section below). As the RAD Program continues to expand throughout the country, understanding the potential impacts faced by current residents of public housing will be important. This HIA contributes to the existing literature and has the potential to influence the way the RAD Program is implemented by the Durham Housing Authority.

Public Housing in Durham, North Carolina

Public housing in Durham, North Carolina is managed by the Durham Housing Authority (DHA). The mission of DHA is to “be a leader for affordable housing in Durham County by serving as a housing safety net, promoting individual self-sufficiency, leveraging core housing competency to support DHA’s mission, managing real estate and facilitating and participating in mixed income housing development” (Durham Housing Authority, 2017b). DHA currently manages nearly 1900 public housing units in 19 public developments and 4 mixed-income/tax-credit developments (Durham Housing Authority, 2017a). These developments are located throughout Durham and serve low-income, elderly, and disabled individuals and families. The majority of DHA residents are black and more than half have lived in public housing for at least five to ten years. Almost all residents are considered to be extremely low income, with household incomes at or below 30 percent of the area median income, and more than 80 percent of residents are elderly, disabled, or families with children (Durham Housing Authority, 2018). DHA also manages the Housing Choice Voucher program, also known as Section 8, a rent subsidy program designed to assist low-income families in paying rent for private housing of their choice. Nearly 2800

individuals and families currently utilize the Housing Choice Voucher program in Durham (Durham Housing Authority, 2017a).

According to DHA, there are approximately 16,500 low-income households in Durham. Many of these households are housing cost burdened, spending more than 30 percent of their income on housing costs, some even spending more than 50 percent of income on housing and utilities each month (Durham Housing Authority, 2017a). With this in mind, DHA is eager to find ways to increase the availability and improve the conditions of affordable rental housing in Durham, including their current public housing stock. DHA plans to convert its entire public housing portfolio and HOPE VI developments to project-based Section 8 assistance under the RAD Program in the coming years. DHA hopes that this RAD Program conversion process will allow them to leverage private and public funds to renovate existing units and build new units for low-income families in Durham (Durham Housing Authority, 2017a). The table in Appendix 1 outlines the three phases of conversion that have been planned by DHA under the RAD Program. It should be noted that the first phase of DHA's RAD conversion, including the renovation of Moreene Road and Damar Court, was started while this HIA was being completed.

The Rental Assistance Demonstration Program

The RAD Program enables local housing authorities to convert their public housing units to project-based Section 8 housing developments, increasing funding opportunities for capital improvements (Hanlon, 2017). By transferring properties from the public housing program to project-based Section 8 assistance, local housing authorities can gain access to bank loans, bond proceeds, and tax-credit equity that would otherwise not be available, greatly increasing the funding available for renovations of existing units and construction of new units (Schwartz, 2017). By engaging in this process, local housing authorities enter into a multi-year Housing Assistance Payment contract with HUD, in which HUD commits to providing the development with funds equivalent to the capital and operating funds previously received by the development under the traditional public housing program (Schwartz, 2017). Even though

HUD funding for these developments would be reallocated from the public housing program to the Section 8 program, the newly converted project-based Section 8 developments can still be owned by the local public housing authority; however, ownership of these converted developments can also be transferred to a nonprofit organization (Hanlon, 2017). Under the RAD Program, the property owner, either the local public housing authority or a nonprofit organization, has to enter into a 15- or 20-year Housing Assistance Payment contract with HUD, which must be renewed upon expiration indefinitely (Fischer, 2014). Additionally, the property owner must decide between two types of project-based assistance: project-based vouchers (PBV) or project-based rental assistance (PBRA). In both cases, tenants contribute 30% of their adjusted income toward rent, just as they do under the current public housing program; however, PBV contracts are typically administered by the housing authority that converted the property to project-based rental assistance while PBRA contracts are generally administered by HUD's Office of Housing (Schwartz, 2017).

Unlike previous public housing redevelopment programs, such as HOPE VI, the RAD Program requires one-for-one replacement of all public housing units and all current residents must be eligible to reside in the property after the RAD conversion is complete. HUD's Final Implementation Notice states:

Any resident that may need to temporarily be relocated to facilitate rehabilitation or construction has a right to return to an assigned unit at the Covered Project once rehabilitation or construction is completed. Permanent involuntary displacement of residents may not occur as a result of a project's conversion of assistance [from public housing to project-based Section 8], including but not limited to, as a result of a change in bedroom distribution, a de minimis reduction of units, the reconfiguration of efficiency apartments, or the repurposing of dwelling units in order to facilitate social service delivery (U.S. Department of Housing and Urban Development, 2015).

Additionally, tenants in RAD conversion developments may choose to relocate without losing their rental subsidy (U.S. Department of Housing and Urban Development, 2015). In these cases, tenants would be

granted a rental voucher for use in a private Section 8 unit; however, according to conversations with DHA, this option would not be available to current public housing tenants until at least one year after the RAD conversion of their community is complete.

Potential Health Impacts of the RAD Program

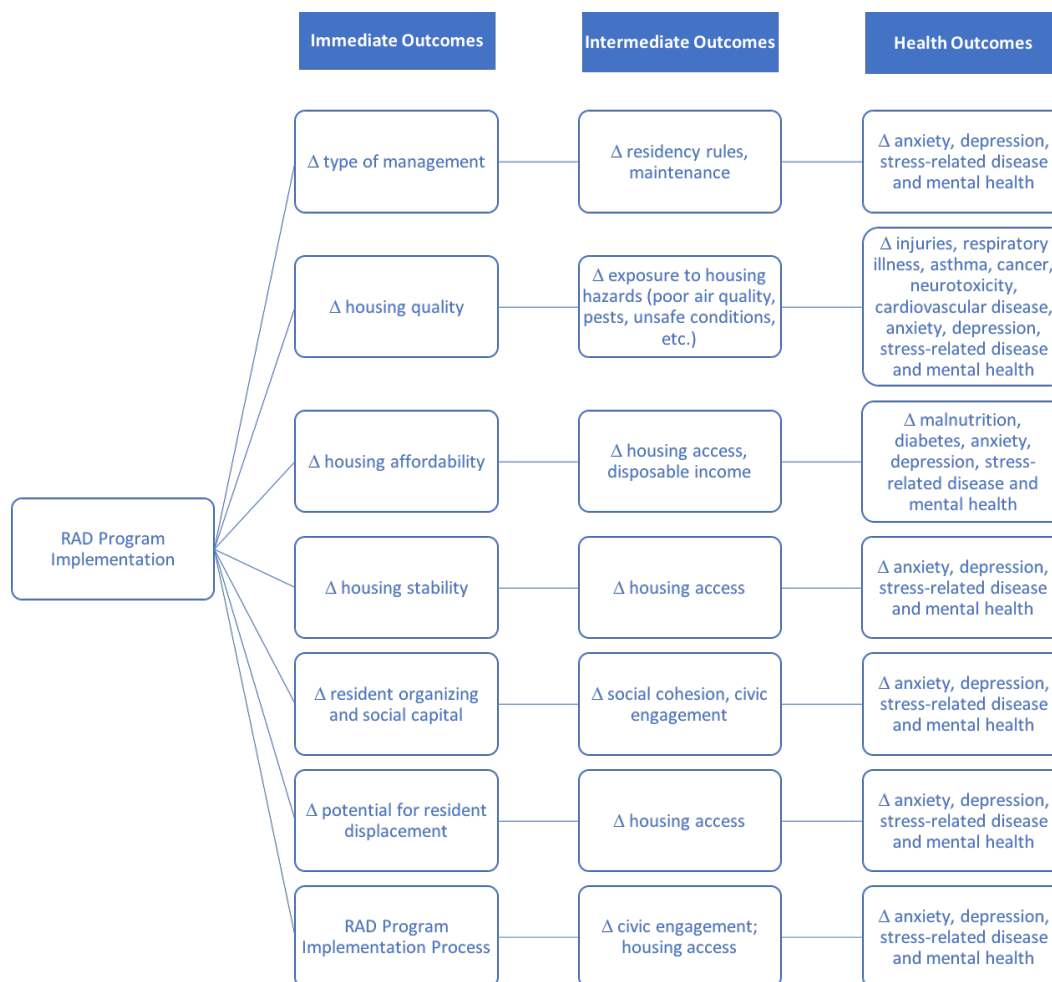
Housing conditions can impact the health of residents in many different ways. Substandard housing conditions, including neighborhood quality, physical characteristics, overcrowding, and affordability have all been associated with a variety of health conditions, such as respiratory infections, asthma, lead poisoning, injuries, and poor mental health (Krieger et al., 2002). These negative impacts are often disproportionately experienced by lower income individuals who are more likely to spend a higher proportion of their income on housing, while also living in overcrowded, substandard housing conditions (Rauh et al., 2008).

