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Human Service Needs and Disaster Displacement

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Contents

Exhibits

Overview

Introduction

Disaster displacement refers to the involuntary movement of residents from their homes and community because of an external phenomenon for a temporary, short-term, or long-term period. There are approximately 1 million new disaster displacements in the United States every year. After being displaced by a disaster, people often have critical human services needs in areas such as housing, income support, transportation, employment, and education. These needs can be acute for people with low incomes. A combination of federal, state, and local emergency management and human services agencies and nonprofit, community, and faith-based organizations work to address these needs. This report summarizes existing literature on disaster displacement and human services.

The Office of Human Services Emergency Preparedness and Response in the Administration for Children and Families (ACF) at the U.S. Department of Health and Human Services, in collaboration with ACF's Office of Planning, Research, and Evaluation, engaged Mathematica to review and summarize existing literature and available resources on disaster displacement and human services. The findings from this review can help human services agencies understand common key terms that describe disaster displacement, the relationship between disasters and displacement in the United States, how people and communities affected by disaster displacement access human services, and outcomes for affected people and communities. Additional research on the gaps in existing literature could help the field of human services better understand, plan for, and respond to disaster displacement.

Primary research questions

This report addresses four key research questions:

1. How does the literature define key terms, and what vocabulary (if any) is commonly used to describe disaster displacement?
2. What is the relationship between disasters and displacement in the United States?
3. How do people and communities affected by disaster displacement access necessary human services?
4. What are the short- and long-term outcomes for people and communities affected by disaster displacement?

Purpose

This report summarizes existing literature and available resources on disaster displacement and human services. The findings in this report can provide useful insights to policymakers, agencies, and organizations that provide human services to people displaced by disasters.

Key Findings and Highlights

- Terms used to define disaster displacement vary, but common concepts include impacted and host communities, short-term and long-term displacement, and disaster recovery.
- Disaster displacement in the United States is primarily caused by storms, flooding, and wildfires.
- Disaster displacement is a complex process, and displaced people have varying experiences. Displacement typically occurs as a response to evacuation orders before a disaster incident or when

damage caused by a disaster renders a family's home or community unlivable. Research suggests that the people most vulnerable to disaster displacement are those who lack resources before the disaster incident, such as those experiencing homelessness, food insecurity, and unemployment, and people from low-income communities and communities of color.

- Human services for people displaced by disasters are often focused on housing and delivered by many agencies and organizations. Housing is the most immediate need. Other critical needs include income support, transportation, schools, child care, and jobs. Delivery of human services to people displaced by disasters largely relies on federal funding and involves state and local human services agencies, as well as nonprofit, community-based, and faith-based organizations.
- Disasters and the resulting displacement negatively affect outcomes for individuals and communities. People displaced by disasters report higher levels of emotional stress and financial hardship in the months and years following the disaster.
- Recommendations found in the literature include improving resiliency planning and developing a deeper understanding of the long-term needs of displaced people and the communities affected by disasters, and investing more to meet those needs.
- Significant gaps exist in the reviewed literature. Additional research on these gaps could help the field of human services better understand, plan for, and respond to disaster displacement.

Methods

To identify sources for the literature review, the research team asked five experts with relevant affiliations and backgrounds for initial input on the review's scope. The team then conducted a methodical review to find and select relevant academic and grey literature. After reviewing the selected literature, the team sought to fill in gaps and asked authors of key studies to recommend additional literature. Ultimately, the team reviewed 81 sources, which are summarized in this report.

Executive Summary

As part of the Administration for Children and Families (ACF) Evidence Capacity Support (EvCap Support) project, Mathematica worked with ACF's Office of Human Services Emergency Preparedness and Response (OHSEPR) regarding disaster displacement and human services. OHSEPR leads, strengthens, and synchronizes human services to prepare, respond, and recover from emergencies and crises. Mathematica and Child Trends are conducting the EvCap Support project, in collaboration with the Office of Planning, Research, and Evaluation in ACF.

The goal of the engagement with OHSEPR is to review, understand, and compile existing literature and available resources on human services and disaster displacement. Specifically, we sought to understand how the literature defines key terms to describe disaster displacement, explores the relationship between disasters and displacement in the United States, describes how people and communities affected by disaster displacement access human services, and identifies outcomes for affected people and communities. Our review focused on human services needs and provision, particularly those for people with low incomes, in areas such as housing, income support, employment, and education. This executive summary describes the methodology, findings, and key gaps identified from the literature review.

In this report, **disaster displacement** refers to the involuntary movement of residents from their home and community because of an external phenomenon for a temporary, short-term, or long-term period.

Methodology

To identify sources for the literature review, the team gathered initial input on the review's scope from five experts with relevant affiliations and backgrounds. The team then conducted a methodical review to identify and select relevant academic and grey literature. After reviewing the selected literature, the team sought to fill in gaps and solicited recommendations of additional literature from authors of key studies. A description of the review process and list of consulted experts are included in the Methodology section of the report. Ultimately, our review included 81 sources. We summarize the reviewed literature in this report.

Background and overview of findings.

Throughout the literature, several terms were used interchangeably to define concepts related to disaster displacement. This variation made it difficult to identify a clear set of commonly accepted terms and definitions. The research reviewed for this report tended to focus on specific, large-scale disasters (such as Hurricane Katrina), instead of analyzing human services processes and patterns across disasters. Further, within the literature on specific disasters, most literature tended to concentrate on specific disaster-related elements or contexts (Boin et al. 2019). For example, findings from the literature generated valuable insights on the post-disaster human services needs of children and families, the experiences of people with low incomes facing long-term displacement after Hurricane Katrina, and recommendations on how government and nongovernmental agencies can better coordinate service delivery. However, none of the resources we reviewed offer a holistic understanding of how people experience displacement in different regions or across type and scale of disaster.

The reviewed resources also did not provide a holistic understanding of the process of delivering and accessing necessary human services for the displaced. The literature addressed post-disaster government support programs, disaster case management, and faith-based and community organizations, but our sources primarily discussed these topics independently of one another. Few resources included examples of how the various support agencies work together, and none provided a clear narrative of how someone might access necessary human services once displaced.

Given these inconsistencies and limitations in the literature, it is a challenge to thoroughly understand disaster displacement in the United States and how the human services field responds to and supports people displaced by disasters. Recognizing these gaps, this report synthesizes key terms and concepts from the literature, including temporary and short-term post-disaster needs of people displaced by a disaster, and the process of accessing and delivering human services within impacted and host communities.

Terms used to define disaster displacement vary, but common concepts include impacted and host communities, short-term and long-term displacement, and disaster recovery.