Given the vulnerability of public housing residents, as well as the general deterioration of America's public housing stock, these residents are especially susceptible to the negative health impacts associated with poor housing conditions. The lack of funding for capital improvements of public housing developments over the last several decades has led to significant health and safety concerns related to the "lack of maintenance, including exposure to mold and lead paint, rodent infestations, and outdated electrical and sewage systems" (Reid, 2017). The RAD Program is seen as an opportunity to close this funding gap by leveraging additional funds, through debt and equity financing, to rehabilitate units. One RAD Program developer in San Francisco noted that "without RAD, it was just a matter of time before a large portion of all these buildings had to be vacated one way or another and people would have been displaced" (Reid, 2017). Although the RAD Program has the potential to rehabilitate some of America's deteriorating public housing stock, the cumulative impacts it will have on residents need to be considered.

The implementation of the RAD Program in Durham will likely have many impacts on current public housing residents, many of which may be related to health. As mentioned earlier, this study aims to

determine how the RAD Program may impact health through the following mechanisms: changes in the type of management in public housing; changes in housing quality, affordability, and stability; changes in resident organizing and social capital; changes in the potential for resident displacement; and the RAD Program implementation process itself (Figure 2).

Figure 2: RAD Program Health Impact Pathway Diagram



Adapted from: Health Impact Project. (2016). *Health Impact Assessment and Housing*. Retrieved from: http://www.pewtrusts.org/~media/assets/2016/03/guidance_for_the_public_health_sector.pdf
 Human Impact Partners, Advancement Project, & National People's Action. (2012). *The Rental Assistance Demonstration Project: A Health Impact Assessment*. Retrieved from <http://www.pewtrusts.org/~media/assets/2012/02/radfinalradfinalreport.pdf>

Each of these mechanisms may impact both physical and/or mental health through changes to the physical or social environment in which residents are living. In many cases, these health impacts may be a result of changes in stress levels which can cause health impacts such as increased blood pressure, cardiovascular

disease, hypertension, anxiety, depression, sleep disturbance, and worsened chronic health conditions such as asthma, heart disease, or stroke, among other things (Health Impact Project, 2015).

In general, the RAD Program is seen as a way to increase funding options for local public housing authorities to renovate existing units and construct new affordable housing units. The federal funding associated with these project-based Section 8 developments is also considered to be more stable and secure than the existing public housing Capital Fund (Schwartz, 2017). However, even though the cost to residents is expected to stay the same for most tenants and the condition of the housing units is likely to improve, there are a few key issues that should be considered when thinking about the overall impact the RAD Program will have on the health of public housing residents. First, if appropriations for project-based rental assistance do not match the need required by the subsidy contracts, these developments could be at risk of foreclosure. Second, there is also some concern about the privatization of public housing that could happen as part of the RAD process. Currently, public housing is a public asset that is owned and operated by public housing authorities throughout the country. Properties that undergo conversion to project-based Section 8 assistance under the RAD program could be owned by nongovernmental entities. If this nongovernmental entity goes bankrupt or fails to meet HUD's housing quality standards, or if the property goes into foreclosure because of reduced funding from the federal government, residents may be at risk of being displaced and the property may no longer be a resource for affordable housing in the community (Smetak, 2014). Third, recent reports have highlighted potential issues with RAD implementation and tenants' rights, particularly challenges to resident organizing in communities where RAD has been implemented (National Housing Law Project, 2017). The United States Government Accountability Office's recent report also found that HUD does not systematically use its available data systems to track the effects of RAD conversions on resident households or to monitor the use and efficacy of all resident safeguards (U.S. Government Accountability Office, 2018).

Each of these expected changes under the RAD Program may impact the health of current public housing residents, either positively or negatively. The improved physical conditions of housing units will

likely have positive impacts on the physical health of residents since environmental hazards such as poor air quality and infestations will be less prevalent. However, changes in housing management, changes in opportunities for resident organizing and social capital, and changes in the potential for resident displacement may not necessarily have a similar positive impact on the health of residents; these changes may even lead to negative health impacts for current public housing residents. This HIA explores the possible health impacts of the RAD Program.

Health Impact Assessment Process

According to the North American HIA Practice Standards Working Group, every HIA should include the following elements (Bhatia et al., 2014):

- Screening: Determine whether an HIA is needed and likely to be useful;
- Scoping: In consultation with stakeholders, develop a plan for the HIA, including the identification of potential health risks and benefits;
- Assessment: Describe the baseline health of affected communities and assess the potential impacts of the decisions;
- Recommendations: Develop practical solutions that can be implemented within the political, economic, or technical limitations of the project or policy being assessed;
- Reporting: Disseminate the findings to decision makers, affected communities and other stakeholders;
- Monitoring and Evaluation: Monitor the changes in health or health risk factors and evaluate the efficacy of the measures that are implemented and the HIA process as a whole.

The screening step was completed through conversations with DHA and preliminary research into the RAD Program. The scoping, assessment, and recommendation steps were the primary focus of this project. Input from DHA leadership, staff, and residents to determine their primary areas of concern informed the focus of the assessment and the development of recommendations, which are included in this report. Although monitoring and evaluation are vital elements to any HIA, the time constraint of this research project did not allow for these activities to take place. However, recommendations for these activities as implementation of the RAD Program progresses in Durham are included in the recommendation section below.

Methodology

Since the RAD Program is only a few years old, very little research on its implementation or impacts has been conducted. Therefore, this HIA relied on a few main sources of data and information including key informant interviews with subject-matter experts and DHA leadership, attendance at resident advisory board meetings, a focus group with current DHA residents, and key informant interviews with representatives from three communities where RAD has already been implemented in North Carolina. This project was completed as a sequential analysis in that the interviews with subject-matter experts and DHA staff occurred before interviews with representatives from the three communities where RAD has already been implemented in North Carolina. This allowed the information gathered from interviews with the subject-matter experts and DHA staff to inform the interview and focus group guides that were developed to use with representatives from the three North Carolina communities and DHA residents.