Based on the available literature, we define a small set of terms for which there is a common definition. We use the following key terms throughout this report:

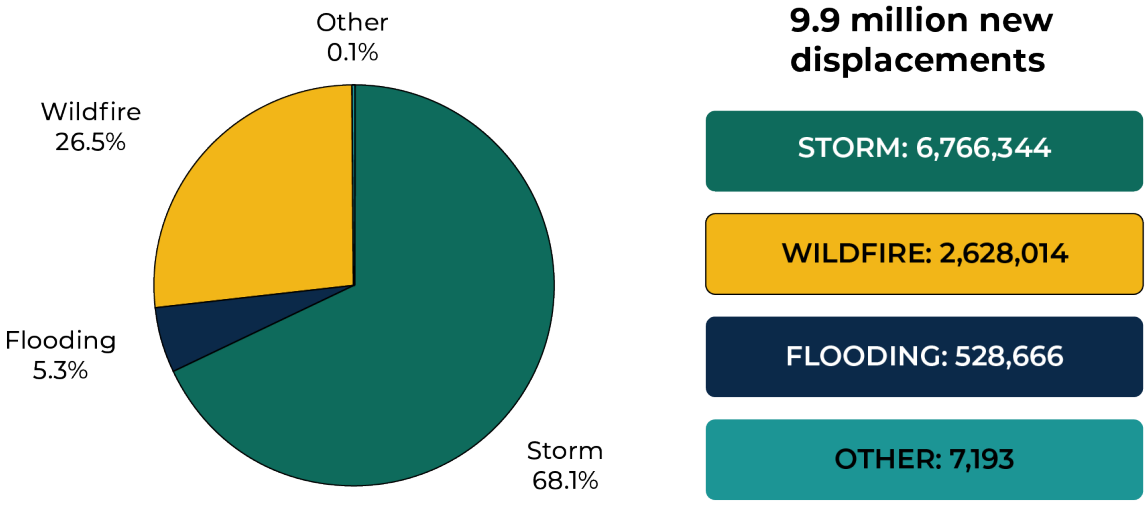
- **Disaster displacement** refers to the involuntary movement of residents from their home and community because of an external phenomenon. This movement can be classified as **temporary**, when the displacement is shorter than three months; **short term**, when displacement lasts between three months and one year; or **long term** when displacement is longer than a year (Black et al. 2012).
- **Impacted community** describes the locality directly affected by a disaster. For example, in a wildfire, this would be the community where fire destroys or damages homes and other structures (Levine et al. 2007).
- **Host communities** describes the localities that the disaster does not directly affect or that sustain less damage but receive and host a significant number of displaced people from the impacted community (Levine et al. 2007).
- **Disaster recovery** refers to the process of restoring jobs and services to the local economy, social and interpersonal connections between individuals, and community activity to pre-disaster levels within the disaster-affected community (Spokane et al. 2013).
- **Sudden-onset disasters** include hurricanes and wildfires and are characterized by a rapid onset combined with a relatively short duration; these disasters last only a few days or weeks (Li et al. 2021).
- **Slow-onset disasters** include sea-level rise or more frequent and intense heat waves, and their cumulative effects can take years to become apparent. Slow-onset disasters are often associated with and precipitated by climate change (Internal Displacement Monitoring Centre [IDMC] and Norwegian Refugee Council [NRC] 2021; Black et al. 2012).[1]

[1] Although the reviewed research provided a definition of slow-onset disasters, little research addressed how slow-onset disasters relate to displacement.

Disaster displacement in the United States is primarily caused by storms, flooding, and wildfires.

Storms, flooding, and wildfires are the primary causes of displacement in the United States. Currently, the United States averages more than one million new displacements of individuals a year caused by natural disasters. Among the natural disasters that cause displacement, storms (including associated flooding) and wildfires cumulatively account for 99.9 percent of displacements. This can be attributed to the span and severity of damage these disasters can cause to homes and other structures (IDMC and NRC 2018). Exhibit 1 summarizes disaster displacement in the United States from 2008 to 2020.

Exhibit 1. Number of people displaced by disasters in the United States from 2008 to 2020



Source: IDMC and NRC 2021.

Notes: The storm category includes hurricanes, heavy rains, tropical storms or thunderstorms, tornadoes, and blizzards. These incidents might lead to severe flooding, which could be recorded a second time in the data as either a flood incident or storm, depending on the circumstances and source of the data. That said, the separate flood category also captures independent incidents such as levee breaches and dam failures.The category for "other" includes volcanic eruption, earthquake, wet and dry mass movement (such as mudslides or rockslides), and extreme temperature.

Displacement is a complex process resulting in varying experiences for displaced people.

Disaster displacement typically occurs as a response to evacuation orders before a disaster incident or when damage caused by a disaster renders a family's home or community unlivable. Several factors contribute to whether a person evacuates before a disaster, including financial resources, personal transportation, and access to a reliable place to shelter outside of the impacted community (Merdjanoff et al. 2019).

Those with adequate resources and connections might find temporary shelter in a hotel or with family or friends. Those with fewer resources often wait out the disaster and are the most likely to rely on evacuation services provided by local emergency management once the disaster risk becomes severe (Fussell and Lowe 2014). Emergency evacuation services use public buses or vans to transport people to a

host community where they can access designated disaster shelters or other emergency housing (Bell et al. 2010).

Depending on the severity of the disaster and access to return transportation and other resources, the majority of displaced people return home within days or weeks of the disaster to assess the damage and tend to repairs. The displacement process can be prolonged if the home has been severely damaged, particularly for those who do not own their home because home insurance policies generally do not cover temporary housing for renters (Yabe et al. 2020). Other factors that prolong displacement in host communities include lack of return transportation and damaged public transportation, closed public schools and clinics, and disrupted human services networks in the impacted community. Some people choose to remain in a host community instead of returning, particularly if the social ties, housing and job market, and community resources of the impacted community have changed significantly. Those unable to find stable employment or housing often end up in an in-between space, neither settling in the host community nor returning to the impacted community. Displacement for these people is often long term and is characterized by recurring rehousing and overall housing instability (Fussell and Lowe 2014).

Marginalized populations are most vulnerable to adverse outcomes from disaster displacement. Research suggests that the people most vulnerable to disaster displacement are those who lack resources before the disaster incident, such as those experiencing homelessness, food insecurity, and unemployment, and people from low-income communities and communities of color (Levine et al. 2007; Perls 2020). After being displaced by a disaster, people without access to resources face the additional challenge of navigating complex human services systems, including new and unfamiliar systems in a host community, and are at the highest risk for negative long-term outcomes. This is especially true for vulnerable populations coping with multiple, intersecting needs (Levine et al. 2007). Populations that are particularly vulnerable to displacement and adverse outcomes include older adults and people with health risks, people with disabilities, people without access to personal transportation, and people with low incomes.

Human services for people displaced by disasters are often focused on housing and are delivered by many agencies and organizations.

Housing is the most immediate need for people displaced by disaster. Other critical human services needs include income support, transportation, schools, child care, and jobs. Access to temporary housing that provides safe shelter and a place of belonging is the most immediate need of people displaced by disaster (Lein et al. 2012). When a home is damaged by a large-scale natural disaster, a household is displaced, and the occupants must find temporary or transitional housing (Spokane et al. 2013). In most cases, people prefer to stay in or close to their original community—near their schools, jobs, and neighbors. Staying with relatives or friends outside the affected area is often an ideal short-term solution. However, for people without transportation, financial resources, or connections outside the impacted community, those options are less available. Thus, people with fewer resources are more likely to be displaced to emergency shelters; prefabricated or improvised shelters, such as manufactured housing or modular home; medical facilities; or temporary accommodations, such as churches and other faith-based and nonprofit organizations (Sadri et al. 2017; Spokane et al. 2013). In addition to housing, common short-term human services needs described in the literature include income support, transportation, school and child care, and employment opportunities.

Delivery of human services for people displaced by disasters largely relies on federal funding. Service delivery and coordination are driven by federal government structures for response and recovery.

Key federal departments that play a role in disaster response include the U.S. Department of Homeland Security (which includes the Federal Emergency Management Agency [FEMA]), the U.S. Department of Housing and Urban Development, and the U.S. Department of Health and Human Services. These federal agencies help people displaced by disasters, either directly or through impacted states or localities, and assist state and local recovery efforts. That said, federal post-disaster assistance programs are often not well understood by displaced people, and many people do not know how to access them (Ratcliffe et al. 2019).

Government and nongovernmental agencies administer services at the federal, state, and local level. At the state and local level, emergency management and human services agencies can use federal funding to support their increased administrative needs and to coordinate or adapt critical services for displaced people, such as shelter placement and transportation needs (Spearing and Faust 2020). Federal funding can flow through state and local governments to state or community service providers. It can also flow directly from the federal government to national FEMA partners (FEMA 2021; Ratcliffe et al. 2019).

Faith-based and community organizations help provide human services to people displaced by disasters. Displaced people in need of necessities such as food, water, and clothing are typically referred to one of FEMA's national relief partners, most commonly the Red Cross. The Red Cross and related partners, such as United Way and the Salvation Army, serve people through FEMA Disaster Recovery Centers and their own local offices within impacted and host communities. Most immediate post-disaster services for displaced people (such as temporary shelter, mass food distribution, emergency first aid, and distribution of FEMA information) are coordinated by a network of faith-based nonprofits and community organizations called voluntary organizations active in disaster (Ratcliffe et al. 2019). Secular and faith-based nonprofits play a significant role in delivering disaster case management—a service that supports the post-disaster recovery process by connecting people to available human services and helping them navigate federal post-disaster assistance programs (Bell et al. 2010).

Disasters and the resulting displacement negatively affect outcomes for individuals and communities.

When a person or family is displaced from their community, social structures, and culture, their ability to cope with stressful events is hindered (Merdjanoff 2013). People who have been displaced by disasters report higher levels of emotional stress and financial hardship in the months and years following the disaster. Children who are forced to miss school or are placed in a new school during periods of disaster displacement often struggle academically and socially (Lowe et al. 2013). These stressors occur for many displaced people and families and present themselves regardless of means and demographics. However, the severity, duration, and eventual outcomes differ greatly if a person has limited social or financial resources before being displaced. For example, people with low incomes who do not own their homes are more likely to experience prolonged periods of displacement and housing instability after a disaster (Merdjanoff 2013). Housing instability—and the associated lack of safety, certainty, opportunity, and community—is widely considered the main impediment to long-term social, emotional, and economic post-disaster recovery (Fothergill and Peek 2015).

At the community level, the employment and economic environments of impacted communities are likely to change in the wake of a disaster. This often includes a depletion of the available affordable housing. Together, these shifts can fundamentally change the impacted community and present challenges during recovery after a disaster. Host communities are frequently overlooked in disaster displacement planning and coordination efforts. The sudden influx of displaced people in host communities following a disaster

strains the host community's infrastructure, including increased traffic and stress on public services and utilities such as water, sewage and power, and school resources (Speier et al 2018).

Recommendations include improving resiliency planning and developing a greater understanding of and investment in the long-term needs of displaced people and the communities affected by disasters.

Research suggests that existing public efforts should increase focus on resiliency planning for high-risk disaster regions, especially those communities with significant populations with low incomes. Disaster resiliency planning is a proactive approach to managing disasters aimed at improving the ability of communities to plan for and recover from future disasters, ultimately reducing the impact of disasters on a community (Kyne and Aldrich 2019; Institute of Medicine 2015). It typically involves establishing communication and collaboration with stakeholders and community members, assessing needs, collaboratively developing a plan before a disaster happens, and reassessing and planning after a disaster.

In addition, public policy efforts to support displaced people could be improved by a greater focus on displacement related to climate change and slow-onset disasters (Ratcliffe et al. 2019; Li et al. 2021); simplifying the process for displaced people to find and access human services after a disaster (Ratcliffe et al. 2019; Institute of Medicine 2015); and providing more supports for host communities, improving coordination between host and impacted communities, and supporting communities just outside disaster declaration zones that act as unofficial support hubs for disaster response and recovery (Spearing and Faust 2020; Yabe et al. 2020).

Significant gaps exist in the reviewed literature.

During this review, the study team identified several notable gaps in the literature on disaster displacement and human services. These gaps, often confirmed by the experts engaged by the team, suggest the field would benefit from further research and from the use of more diverse research methods beyond case studies and a focus on large-scale disasters. Notable gaps in the research include information about the following:

- Needs and resources for delivering human services beyond housing support, such as child care, employment, and education;
- Human services needs and resources for certain marginalized populations, such as people experiencing homelessness before a disaster, people experiencing domestic violence, and people living in foster care systems or institutionalized settings;
- Long-term outcomes for people displaced by disasters;
- Coordination and implementation of human services during and following disasters;
- Experiences, needs, and long-term outcomes of host communities; and
- Slow-onset disasters, such as sea-level rise and frequent heat waves, and their relationship to disaster displacement.

Additional research on these topics could help the field of human services better understand, plan for, and respond to disaster displacement.