Existing literature about public housing and the RAD Program provided contextual information about the existing public housing program and the changes that are likely to occur through the RAD Program implementation process. Literature about the connection between health and housing, as well as housing policy impacts on health, was used to identify specific ways in which changes to the public

housing program may impact the health of residents and informed the creation of the health impact pathway diagram in Figure 2. This information was supplemented by key informant interviews with experts who are knowledgeable about public housing policy as well as the connections between health and housing. Three key informant interviews were conducted with a national expert on the RAD Program, an expert on the connection between health and housing, and an expert on public housing in North Carolina. In addition to the literature review and key informant interviews with subject-matter experts, additional information was gathered through key informant interviews with DHA leadership and staff, attendance at two DHA resident advisory board meetings, and a focus group with three current DHA residents to learn more about the specific RAD Program implementation plans and resident concerns related to health impacts in Durham.

Finally, seven interviews with representatives from three North Carolina communities where the RAD Program has already been implemented were conducted to learn more about specific challenges and opportunities these communities have faced throughout the RAD Program implementation process, specifically relating to the health impacts of this process. Asheville, Charlotte, and Greensboro were chosen based on conversations with DHA to identify municipalities with populations and public housing programs similar to those in Durham, North Carolina. Semi-structured interviews were conducted with a representative from each of the following entities in the three communities:

- One representative from the local public housing authority
- One representative from the local health department, health clinic, or medical-legal partnership
- One representative from the local public housing tenant association/resident advisory board

It should be noted that one resident interview and one housing authority interview (from different communities) were not completed because of non-response from those contacted, so a total of seven interviews were conducted during this part of the project. Interviews with representatives from each of these communities provided valuable insight into the RAD Program implementation process and its

subsequent health impacts on residents. All interviews were semi-structured and consisted of open-ended questions to allow for follow-up questions and discussion when necessary. These interviews covered topics such as the respondents' knowledge and awareness of the RAD Program, potential health impacts of the RAD Program, and recommendations they would have for another community beginning the RAD Program implementation process. All interviews, except those with DHA leadership and staff, were conducted via telephone and were audio recorded, transcribed, and analyzed using NVivo to identify relevant themes. Additional outreach information can be found in Appendix 2, a focus group guide can be found in Appendix 3, and a key informant interview guide can be found in Appendix 4. The key informant interview guide was pre-tested using cognitive interviewing techniques to ensure its clarity and these results were used to make adjustments to both the key informant interview guide and the focus group guide.

Community Overview

*Figure 3: Community Overview**



**Updated as of March 2017.*

Sources: Schwartz, A. (2017). *Future Prospects for Public Housing in the United States: Lessons From the Rental Assistance Demonstration Program*. *Housing Policy Debate*, 27(5), 789–806. <http://doi.org/10.1080/10511482.2017.1287113>
 U.S. Department of Housing and Urban Development. (2018). *Rental Assistance Demonstration Resource Desk: RAD First Component Data*. Retrieved from: <http://www.radresource.net/firstcomponent.cfm>

Publically-available information was compiled to create an overview of each community included in this assessment (Figure 3). Durham, Asheville, Charlotte, and Greensboro are home to the largest public housing authorities in North Carolina, each with between 1500 and 3400 public housing units (U.S. Department of Housing and Urban Development, 2018). Like many larger housing authorities throughout the country, all four became interested in implementing the RAD Program soon after it was created and each of them plans to convert a large percentage, if not all, of their housing stock to project-based Section 8 developments under the RAD Program. While Durham has just started the conversion process in the last few months, Asheville, Charlotte, and Greensboro are much further along in the conversion process. The housing authorities in Asheville, Charlotte, and Greensboro have all made some physical improvements to their housing stock as a result of the RAD Program, but Greensboro has started to do more extensive renovations which mirrors some of the work planned in Durham. In Charlotte, many of the public housing communities had already been renovated or rebuilt through federal programs such as HOPE VI. Even though the amount of physical improvements to the housing varies by city, the insight gained is still valuable to Durham as they move forward with converting their entire portfolio of public housing units to project-based Section 8 assistance through the RAD Program.

Key Findings

Each of the individuals interviewed for this project had varying levels of awareness about the RAD Program being implemented in their community. However, all respondents were able to speak about the general health of tenants of public housing and the potential health impacts that could result from changes to the public housing program. It should be noted that all of the information about health impacts gathered from interviews was anecdotal and based on general observations or experiences each interviewee has had with residents of public housing throughout the RAD Program implementation process. Most of the information gathered from housing authority and public health representatives was theoretical or based on general observations through their work. Residents, on the other hand, were able

to offer more personal insight into their own specific experiences. An overview of key themes that emerged from the interviews, focus group, and community meetings are included below.

Changes in Housing and Neighborhood Quality Can Improve Health

As noted earlier, the connections between a person's physical environment and their health outcomes are inextricably linked. All public health interviewees spoke about the health conditions faced by many residents in public housing. These conditions, which include ailments such as hypertension, diabetes, cardiovascular disease, asthma, anxiety, and depression can be exacerbated by poor physical and environmental conditions. Several respondents explained how indoor air quality can be affected by the presence of mold, mildew, and pests, especially in older housing that has not been well maintained, and how this can have direct impacts on the physical health of tenants. In addition to the physical impacts of poor housing conditions, one respondent described possible mental health impacts of living in housing that is not properly maintained. The lack of maintenance on the part of the housing authority creates a vicious circle in which residents become less and less interested in doing what they can to maintain their own home, therefore accelerating the deterioration of the unit and impacting the mental and physical health of residents.

Interviewees most familiar with the RAD Program, including residents and staff from local public housing authorities, reported that physical improvements resulting from RAD Program implementation can include the demolition and reconstruction of some units; the installation of new heating, ventilation, and air conditioning (HVAC) systems; upgrades to outdated plumbing and electrical systems; and the installation of upgraded appliances, windows, and insulation; among other things to modernize and improve the accessibility of units. In addition to these improvements to the housing units, all housing authority interviewees reported that they already had or planned to make improvements to the communities themselves through the addition or improvement of features such as community centers, sidewalks, street lighting, playgrounds, and green space. All interviewees indicated a clear connection

between these physical improvements in housing and neighborhood quality and health outcomes for public housing residents. These sentiments were echoed by residents in Durham; two focus group participants said that they were looking forward to having more accessible units and communities because of mobility challenges faced by themselves and others in their communities that make it difficult to get around on a daily basis.

Most respondents indicated that improved ventilation and HVAC systems can reduce the occurrence of mold and mildew, improving air quality and reducing environmental asthma triggers. Respondents also indicated that improved insulation and general maintenance can reduce the occurrence of pests and infestations, also reducing environmental asthma triggers. Several interviewees highlighted the improved accessibility, in both the housing units and the housing community, that may result from renovations and site improvements and how this improved accessibility can improve safety by reducing falls and accidental injuries while also encouraging more physical activity. A few respondents also spoke about the improved safety that could result from updated plumbing and electrical systems, therefore reducing accidental injuries. Finally, several respondents spoke about the new appliances, windows, and insulation that would improve the energy efficiency of the housing units. In particular, residents saw this increased energy efficiency as a way for them to save money on utilities and have more disposable income available for other necessities. One resident said, “I’m glad they’re doing what they’re doing...updating everything and making the apartments not only affordable but also accessible and energy efficient. That’s one of the biggest things—without them being energy efficient, lights and gas can sometimes be more than rent.”