I. Introduction

As part of the Evidence Capacity Support (EvCap Support) project, Mathematica conducted an engagement for the Office of Human Services Emergency Preparedness and Response (OHSEPR) regarding disaster displacement and human services. The EvCap Support project is being conducted by Mathematica and Child Trends, the contractors working with the Office of Planning, Research, and Evaluation in the Administration for Children and Families (ACF). OHSEPR leads, strengthens, and synchronizes human services to prepare, respond, and recover from emergencies and crises.

The goal of this engagement is to review, understand, and compile existing literature and available resources on human services and "disaster displacement." Our review focused on human service needs and provision, particularly those for people with low incomes, in areas such as housing, income support, employment, and education. The EvCap Support team engaged with experts, reviewed selected literature, and summarized the collected information.

Defining disaster displacement:

At the start of this engagement, our working definition for disaster displacement was that disaster displacement occurs when people in a community impacted by a disaster (impacted communities) are temporarily or permanently displaced to another community (host communities). The literature reviewed helped refine this definition.

In this report, **disaster displacement refers to the involuntary movement of residents from their home and community because of an external phenomenon for a temporary, short-term, or long-term period.**

A. Research questions

The literature review addressed four key research questions:

1. How does the literature define key terms, and what language is commonly used, if any, to describe disaster displacement?
2. What is the relationship between disasters and displacement in the United States?
3. How do people and communities affected by disaster displacement access necessary human services?
4. What are the short- and long-term outcomes for people and communities affected by disaster displacement?

B. Overview of findings

Terms used to define disaster displacement vary, but common concepts include impacted and host communities, short-term and long-term displacement, and disaster recovery. Throughout the literature, several terms were used interchangeably to define concepts related to disaster displacement. This variation made it difficult to identify a clear set of commonly accepted terms and definitions. The research reviewed for this report tended to focus on specific, large-scale disasters (such as Hurricane Katrina), instead of analyzing human services processes and patterns across disasters. Further, within the literature on specific disasters, most literature tended to concentrate on specific disaster-related elements or contexts (Boin et al. 2019). For example, findings from the literature generated valuable insights on the post-disaster human services needs of children and families, the experiences of people with low incomes facing long-term displacement after Hurricane Katrina, and recommendations on how government and nongovernmental agencies can better coordinate service delivery. However, none of the resources we

reviewed offer a holistic understanding of how people experience displacement in different regions or across type and scale of disaster.

The reviewed resources also did not provide a holistic understanding of the process of delivering and accessing necessary human services for the displaced. The literature addressed post-disaster government support programs, disaster case management, and faith-based and community organizations, but our sources primarily discussed these topics independently of one another. Few resources included examples of how the various support agencies work together, and none provided a clear narrative of how someone might access necessary human services once displaced.

Given these inconsistencies and limitations in the literature, it is a challenge to thoroughly understand disaster displacement in the United States and how the human services field responds to and supports people displaced by disasters. Recognizing these gaps, the report synthesizes key terms and concepts, including temporary and short-term post-disaster needs of people displaced by a disaster, and the process of accessing and delivering human services within impacted and host communities.

Based on the available literature, we define a small set of terms for which there is a common definition. We use the following key terms throughout this report:

- **Disaster displacement** refers to the involuntary movement of residents from their home and community because of an external phenomenon. This movement can be classified as **temporary**, when the displacement is shorter than three months; **short term**, when displacement lasts between three months and one year; or **long term,** when displacement is longer than a year (Black et al. 2012).
- **Impacted community** describes the locality directly affected by a disaster. For example, in a wildfire, this would be the community where fire destroys or damages homes and other structures (Levine et al. 2007).
- **Host communities** describes the localities that the disaster does not directly affect or that sustain less damage but receive and host a significant number of displaced people from the impacted community (Levine et al. 2007).
- **Disaster recovery** refers to the process of restoring jobs and services to the local economy, social and interpersonal connections between individuals, and community activity to pre-disaster levels within the disaster-affected community (Spokane et al. 2013).
- **Sudden-onset disasters** include hurricanes and wildfires and are characterized by a rapid onset combined with a relatively short duration; these disasters last only a few days or weeks (Li et al. 2021).
- **Slow-onset disasters** include sea-level rise or more frequent and intense heat waves, and their cumulative effects can take years to become apparent. Slow-onset disasters are often associated with and precipitated by climate change (Internal Displacement Monitoring Centre [IDMC] and Norwegian Refugee Council [NRC] 2021; Black et al. 2012).[2]

Disaster displacement in the United States is primarily caused by storms, flooding, and wildfires. Storms, flooding, and wildfires are the primary causes of displacement in the United States. Currently, the United States averages more than one million new displacements of individuals a year, all of which are caused by natural disasters. Among the natural disasters that cause displacement, storms (including

[2] Although the reviewed research provided a definition of slow-onset disasters, little research addressed how slow-onset disasters relate to displacement.

associated flooding) and wildfires cumulatively account for 99.9 percent of displacements. This can be attributed to the span and severity of damage these disasters might cause to homes and other structures (IDMC and NRC 2018).

Displacement is a complex process resulting in varying experiences for displaced people. Disaster displacement typically occurs as a response to evacuation orders before a disaster incident or when damage caused by a disaster renders a family's home or community unlivable. Several factors contribute to whether a person evacuates before a disaster, including financial resources, personal transportation, and access to a reliable place to shelter outside of the impacted community (Merdjanoff et al. 2019).

Those with adequate resources and connections might find temporary shelter in a hotel or with family or friends. Others often wait out the disaster and are the most likely to rely on evacuation services provided by local emergency management once the disaster risk becomes severe (Fussell and Lowe 2014). Emergency evacuation services use public buses or vans to transport people to a host community where they can access designated disaster shelters or other emergency housing (Bell et al. 2010).

Depending on the severity of the disaster and access to return transportation and other resources, the majority of displaced people return home within days or weeks of the disaster to assess the damage and tend to repairs. The displacement process can be prolonged if the home has been severely damaged, particularly for those who do not own their home because home insurance policies generally do not cover temporary housing for renters (Yabe et al. 2020). Other factors that prolong displacement in host communities include lack of return transportation and damaged public transportation, closed public schools and clinics, and disrupted human services networks in the impacted community. Some people choose to remain in a host community instead of returning, particularly if the social ties, housing and job market, and community resources of the impacted community have changed significantly. Those unable to find stable employment or housing often end up in an in-between space, neither settling in the host community nor returning to the impacted community. Displacement for these people is often long term and is characterized by recurring rehousing and overall housing instability (Fussell and Lowe 2014).