In addition to these health impacts related specifically to the housing units themselves, many respondents also spoke about the health impacts that will result from improved neighborhood quality. Nearly all respondents indicated that improvements to the community infrastructure, including sidewalks, street lighting, playgrounds, and green space, would have a positive impact on physical and mental health by giving residents more opportunities for physical activity and social interaction while also reducing

instances of crime. Additionally, several interviewees, particularly residents, indicated the mental health benefits of new or expanded community centers that provide more opportunity for social interaction among tenants. Some communities are using the RAD Program to create mixed-use developments in which additional services and resources may be available on site—respondents that reported this type of development also made a connection between the accessibility of new resources and the health of residents, particularly if there are health care-related resources or other necessities of daily living available on-site. One public health respondent described an experience she had working in a public housing community that was recently renovated; she said:

[In reference to older public housing communities] Very rarely do I go into a neighborhood or a community and I just see kids running around and playing...[In reference to a renovated public housing community] it was after school hours, about 4 or 5 o'clock. The first thing that came to mind was that it reminded me of when I was younger, and you would be outside after school playing because that's what we did. And in these other communities, that concept wasn't there...it wasn't safe, it didn't look inviting...and this is a beautiful place with sidewalks, with playgrounds, with a school right in the community. The kids were just all running around and playing...it felt safe, it looked appealing, it was new, it wasn't a high rise. Having those renovations...I know for a fact that the air quality, or not having to deal with poor air quality, or mold, or things like infestations and all of that that affects [conditions like] COPD and asthma and allergies. Also, kids being able to get outside and play and get that physical exercise that oftentimes, if it's not safe or it's not appealing or it doesn't look good, kids have to stay in the house...these kids were actually running around and playing and getting their physical activity and fresh air. So, you know, it's contributing to minimizing obesity in not only children but also in the adult population because of the sidewalks that they can walk around...and then there were bus stops so they're kind of near a main public transportation route, as well.

Finally, several respondents, especially residents and representatives of public housing authorities, also mentioned the increased pride that tenants may have after their community makes some improvements to the physical environment, and how this could reduce stress and improve mental health. One resident said, “You’ll have better standards of living and then you won’t have the stereotype that people put on public housing. With public housing, there is such a big stereotype on it that a whole lot of people don’t want to be in public housing, but it’s been the best thing that’s happened to me.”

The RAD Program Implementation Process Can be Stressful

Despite the positive health impacts that are likely to occur after improvements are made to the physical conditions of the housing units and communities, the RAD Program implementation process can be very stressful for many residents. In one North Carolina community, the RAD Program is being used solely as a way to access new funding sources for routine maintenance and there are no immediate plans to make extensive renovations or improvements. Regardless of the physical changes that may occur under RAD, many interviewees, particularly residents and public health professionals, pointed out the impact the uncertainty of the process itself can have on residents. As several residents and representatives of public housing authorities noted, many residents of public housing have lived in public housing for several years; any change to the program can be a big disruption to their routine and sense of stability. Many interviewees noted that the uncertainty of what the RAD Program means for them can be very stressful for residents. Public health respondents indicated that this increased stress can lead to other health impacts such as increased blood pressure and anxiety, worsened chronic health conditions such as asthma and heart disease, and increased rates of smoking and substance use. Although housing authority representatives indicated that they have established communication strategies in place, residents familiar with the RAD Program implementation process indicated that poor communication and lack of transparency by the housing authority exacerbates the stress caused by this process. Each resident interviewee indicated that they think being more involved throughout the planning and implementation process would make this less stressful for them. One resident also pointed out that when a housing

authority converts its housing stock from public housing to project-based Section 8 assistance under the RAD Program, some of the residency rules change and unless the housing authority makes a conscious effort to inform and educate tenants about these changes, this can add additional stress to residents in the future as they navigate new rules and regulations.

In communities where more extensive renovations are taking place, residents may be temporarily relocated to other housing communities. Although the RAD Program includes protections for residents that guarantees their right to return following the completion of renovations, several respondents indicated that this relocation can cause additional stress by causing people to lose connections to their social support systems and local resources. It should be noted that some renovations may not be extensive enough to warrant resident relocation; a few interviewees said that living through renovations can present a different set of health impacts including disruptions to sleep schedules for those who work nights, changes in air quality, and increased stress from a disruption of routine.

Despite these potential negative health impacts, interviewees also noted a few positive health impacts associated with the RAD Program implementation process. Several respondents indicated that the community meetings held throughout this process can give residents the ability to have a say in the future of their community. This process also allows residents to connect with fellow tenants and become more involved in their own community. In talking about the RAD implementation process, one housing authority interviewee said, “it has increased the capacity of our residents...just being involved in the process has increased the capacity of some of the tenants to advocate for themselves and the residents and to become more involved than they were before.” This involvement can promote more connections with fellow residents, increasing a person’s social support system and improving mental health outcomes.

Even Temporary Relocation is Difficult

As mentioned above, residents may have to be temporarily relocated to other housing communities when renovations and construction are taking place in their communities. The resident

protections included in the RAD Program prohibit permanent displacement; however, temporary displacement is likely when renovations are taking place. Although some housing authority representatives stated that they are attempting to do renovations in phases, therefore allowing residents to move to a different unit within the community while their unit is renovated, this is not always possible. Resident interviewees indicated that moves of any kind are difficult, whether it's to another nearby unit or to another community across town. Most interviewees indicated that this temporary displacement, which may last as long as a year in some cases, can cause residents to lose connections with their social support system and the local resources they are accustomed to accessing on a regular basis. All housing authority interviewees reported that they have established relocation plans in place and that they provide resources to assist in the moving process, including packing materials and professional movers. However, one resident focus group participant said she had been relocated to a different community and received very little help during the process which was very stressful for her and her family. All public health and resident interviewees indicated that the potential loss of connection to social support systems and local resources pose the biggest health challenges since residents may lose access to essential services such as health care providers and other supportive services. Most interviewees recognized the importance of the housing authority and other community partners providing support to residents before, during, and after the relocation process. This support helps ensure residents remain connected to resources they were previously able to access or are able to find new resources that are accessible from their new community.

Housing Affordability May Change for Some Residents

Although the majority of public housing residents will see no change in the cost of their housing after RAD conversion has taken place, a few changes were noted by several interviewees. Housing authority interviewees indicated that most residents of public housing currently pay 30 percent of their income for rent, and this percentage stays the same after RAD conversion takes place. However, many housing authorities utilize a couple of alternative rent structures for some residents at the lower and higher end of the income spectrum: minimum rent and flat rent. Minimum rent is currently limited to \$50 per

month but can be as little as \$0 per month in some cases. This allows housing authorities to collect rent from residents with zero or very little monthly income who would be paying less than \$50 per month based on 30 percent of their income. On the other hand, flat rent allows tenants to pay a flat rent based on local market rents regardless of income, which can be helpful for tenants at the higher end of the income spectrum when 30 percent of their income is higher than the housing authority's maximum allowed rent (Center on Budget and Policy Priorities, 2017a).