Marginalized populations are most vulnerable to adverse outcomes from disaster displacement. Research suggests that the people most vulnerable to disaster displacement are those who lack resources before the disaster incident, such as those experiencing homelessness, food insecurity, and unemployment, and people from low-income communities and communities of color (Levine et al. 2007; Perls 2020). After being displaced by a disaster, people without access to resources face the additional challenge of navigating complex human services systems, including new and unfamiliar systems in a host community, and are at the highest risk for negative long-term outcomes. This is especially true for vulnerable populations coping with multiple, intersecting needs (Levine et al. 2007). Populations that are particularly vulnerable to displacement and adverse outcomes include older adults and people with health risks, people with disabilities, people without access to personal transportation, and people with low incomes.

Human services for people displaced by disasters are often focused on housing and are delivered by many agencies and organizations. Housing is the most immediate need for people displaced by disaster. Other critical human services needs include income support, transportation, schools, child care, and jobs. Access to temporary housing that provides safe shelter and a place of belonging is the most immediate need of people displaced by disaster (Lein et al. 2012). When a home is damaged by a large-scale natural disaster, a household is displaced, and the occupants must find temporary or transitional housing (Spokane et al. 2013). In most cases, people prefer to stay in or close to their original community—near their schools, jobs, and neighbors. Staying with relatives or friends outside the affected area is often an

ideal short-term solution. However, for people without transportation, financial resources, or connections outside the impacted community, those options are less available. Thus, people with fewer resources are more likely to be displaced to emergency shelters; prefabricated or improvised shelters, such as manufactured housing or modular homes; medical facilities; or temporary accommodations, such as churches and other faith-based and nonprofit organizations (Sadri et al. 2017; Spokane et al. 2013). In addition to housing, common short-term human services needs described in the literature include income support, transportation, school and child care, and employment opportunities.

Delivery of human services for people displaced by disasters largely relies on federal funding. Service delivery and coordination are driven by federal government structures for response and recovery. Key federal departments that play a role in disaster response include the U.S. Department of Homeland Security (DHS) (which includes the Federal Emergency Management Agency [FEMA]), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Health and Human Services (HHS). These federal agencies help people displaced by disasters, either directly or through impacted states or localities, and assist state and local recovery efforts. That said, federal post-disaster assistance programs are often not well understood by displaced people, and many people do not know how to access them (Ratcliffe et al. 2019).

Government and nongovernmental agencies administer services at the federal, state, and local level. At the state and local level, emergency management and human services agencies can use federal funding to support their increased administrative needs and to coordinate or adapt critical services for displaced people, such as shelter placement and transportation needs (Spearing and Faust 2020). Federal funding can flow through state and local governments to state or community service providers. It can also flow directly from the federal government to national FEMA partners (FEMA 2021; Ratcliffe et al. 2019).

Faith-based and community organizations help provide human services to people displaced by disasters. Displaced people in need of necessities such as food, water, and clothing are typically referred to one of FEMA's national relief partners, most commonly the Red Cross. The Red Cross and related partners, such as United Way and the Salvation Army, serve people through FEMA Disaster Recovery Centers and their own local offices within impacted and host communities. Most immediate post-disaster services for displaced people (such as temporary shelter, mass food distribution, emergency first aid, and distribution of FEMA information) are coordinated by a network of faith-based nonprofits and community organizations called voluntary organizations active in disaster (Ratcliffe et al. 2019). Secular and faith-based nonprofits play a significant role in delivering disaster case management—a service that supports the post-disaster recovery process by connecting people to available human services and helping them navigate federal post-disaster assistance programs (Bell et al. 2010).

Disasters and the resulting displacement negatively affect outcomes for individuals and communities. When a person or family is displaced from their community, social structures, and culture, their ability to cope with stressful events is hindered (Merdjanoff 2013). People who have been displaced by disasters report higher levels of emotional stress and financial hardship in the months and years following the disaster. Children who are forced to miss school or are placed in a new school during periods of disaster displacement often struggle academically and socially (Lowe et al. 2013). These stressors occur for many displaced people and families and present themselves regardless of means and demographics. However, the severity, duration, and eventual outcomes differ greatly if a person has limited social or financial resources before being displaced. For example, people with low incomes who do not own their homes are more likely to experience prolonged periods of displacement and housing instability after a disaster (Merdjanoff 2013). Housing instability—and the associated lack of safety,

certainty, opportunity, and community—is widely considered the main impediment to long-term social, emotional, and economic post-disaster recovery (Fothergill and Peek 2015).

At the community level, the employment and economic environments of impacted communities are likely to change in the wake of a disaster. This often includes a depletion of the available affordable housing. Together, these shifts can fundamentally change the impacted community and present challenges during recovery after a disaster. Host communities are frequently overlooked in disaster displacement planning and coordination efforts. The sudden influx of displaced people in host communities following a disaster strains the host community's infrastructure, including increased traffic and stress on public services and utilities such as water, sewage and power, and school resources (Speier et al. 2018).

Recommendations include improving resiliency planning and developing a greater understanding of and investment in the long-term needs of displaced people and the communities affected by disasters. Research suggests that existing public efforts should increase focus on resiliency planning for high-risk disaster regions, especially communities with significant populations with low incomes. Disaster resiliency planning is a proactive approach to managing disasters aimed at improving the ability of communities to plan for and recover from future disasters, ultimately reducing the impact of disasters on a community (Kyne and Aldrich 2019; Institute of Medicine [IOM] 2015). It typically involves establishing communication and collaboration with stakeholders and community members, assessing needs, collaboratively developing a plan before a disaster happens, and reassessing and planning after a disaster.

In addition, public policy efforts to support displaced people could be improved by a greater focus on displacement related to climate change and slow-onset disasters (Ratcliffe et al. 2019; Li et al. 2021); simplifying the process for displaced people to find and access human services after a disaster (Ratcliffe et al. 2019; IOM 2015); and providing more supports for host communities, improving coordination between host and impacted communities, and supporting communities just outside disaster declaration zones that act as unofficial support hubs for disaster response and recovery (Spearing and Faust 2020; Yabe et al. 2020).

Significant gaps exist in the reviewed literature. During this review, the study team identified several notable gaps in the literature on disaster displacement and human services. These gaps, often confirmed by the experts engaged by the team, suggest the field would benefit from further research and from the use of more diverse research methods beyond case studies and a focus on large-scale disasters. Notable gaps in the research include information about the following:

- Needs and resources for delivering human services beyond housing support, such as child care, employment, and education;
- Human services needs and resources for certain marginalized populations, such as people experiencing homelessness before a disaster, people experiencing domestic violence, and people living in foster care systems or institutionalized settings;
- Long-term outcomes for people displaced by disasters;
- Coordination and implementation of human services during and following disasters;
- Experiences, needs, and long-term outcomes of host communities; and
- Slow-onset disasters, such as sea-level rise and frequent heat waves, and their relationship to disaster displacement.

Additional research on these topics could help the field of human services better understand, plan for, and respond to disaster displacement.

II. Methodology

The literature review on human service and disaster displacement is based on multiple information sources. These sources include initial input from a variety of experts to help develop the scope of the literature review, a methodical review of selected literature, and follow-up input from experts who authored key literature. This chapter describes the methods used for each information source.

A. Initial input from experts

Gathering input from experts was an initial step in refining the research questions and defining the early stages of the literature review. To that end, the study team interviewed five experts (listed in Exhibit II.1) with relevant affiliations and backgrounds to help understand the state of the literature and to solicit input on the scope of a literature review. The study team identified the five experts in collaboration with OHSEPR and Office of Planning, Research, and Evaluation staff and through a targeted scan of literature and documents shared by OHSEPR. The team used a standard discussion guide for all interviews. The experts and their respective affiliations are listed in Exhibit II.1.

Exhibit II.1. Experts consulted for initial input

Expert	Affiliation
Seth Hassett	Senior Advisor, Office of Community Services, Administration for Children and Families, U.S. Department of Health and Human Services
Alessandra Jerolleman	Associate Professor of Emergency Management, Jacksonville State University
Marion McFadden	Senior Vice President, Public Policy & Senior Advisor for Resilience, Enterprise Community Partners
Tennille Parker	Director, Disaster Recovery and Special Issue Division, Office of Community Planning and Development, U.S. Department of Housing and Urban Development
Trevor Riggen	Senior Vice President, Disaster Cycle Services, American Red Cross

These experts almost exclusively discussed natural disasters rather than industrial disasters, and several suggested that the study team review literature on slow-onset disasters in addition to sudden-onset disasters. Furthermore, most discussion on post-disaster displacement human services needs focused on the provision of and access to housing for displaced populations. Experts identified renters as a subpopulation for whom existing disaster relief programs were often inadequate. Several experts emphasized the major effect post-disaster displacement has on vulnerable populations, such as those with low incomes or those experiencing homelessness, and suggested the team explore the particular needs of these populations. Several experts described the inadequacy of the evidence base on post-disaster displacement and human services needs and expressed support for this study. All experts recommended resources to explore (mostly grey literature that included studies, technical reports, and additional experts). The study team reviewed these materials and selected secondary sources cited in these materials for relevance to the research questions.

B. Literature review

Building on this initial input from experts, the study team developed a literature review strategy that sought to cover the field of disaster displacement, with a focus on the needs for and delivery of human services in host communities after a disaster. Recognizing that the literature addressing the need for and

delivery of human services after a disaster was most likely underdeveloped, the team initially set expansive parameters for the review. The parameters focused on identifying studies that were:

- Conducted in the United States, with a few exceptions
- Published between 2005 to 2021, with emphasis on 2011 to 2021

A list of the terms used in the search process is available in Appendix A. In addition to these terms, based on input from OHSEPR and the experts, the study team specifically sought articles related to six disasters: Hurricanes Maria and Irma; the water crisis in Flint, Michigan; the 2008 flood in Cedar Rapids, Iowa; the 2008 tornado in Greensburg, Kansas; and the wildfires that occurred between 2015 and 2020 in California.

The team conducted two types of searches to identify potential sources: academic databases and custom Google searches. Mathematica's Library Services staff carried out the initial search, querying four academic databases for journal articles and conducting custom Google searches on six websites to capture grey literature (see Appendix A for details). The study team screened the title and abstract of all identified sources to assess relevance to the literature review. This approach resulted in 652 journal articles and 220 Google search results, which we reduced to 89 sources following screening. Using a rubric, the study team then reviewed the screened-in sources in three rounds. The team first prioritized existing literature reviews and syntheses. Second, we prioritized sources that addressed multiple areas of interest, such as human services needs experienced by displaced people and service provision to address those needs. Finally, we prioritized sources that filled topical gaps not yet addressed by previously reviewed sources. At this point, the team also explored secondary sources identified in the reviewed articles as potentially relevant. Ultimately, this process resulted in 63 sources that the team reviewed.

C. Follow-up discussions with experts

The team solicited recommendations for additional literature and sought to fill in key gaps by seeking input from the authors of key studies. Some experts are no longer based in the United States, but all of them have researched disasters in the United States or held research positions at American universities located in disaster-prone areas. The experts and their respective affiliations are listed in Exhibit II.2.

Exhibit II.2. Experts consulted for additional input to fill in gaps in the literature review

Name	Affiliation
Daniel P. Aldrich	Director of the Resilience and Security Studies Program, Northeastern University
Holly Bell	Research Associate, Center for Social Work Research, The University of Texas at Austin
David Abramson	Director, Population Impact, Recovery and Resilience program, New York University
Arjen Boin	Professor of Public Institutions and Governance, Institute of Political Science, Leiden University

During these conversations, the experts discussed planning for disasters, outcomes for people and communities after displacement, and post-disaster recovery, among other topics. Several experts discussed displacement and the complexities of supporting displaced people after a disaster, including human services, tracking, and relocation support. Experts described how social networks play a large role in displacement, and how social connections can increase community resilience and recovery. Several experts discussed the decision-making roles of local, state, and federal government before, during, and after a disaster occurs, especially regarding the proper allocation of resources during recovery. All of the

experts recommended additional resources to fill in gaps in the sources identified through the literature review to inform this report. The study team screened the recommendations for relevance to the research questions and reviewed 17 additional sources that the experts recommended. Ultimately, our review included 81 sources.

III. Defining common terms in disaster displacement

A goal of the literature review was to identify commonly accepted definitions for relevant terms related to disaster displacement. Key terms to define included disasters, displacement, disaster recovery, disaster relief, impacted community, and host community. Of the 76 resources reviewed for this report, 21 included a definition of a key term. From these 21 resources, 13 of the resources included a definition for the same term, which enabled us to define a small set of terms for which there is a common definition. This chapter shares definitions for these key terms and discusses how resources varied in their definition of the terms. This variation in terminology presents challenges to bridging gaps in disaster research.

The reviewed literature most commonly describes two types of communities: impacted communities and host communities. In this report, the term **impacted community** describes the locality directly affected by a disaster. For example, in a wildfire, this would be the community where fire destroys or damages homes and other structures. **Host communities** describes the localities that the disaster does not directly affect or that sustain less damage but receive and host a significant number of displaced people from the impacted community after a disaster (Levine et al. 2007).