Under the RAD program, some housing authority interviewees reported that they are raising the minimum rent and that the new RAD maximum rents are higher than the maximum rents allowed under the public housing program. Several interviewees, particularly public health professionals and residents, thought that this change in affordability, even for a small percentage of the overall tenant population, could lead to a reduction in disposable income available for other necessities. These respondents described trade-offs that many families may have to make when deciding what to cut from their budget in order to afford a higher rent payment. This can have negative mental health consequences from increased stress, as well as physical health consequences from a reduction in access to other necessities such as healthy food or medical care. All housing authority interviewees reported that they plan to phase-in any rent increases over several years, but as one subject-matter expert said, when incomes for some residents are so low, any increase in rent could be a substantial burden on tenants.

Changes in Management Can Affect Perceptions of Stability

Although the management of housing developments in some communities may not change after RAD conversion has taken place, the housing authorities in other communities may choose to transfer management to new nonprofit or private entities. Though the rules for management should not be different between these two scenarios, some interviewees voiced concern about the possibility of new management enforcing rules in different ways. One subject-matter expert explained, “there could be [increased] risk of eviction if the new property owner/operator is more aggressive than the housing

authority was; so that entails health risks.” Several respondents, particularly residents, indicated that changes to housing management may reduce residents’ perceptions of stability. This reduced perception of stability can have negative impacts on mental health by causing increased stress if residents are worried about not having a place to live. On the other hand, some interviewees also reported that the more stable financing and subsequent physical improvements that may result from the RAD Program could make housing feel more stable for residents. If housing authorities have more financial resources to maintain housing units and/or are able to be more responsive to maintenance needs and requests, residents may feel like their housing is more secure and sustainable for the long-term.

The RAD Program Presents an Opportunity to Improve Community Engagement

As mentioned above, several respondents indicated that the RAD Program implementation process presents an opportunity for residents to connect with one another while also becoming more involved in their own community. All housing authority interviewees said that the RAD Program implementation process requires a series of community meetings and activities intended to inform residents about the process and to gather feedback about their priorities for future improvements. Several respondents indicated that these meetings present an opportunity for residents to become involved in an effort to make their community better. This may improve overall social cohesion and increase social capital for resident communities. One housing authority representative said that many residents who have not typically been very involved in their communities have been more actively participating in the RAD Program implementation process since there is actual funding allocated to make some of the improvements residents want to see. However, it should be noted that this increased community involvement may wane once the RAD Program conversion and renovations have taken place.

Discussion and Recommendations

Based on the interviews conducted for this study, it appears likely that the RAD Program will impact the health of current public housing residents in Durham, North Carolina. The changes that will

result from the RAD conversion process may have both positive and negative health impacts for residents. On one hand, improvements to housing and neighborhood quality have the potential to improve health. The process itself also presents an opportunity to improve community engagement among residents. On the other hand, the uncertainty associated with the RAD Program implementation process, changes in the potential for resident displacement, changes in housing affordability, and changes in the perceptions of stability may have negative health consequences for residents. This information is consistent with literature that was presented in the background section and reinforces the validity of the health impact pathway diagram presented in Figure 2.

Overall, the RAD Program is viewed as a way to improve the conditions and long-term sustainability of America's public housing stock in a time when the funding and support for public housing is inconsistent, at best. As one national RAD subject-matter expert explained:

RAD does appeal to both sides of the aisle...In more conservative states, there was a lot of discussion about how RAD was great because it reduced regulatory burden and allowed them to be more flexible and allowed them to be more efficient—all of those buzzwords for people who want smaller government. And in the more progressive states, there was a lot of conversation about how important this was to preserve public housing over the long term and to invest in residents. They're talking about the same program in these different places, and they're doing the same thing, but it has a lot of cross-aisle appeal. Presumably, it could continue to have legs, as long as Congress is willing to put money behind subsidizing housing.

Given this strong cross-aisle appeal and the recent funding increases it has received at the federal level, it is clear that the RAD Program continues to be one of the most viable opportunities for housing authorities to maintain their current housing stock while also building more affordable housing units, in some cases. Several subject-matter experts emphasized the importance of considering the impacts of this program before, during, and after implementation in order to protect and promote the health of the public housing

population. Overall, there will be tradeoffs that DHA will have to consider as they move forward with RAD Program implementation. There is no question that improving the physical environment for residents can have positive health impacts; however, given the vulnerability of this population, negative health consequences, even for a small subset of the population, also need to be considered. DHA residents represent some of the most vulnerable populations in Durham, as is the case for most residents of public housing. Therefore, it will be important for DHA to keep these impacts in mind as they move forward with RAD conversions in Durham.

In order for the RAD Program to serve as a tool to protect and promote health for all current and future DHA residents, there are a few recommendations that DHA should consider throughout the process. These recommendations are based on information gathered from the literature review, subject-matter expert interviews, interviews with representatives in three North Carolina communities, a focus group with DHA residents, and attendance at community meetings that were part of this study.

Recommendations: Resident Education and Engagement

Based on interviews conducted with people familiar with the implementation of the RAD Program in other communities, as well as the concerns brought up during the DHA resident focus group and community meetings, resident education and engagement will be crucial to the successful implementation of the RAD Program in Durham. One housing authority representative indicated that conducting more extensive community engagement than the bare minimum required by the RAD Program regulations was a key part of gaining support from residents early in the process. Additionally, several housing authority representatives said that holding regular meetings before, during, and after the conversion process was an excellent way to ensure residents remained informed and involved. A few interviewees stressed the importance of making sure that all residents are included in the process, especially those that may be relocated, even if they choose not to attend community meetings. Interviewees said that giving out information that residents can share with neighbors, making RAD

Program information easily accessible on the housing authority website, and equipping resident leaders with information they can share throughout the process are some of the ways to include more residents in the process. All interviewees stressed the importance of involving residents in every step of the conversion process—from helping create the design for renovations and new construction, to assisting in the development of the relocation plan. These efforts can build trust between residents and housing authority representatives, which reduces stress for residents by allowing them to contribute to the improvement of their community. Finally, almost all interviewees spoke about the importance of making sure residents are aware of what the RAD Program will mean for them and their communities. In some places, as soon as residents learn that a change is being made to the public housing program, rumors begin to spread about evictions and increased housing costs. Having information available for residents that explains what to expect from the RAD Program, as well as the fact that their rights as tenants remain the same is critical to reduce uncertainty and stress that may result from the implementation process. One resident interviewee said that distributing information door-to-door and having housing authority leadership attend community meetings were some of the best ways to communicate new information to residents.

Recommendations: RAD Program Implementation Process

Given that the RAD Program implementation process can cause a lot of uncertainty among housing tenants, several interviewees stressed the importance of housing authorities ensuring residents are supported throughout the process. A few interviewees said the RAD Program may present an opportunity to improve the services and resources that are easily accessible to tenants, especially in communities where new mixed-use development is planned. Filling this mixed-use space with tenants such as grocery stores or health care providers may reduce barriers to healthy living for some residents. Additionally, as mentioned in the previous section about resident education and engagement, ensuring that residents are meaningfully included in the decision-making process is also important to ensure they feel like they have a say in the future of their communities. Finally, several interviewees also noted the importance of

educating the management of housing units about resident rights and protections. Since the management of housing units may be transferred from the housing authority to a separate company in some cases, this education is vitally important to make sure residents continue to have stable housing. However, even in communities where the management is staying the same, as is likely the case in Durham, some of the RAD Program rules and regulations are different from the existing public housing program. Therefore, education for both residents and the existing management is important to ensure everyone is aware of program changes.