Impacted community: Locality directly affected by a disaster

Host community: Locality that is not directly affected by a disaster and that receives and hosts a significant number of displaced people

The reviewed literature generally categorizes natural disasters as either sudden onset or slow onset. **Sudden-onset disasters** include hurricanes and wildfires and are characterized by a rapid onset combined with a relatively short duration; these disasters last only a few days or weeks. In contrast, **slow-onset disasters** include sea-level rise or more frequent and intense heat waves, and their cumulative effects can take years to become apparent. Slow-onset disasters are often associated with and precipitated by climate change (Li et al. 2021; IDMC and NRC 2021; Black et al. 2012). The majority of reviewed literature focuses on displacement caused by sudden-onset natural disasters.

Both types of natural disasters might result in **displacement**, a term defined in the literature as the involuntary movement of residents from their home and community because of an external phenomenon. Disaster displacement typically occurs prior to a disaster incident as a response to evacuation orders or when damage caused by a disaster renders a person's home or community unlivable (Merdjanoff et al. 2019). Several resources elaborate that displacement might result from a natural disaster or other factors, including in response to physical, economic, environmental harm (Levine et al. 2007) or climate change (Bratspies et al. 2018). Miller and Vu (2021) note the difficulty in precisely defining displacement, observing that authors use several terms interchangeably, including displacement, migration, movement, and relocation. For example, some authors use "relocation" interchangeably with "displacement" to mean movement of people (not necessarily involuntary) for seasonal or permanent resettlement (Bratspies et al. 2018).

Displacement: Involuntary movement of residents from their home and community because of an external phenomenon

Disaster recovery: The return of a disaster-affected community to its pre-disaster condition

One distinction in displacement relates to length. Black et al. (2012) classifies displacement by three periods: **temporary** when the displacement is less than three months; **short-term** when displacement lasts between three months and one year; and **long-term migration** when displacement is longer than a

year. Groen and Polivka (2008) discuss the reverse process of displacement: that of residents returning to their original community. He suggests that such a condition could be determined by the relocation of a resident to the county in which they had previously resided before they were displaced.

Another key term is **disaster recovery**, for which there were multiple definitions. Essentially, the term refers to the process of restoring economic viability, interpersonal functioning, and community activity to pre-disaster levels within the disaster-affected community (Spokane et al. 2013). The literature acknowledged the complexity of specifying the conditions for a community to qualify as recovered and observes a lack of agreement in the literature about when a recovery is considered complete (IOM 2015). Spokane and et al. (2013) specify that disaster recovery includes a return of economic viability, interpersonal function, and community activity, and emphasize that the return to normal social processes (that is, collective social ties and interpersonal relationships between community members) in neighborhoods and communities is an integral part of recovery. IOM (2015) details three stages of recovery:

1. **Short-term recovery,** or the restoration of essential services to ensure health and safety and provide basic infrastructure needs. This is a precursor to further recovery.
2. **Intermediate recovery**, or the return of individuals, families, critical infrastructure, and basic government and commercial services to a functional level.
3. **Long-term recovery,** or the complete restoration of a disaster-impacted area, a process that can take months or years.

Some authors highlight a distinction between disaster recovery and **disaster relief**. For example, Boris and Steuerle (2006) determine that relief focuses on the immediate and basic life-support processes that immediately follow a disaster. This includes providing food and shelter to people displaced by the disaster. In contrast, recovery is a longer process that includes restoring homes, neighborhoods, and systems to pre-disaster conditions.

Disaster relief: The delivery of immediate and basic life-support processes following a disaster, including provision of food and shelter to those displaced

Resilience: The ability of an individual, family, organization, system, or community to effectively recover from a disaster

Resilience is another key term defined consistently across resources. **Resilience** reflects the ability of an individual, family, organization, system, or community to effectively recover from a disaster (U.S. Department of Housing and Urban Development [HUD] 2013; Glandon et al. 2008; Bratspies et al. 2018). A HUD report (2013) on Hurricane Sandy identifies the importance of state and local government in resilience post-disaster. Specifically, government can foster a resilient system through flexible and adaptative management, additional staff capacity, and feedback systems. Elaborating on the definition of resilience, IOM (2015) identifies that community resilience can occur when there are policies and practices that (1) promote social connection, (2) enable access to health care, (3) support healthy behaviors, (4) create a culture of preparedness, and (5) leverage community partnerships for service delivery during a disaster. Levine et al. (2007) define social vulnerability as the relative ability of an individual, household, or community to respond appropriately to threatening conditions. Lack of income, lack of transport, age, disability, minority status, lack of information, and numerous other factors can contribute to social vulnerability (Levine et al. 2007).

The upcoming chapters will consistently use these terms, as defined in this chapter, and further explore how literature uses these terms. Our literature review on human service needs and disaster displacement also identified an opportunity to help build a consistent vocabulary for disaster displacement by identifying terms not defined in the literature and suggesting definitions. Where appropriate, in the following chapters, we suggest definitions for terms needing one.

IV. Disasters and Displacement in the United States

In recent decades, the frequency and severity of disaster-related displacements in the United States has continued to increase (IDMC and NRC 2019). Currently, natural disasters account for approximately 1 million new displacements in the United States every year—making it the country with the fifth most disaster-displaced people after China, India, Philippines, and Bangladesh (IDMC and NRC 2021). Since 2018, almost 10 percent of all disaster-related displacement globally has occurred in the United States. This chapter discusses the types of disasters that lead to displacement in the United States, the populations most likely to be displaced by a disaster, and the people most vulnerable to adverse effects of disaster displacement.

A. Storms and wildfires are the primary causes of displacement in the United States

The United States is unique among countries with high rates of internal displacement. One hundred percent of its new displacements are the result of natural disasters (also called extreme weather events in the literature). In contrast, displacement in other countries results from a wider range of causes, including natural, technological, and industrial disasters, as well as civil unrest and conflict-related violence (IDMC and NRC 2019).

The United States also experiences other types of disasters, including technological disasters (for example, power blackouts or a structural collapse), industrial disasters (for example, chemical spills or gas leaks), and biological disasters (for example, an epidemic or the spread of disease-carrying agents such as mosquitos). However, unlike natural disasters, these types of disasters do not typically cause widespread destruction of homes, businesses, and infrastructure. As such, they have little to no impact on disaster displacement in the United States (IDMC and NRC 2019).

The Internal Displacement Monitoring Centre (IDMC), an organization solely dedicated to monitoring and assessing within-country displacement, has been collecting data on displacement since 2008. The IDMC gathers data on displacement in the United States from FEMA, local or state emergency management offices, the American Red Cross, and local media reporting. [3] Because data are compiled from different sources, the IDMC data may not fully capture the total number of displacements in the United States. Exhibit IV.1 summarizes disaster displacement in the United States from 2008 to 2020.