Recommendations: Resident Relocation Process

The impact of temporary resident relocation was one of the biggest concerns raised in the interviews conducted for this study. Recognizing that relocations may be inevitable in some cases in order to do extensive renovations and improvements, there are a few recommendations that DHA should consider in order to make sure these relocations are the least disruptive for residents. Housing authority interviewees discussed the importance of creating detailed relocation plans that describe the relocation process, how decisions will be made, and what support will be provided for residents. Some of these relocation plans include information about different populations and how to prioritize certain groups, such as the elderly, disabled, or families with children, when making decisions about relocation. Several interviewees, particularly residents and public health representatives, indicated that these plans should be developed with public input from residents to ensure residents are aware of how the process will work and can suggest ideas such as keeping families in the same school district or allowing neighbors to be relocated to the same community. Interviewees also indicated that some residents may need more support in the packing and unpacking process, which can be overwhelming for some people. This is in addition to the moving assistance that is typically provided by housing authorities, including the provision of moving supplies and moving labor. In fact, one resident interviewee mentioned that she has a disability that made it difficult for her to pack her own belongings when she was being relocated, which caused a lot of additional stress for her during an already stressful situation. Finally, almost all interviewees mentioned

the need to consider the resources and services that residents utilize on a regular basis when making decisions about relocation. If a resident has family, friends, medical providers, a church community, or other resources in close proximity, it is important to take these things into consideration when determining where someone will be moving. If temporary relocation is inevitable for some residents, several interviewees said that the housing authority should work with residents to identify new resources near their temporary home or to find ways to stay connected to their old community, through public transportation or other means.

Recommendations: Monitoring and Evaluation

Finally, as several recent reports have stated, better oversight of the RAD Program is essential to ensure it is meeting its goal of improving America's stock of public housing without causing negative impacts for current public housing residents. Several interviewees noted the need for consistent and accurate data collection and public reporting on data such as construction and financing, resident relocation, the number of residents returning after renovations are complete, evictions, and housing maintenance, among other things. In addition to these items, it is also important to monitor the enforcement of tenant protections after RAD conversion. Additionally, determinants of health, especially those discussed in this report, should also be monitored to determine what, if any, impact the RAD Program has on tenants. This data could include physical and mental health outcomes, as well as information about social determinants of health such as access to healthcare, access to healthy foods, social support systems, and other such determinants.

Limitations

When reviewing the findings of this HIA, it is important to consider some of the limitations faced throughout this study. First, two of the planned interviews were not conducted because of non-response from those contacted. Although the information gathered from the other interviews was relatively consistent from community to community, these additional interviews would have provided a more

complete picture on which to base findings and recommendations. Similarly, the limited resources available for this study means that a limited number of interviews were conducted. If there are additional resources available in the future, conducting more interviews to gain a broader perspective could be helpful. The biggest limitation to this HIA is the lack of quantitative data and empirical evidence about the health impacts of the RAD Program. Since the program is only a few years old, very little research has been done so far. As the program continues to grow, additional research and monitoring should be conducted to determine what impacts the RAD program has on tenants.

Conclusion

The RAD Program offers an opportunity for housing authorities across the United States to make necessary updates to their housing stock by converting their public housing units to project-based Section 8 assistance. Although this is widely seen as a way to mitigate some of the challenges that have resulted from years of inadequate funding for housing maintenance, the program is likely to have direct consequences for residents, including both positive and negative health impacts. These health impacts should be considered before, during, and after the program is implemented in order to protect and promote the health of some of Durham's most vulnerable populations. As one public health expert interviewed for this study said, "Housing is health care;" the Durham Housing Authority should continue to recognize the role that housing plays in the health and wellbeing of its residents.

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Appendix 1: RAD Program Conversion Schedule in Durham

Phase 1 – Projects Scheduled to Begin Within the Next Six Months	
Moreene Road 224 units	<p>This rental development was built in 1968 and has seventeen dwelling unit buildings and one non-dwelling unit building. Families occupy the two story walk-up masonry bearing walls and wood roof framing structures. The unit size bedroom distribution includes 24 zero-bedroom, 168 one-bedroom, and 32 two-bedroom units.</p> <p>Scope of work includes: installation of new electrical, plumbing, HVAC systems, interior finishes, kitchen appliances, and flooring; removal of under-counter water heaters and construction of new mechanical closet in breezeway/ installation of electric Energy Star water heater; and the modification of existing layout of the community center to include a washer/dryer area.</p>
Damar Court 102 units	<p>This rental development was built in 1967 and has seventeen dwelling unit buildings and shares a Community Center with the Moreene Road development. Families occupy the two-bedroom two-story rowhome-type wood frame with brick veneer structures.</p> <p>Scope of work includes: substantial rehabilitation/gut demolition with new dry wall in all units and the construction of a new community center; new windows, exterior doors; reconfiguration of the kitchen layout; designated laundry room; kitchen cabinets, vanities, new appliances; ducted range hoods; construction of new mechanical closet and units; new bathtub, fixtures, and lavatory; and asbestos abatement in all dwelling units.</p>
Phase 2 – Projects Schedule to Begin Within the Next Twelve Months	
Club Boulevard 77 units	<p>This rental development was built in 1969 and has seventy-seven dwelling unit buildings and one non-dwelling unit building. Families occupy single family structures. The unit size bedroom distribution includes 54 three-bedroom and 23 four-bedroom rental home units.</p> <p>Scope of work includes: demolition of all houses and construction of 106 replacement units.</p>
Scattered Site 50 units	<p>This rental development was built in 1962 and has twenty-five dwelling unit buildings and one non-dwelling unit building. Elderly individuals occupy the duplex-type wood frame with brick veneer structures. The unit size bedroom distribution includes 12 zero-bedroom and 38 one-bedroom units.</p> <p>Scope of work includes: rehabilitation of all units and renovation of the existing community center.</p>
Laurel Oaks 30 units	<p>This rental development was built in 2004 and has six dwelling unit buildings and one non-dwelling unit building. Families occupy the rowhome-type wood frame and brick veneer structures. The unit size bedroom distribution includes 30 three-bedroom units.</p>

	Scope of work includes: rehabilitation of all units and renovation of the existing community center.
Hoover Road 54 units	<p>This rental development was built in 1968 and has seven dwelling unit buildings and one non-dwelling unit building. Families occupy the rowhome-type wood frame and brick veneer structures. The unit size bedroom distribution includes 21 two-bedroom and 33 four-bedroom units.</p> <p>Scope of work includes: rehabilitation of all units and renovation of the existing community center.</p>
Phase 3 – Unscheduled Projects – Scope of Work to be Determined	
McDougald Terrace 360 units	Built in 1959, this development has fifty-nine dwelling unit buildings and one non-dwelling unit building. Families occupy the rowhome-type brick veneer structures. The unit size bedroom distribution includes 59 one-bedroom, 136 two-bedroom, 100 three-bedroom, 60 four-bedroom, and 5 five-bedroom rental units.
Cornwallis Road 200 units	This rental development was built in 1967 and has eighty-two dwelling unit buildings and one non-dwelling unit building. Families occupy the single-family duplex and rowhome-type wood frame and brick veneer structures. The unit size bedroom distribution includes 20 one-bedroom, 50 two-bedroom, 76 three-bedroom, 46 four-bedroom, 6 five-bedrooms, and 2 six-bedroom units.
Oxford Manor 172 units	This rental development was built in 1972 and has sixty-six dwelling unit buildings and one non-dwelling unit building. Families occupy the two story rowhome-type wood frame with brick veneer structures. The unit size bedroom distribution includes 50 two-bedroom, 34 three-bedroom, 68 four-bedroom, and 20 five-bedroom units.
Forest Hill Heights 155 units	This rental development was built in 1981 and has eight dwelling unit buildings and one non-dwelling unit building. Senior citizens occupy the rowhome-type structures. The unit size bedroom distribution includes 20 zero-bedroom and 35 one-bedroom rental units.
JJ Henderson 178 units	This rental development was built in 1978 and has one nine-story dwelling unit building. Elderly individuals occupy the reinforced concrete frame and reinforced exterior wall high-rise elevator structure. The unit size bedroom distribution includes 141 zero-bedroom and 37 one-bedroom units.
Oldham Towers and Liberty Street 214 units	<p>Oldham Towers was built in 1969 and has one seven-story dwelling unit building and one non-dwelling unit building used to house the Resident Services Department. Elderly and non-elderly disabled individuals occupy the units. The complex consists of 50 zero-bedroom, 53 one-bedroom, and 3 three-bedroom units.</p> <p>Liberty Street was built in 1972 and has twenty-six dwelling unit buildings and one non-dwelling unit building. Families occupy the rowhome-type structures and elderly individuals occupy the two-story walk-up structures. The unit size</p>

	bedroom distribution includes 32 one-bedroom, 47 two-bedroom, and 29 three-bedroom units.
Newly Acquired Sites TBD units	Future developments of newly acquired sites.

Source: Preliminary DHA RAD Schedule (2017). Durham Housing Authority.

Appendix 2: Project Overview

A Health Impact Assessment of the Rental Assistance Demonstration Program in Durham, NC

Health Impact Assessment

There is a growing body of research connecting the built environment, such as housing and transportation, to health outcomes. Although there are obvious connections between some of these topics, such as the way indoor and outdoor air quality may affect respiratory health, there are also less established connections between policy decisions and the health of a population. A Health Impact Assessment (HIA) is one way to determine the potential health impacts of a proposed policy, project, or program before implementation in order to recommend changes that will protect and promote health. The use of HIA has been growing in the United States and it can be an effective tool to determine how a policy will impact health, and ways to mitigate negative health impacts before the policy is implemented.

The Rental Assistance Demonstration Program

The Rental Assistance Demonstration (RAD) Program is a federal program aimed at improving America's stock of public housing by converting current public housing units to project-based Section 8 assistance.¹ Additional capital would become available to renovate or build new units and ownership of these units could be transferred to nonprofit and private entities. Given the country's public housing capital-needs backlog of \$25.6 billion in 2010, and the deteriorating condition of public housing throughout the country, this program has been viewed as an opportunity to drastically improve public housing conditions while also establishing a more stable funding stream for future improvements. Although the RAD Program has only been in existence since 2013, it has been growing rapidly throughout the country.² Despite this growth, little research has been done to determine the impacts this policy will have on current public housing residents.

Potential Health Impacts of the RAD Program

The implementation of the RAD Program in Durham could have many impacts on current public housing residents, many of which could be related to health. The RAD Program may impact health through mechanisms such as: changes in the type of management in public housing; changes in housing quality, affordability, and stability; changes in resident organizing and social capital; and changes in the potential for resident displacement. Each of these potential changes under the RAD Program may impact health, either positively or negatively. The improved physical conditions of housing units could have positive impacts on the health of residents since environmental hazards such as poor air quality and infestations will be less prevalent. However, changes in the type of management, changes in opportunities for resident organizing and social capital, and changes in the potential for resident displacement may not necessarily have a similar positive impact on the health of residents; these changes may even lead to negative health impacts for current public housing residents.

Research Purpose

As the RAD Program continues to expand throughout the country, understanding the potential impacts faced by current residents of public housing will be important. This master's project will consist of an HIA of the RAD Program in Durham. The following goals have been identified for this HIA:

1. To determine the potential health impacts of implementing the RAD Program in Durham, NC.

¹ Hanlon, J. (2017). The Origins of the Rental Assistance Demonstration Program and the End of Public Housing. *Housing Policy Debate*, 27(4), 611–639. <http://doi.org/10.1080/10511482.2016.1262445>

² Schwartz, A. (2017). Future Prospects for Public Housing in the United States: Lessons from the Rental Assistance Demonstration Program. *Housing Policy Debate*, 27(5), 789–806. <http://doi.org/10.1080/10511482.2017.1287113>

2. To recommend changes to the Durham Housing Authority's RAD Program implementation plan in order to protect and promote health of Durham Housing Authority residents.

An important step in this study is to conduct a series of interviews with public housing leadership and subject-matter experts in public housing and health to better understand the potential health impacts of the RAD Program on public housing residents. Interviews will be conducted with representatives in Durham, North Carolina as well as three additional case study communities. Results will be included in a master's paper; comments will be anonymous to protect the confidentiality of participants.

This University of North Carolina Institutional Review Board has approved this study (No. 17-3217).

Appendix 3: Focus Group Guide

Note: The purpose of this focus group guide is to solicit perspectives from current Durham Housing Authority residents to better understand the potential health impacts of the Rental Assistance Demonstration (RAD) Program on public housing residents. This is a semi-structured discussion guide, which will enable the moderator to lead conversations in whichever direction is appropriate. This approach will ensure general consistency in topics discussed across interviews while also encouraging participants to generate new ideas not documented in the current literature.

Introduction and obtaining consent to record

Thank you for participating in this focus group for my master's paper study assessing the potential health impacts of the Rental Assistance Demonstration Program in Durham, North Carolina. Before we get started, I have a few housekeeping items. Your participation in this study is voluntary and you have the option to decline to answer any question. Additionally, I will not attribute any statements to you when reporting the results. With your permission, I would like to record this interview. The recording will not be distributed and is intended to serve as a record that I can reference later while I continue to work on this project. Is it alright with you if I record this interview?

- ***If all participants agree to be recorded:*** Great, thank you. Do you have any questions for me before we start the recording? *(If no, then proceed; if yes, answer interviewees' questions)*. I am going to start the recording now. *(Start recording)*. This is Katey Mote, conducting a focus group for my master's paper project. It is _____ *(time)* on _____ *(date)*. Do you consent to being interviewed? *(Consent is given by each participant)*. Do you consent to this interview being recorded? *(Consent is given by each participant)*. Thank you.
- ***If any participant declines to be recorded:*** I understand. Instead of recording our conversation, I am going to take notes by hand.

Interview questions

Some people think that changes to public housing under RAD could lead to improved housing conditions. Improved housing conditions could lead to fewer rodents or bugs (which could reduce environmental asthma triggers), less mold, or better heating which could improve health. However, other people may be afraid that changes in ownership and management might lead to greater stress (triggering depression or anxiety), or reduced social cohesion amongst the tenants. For this study, I'm interested in learning what you think the positives and negatives of the RAD Program could mean for Durham public housing residents – particularly as it relates to health impacts.

1. I'd like to start by asking you a few questions about your awareness of and thoughts about the RAD Program.
 - a. Are you aware of the RAD Program that will be implemented by the Durham Housing Authority?
 - b. What is your understanding of the way the RAD Program will be implemented in your community?
 - c. What impact do you think the RAD Program will have on your community?
 - d. Do you have any concerns about the implementation of the RAD Program?
 - e. Are you aware of any concerns other residents have about the implementation of the RAD Program?
2. Now, I'd like to ask more specific questions about the potential health impacts the RAD Program may have on public housing residents.

- a. Are you aware of any potential health impacts (positive or negative) the RAD Program may have on you and/or fellow public housing residents?
 - *If unsure, prompt with the following categories:*
 - *Changes in the type of management in public housing;*
 - a. *Changes in residency rules; changes in unit maintenance*
 - *Changes in housing quality;*
 - a. *Changes in exposure to housing hazards (air quality, pests, etc.)*
 - *Changes in housing affordability;*
 - a. *Changes in housing access; changes in disposable income*
 - *Changes in housing stability;*
 - a. *Changes in housing access*
 - *Changes in resident organizing and social capital; (the networks and relationships residents have in the community);*
 - a. *Changes in social cohesion; changes in civic engagement*
 - *Changes in the potential for resident displacement*
 - a. *Changes in housing access*
 - *RAD Program implementation process*
 - a. *Changes in civic engagement; changes in housing access*
 - b. How do you know about these health impacts? Is this theoretical or is this something you have experienced or heard from others?
3. Now, I'd like to talk more about potential ways to improve the implementation of the RAD Program to protect and promote health of public housing residents.
 - a. Are there any changes that you would like to see made to the RAD Program implementation plan in order to protect and promote health of public housing residents?
 - b. If so, what changes would you make?
 - c. What do you think should be the top priority for the Durham Housing Authority as they move forward with the RAD Program implementation plan?
 4. Is there anything else you think is relevant or interesting for me to know as part of this project?

End the focus group

We have reached the end of the focus group. Thank you again for your time and for your willingness to participate – I really appreciate it. Do you have any final questions for me? *(If yes, answer the questions; if no, end the focus group).*

(End recording).

Note: a follow-up thank-you email or letter should be sent to each participant within 72 hours of their participation in the survey.

Appendix 4: Key Informant Interview Guide

Note: The purpose of this interview guide is to solicit perspectives from public housing leadership and subject-matter experts in public housing and health to better understand the potential health impacts of the Rental Assistance Demonstration (RAD) Program on public housing residents. This is a semi-structured discussion guide, which will enable the moderator to lead conversations in whichever direction is appropriate. This approach will ensure general consistency in topics discussed across interviews while also encouraging participants to generate new ideas not documented in the current literature.

Introduction and obtaining consent to record

Hello Ms./Mr./Dr. _____. This is Katey Mote, calling to interview you for my master's paper study. Before we get started, I have a few housekeeping items. As I mentioned in my email, your participation in this study is voluntary and you have the option to decline to answer any question. Additionally, I will not attribute any statements to you when reporting the results. With your permission, I would like to record this interview. The recording will not be distributed and is intended to serve as a record that I can reference later while I continue to work on this project. Is it alright with you if I record this interview?

- ***If interviewee agrees to be recorded:*** Great, thank you. Do you have any questions for me before we start the recording? *(If no, then proceed; if yes, answer interviewee's questions)*. I am going to start the recording now. *(Start recording)*. This is Katey Mote, conducting a phone interview for my master's paper project. It is _____ *(time)* on _____ *(date)*. Do you consent to being interviewed? *(Consent is given)*. Do you consent to this interview being recorded? *(Consent is given)*. Thank you.
- ***If interviewee declines to be recorded:*** I understand. Instead of recording our conversation, I am going to take notes by hand.

Interview questions

Some people think that changes to public housing under RAD could lead to improved housing conditions. Improved housing conditions could lead to fewer rodents or bugs (which could reduce environmental asthma triggers), less mold, or better heating which could improve health. However, other people may be afraid that changes in ownership and management might lead to greater stress (triggering depression or anxiety), or reduced social cohesion amongst the tenants. For this study, I'm interested in learning what you think the positives and negatives of the RAD Program could mean for Durham public housing residents – particularly as it relates to health impacts.

I am going to ask you for your thoughts on the Rental Assistance Demonstration (RAD) Program that has been implemented by the _____ *[insert name of local public housing authority]*. I would like to know more about your experience with the program, the potential health impacts (both positive and negative) you think this program may have on public housing residents, and any potential ways to improve the implementation of the RAD Program to protect and promote health of public housing residents. I have provided you with a description of my project for your reference.

1. I'd like to start by asking you a few questions about your experience with and awareness of the RAD Program.
 - a. Are you aware of the RAD Program being implemented by the _____ *[insert name of local public housing authority]*?
 - b. How does your work with _____ *[insert name of organization]* intersect with the RAD Program being implemented by the _____ *[insert name of local public housing authority]*?

- c. How did _____ *[insert name of local public housing authority]* educate or engage public housing resident before and during the RAD Program implementation process?
 - d. What impact do you think the RAD Program will have/has had on your community or residents of public housing?
 - e. Are you aware of any concerns current public housing residents have about the implementation of the RAD Program?
2. Now, I'd like to ask more specific questions about the potential health impacts the RAD Program may have on public housing residents.
 - a. Were there any concerns about potential health impacts the RAD Program may have on public housing residents prior to implementation in your community?
 - b. Do you know of any health impacts the RAD Program implementation has had on public housing residents in your community since implementation began?
 - How do you know about these health impacts? Is this theoretical or is this something you have experienced or heard from others?
 - c. Are you aware of any other potential health impacts (positive or negative) the RAD Program may have on public housing residents?
 - *If unsure, prompt with the following categories:*
 - *Changes in the type of management in public housing;*
 - a. *Changes in residency rules; changes in unit maintenance*
 - *Changes in housing quality;*
 - a. *Changes in exposure to housing hazards (air quality, pests, etc.)*
 - *Changes in housing affordability;*
 - a. *Changes in housing access; changes in disposable income*
 - *Changes in housing stability;*
 - a. *Changes in housing access*
 - *Changes in resident organizing and social capital; (the networks and relationships residents have in the community);*
 - a. *Changes in social cohesion; changes in civic engagement*
 - *Changes in the potential for resident displacement*
 - a. *Changes in housing access*
 - *RAD Program implementation process*
 - a. *Changes in civic engagement; changes in housing access*
3. Now, I'd like to talk more about potential ways to improve the implementation of the RAD Program to protect and promote health of public housing residents.
 - a. Are there any changes that you would have made to the RAD Program implementation plan in order to protect and promote health of public housing residents?
 - b. If so, what changes would you make?
 - c. Do you have suggestions based on your own experience for other jurisdictions who are just starting to implement the RAD Program now?
4. Is there anything else you think is relevant or interesting for me to know as part of this project?

End the interview

We have reached the end of the interview. Thank you again for your time and for your willingness to participate – I really appreciate it. Do you have any final questions for me? *(If yes, answer the questions; if no, end the interview).*

(End recording).

Note: a follow-up thank-you email should be sent to each interviewee within 72 hours of their participation in the survey.