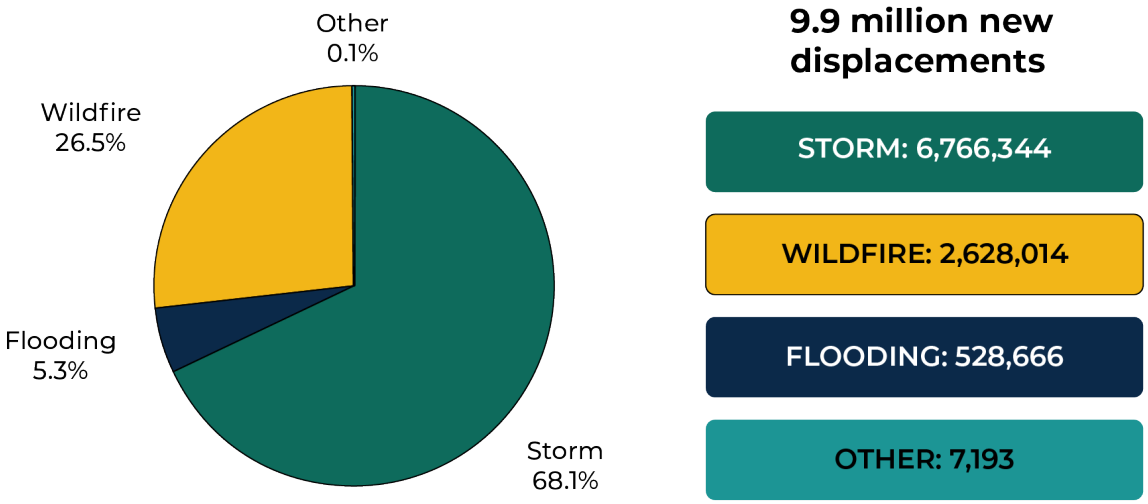
Exhibit IV.2 is a more detailed, albeit imperfect, breakdown of the types of natural disasters that displace people in the United States. The data presented in the exhibit are imperfect because some natural disasters occur as a result of another disaster, such as a storm that led to flooding that led to a mudslide, which can lead to double-counting in the data.

Among the natural disasters that cause displacement, storms (including hurricanes, heavy rains, tropical storms or thunderstorms, tornadoes, blizzards and associated flooding, as well as flood events not associated with other storms) and wildfires account for 99 percent of displacements. This can be

[3] IDMC sources include daily situation reports by FEMA, which include information on mandatory evacuations, housing destruction, and shelter data from the American Red Cross. FEMA provides data on medium- to large-scale events, and local media and local/state authorities are useful for small-scale events and provide information related to evacuations and housing damage assessments. Media sources include national broadcasting networks, such as ABC, CBS, FOX, NBC, PBS, and their affiliates.

attributed to the span and severity of damage these disasters may cause to homes and other structures (IDMC and NRC 2018).

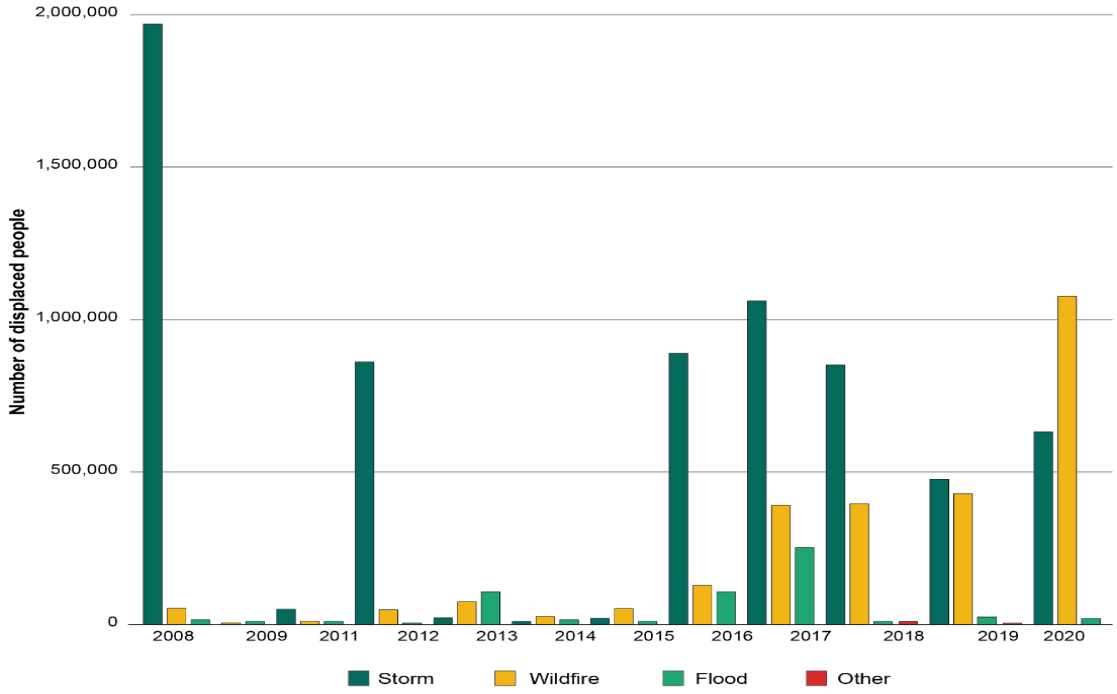
Exhibit IV.1. Number of people displaced by disasters in the United States from 2008 to 2020



Source: IDMC and NRC 2021

Note: The storm category includes hurricanes, heavy rains, tropical storms or thunderstorms, tornadoes, and blizzards. These incidents might lead to severe flooding, which could be recorded a second time in the data as either a flood event or storm, depending on the event and source of the data. That said, the separate flood category also captures independent events such as levee breaches and dam failures. The category for "other" includes volcanic eruption, earthquake, wet and dry mass movement (such as mudslides or rockslides), and extreme temperature.

Exhibit IV.2. Displacement in the United States from 2008 to 2020, by type of disaster



Source: IDMC and NRC 2021.

Notes: IDMC did not report data for 2010.

For disaster types, a dry mass movement includes a rockslide, and a wet mass movement includes a mudslide.

IDMC acknowledges these estimates are lower than the actual numbers of new displacements. IDMC data are collected from various sources but predominately FEMA, which limits figures to only those disasters elevated to the federal level (disasters whose risk of damage exceeded the resources of the state).

Exhibit IV.3. Number of displacements in the United States from 2008 to 2020, by year and disaster type

Disaster Type	2008	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total displacements
Dry mass movement											91	75	**166**
Volcanic eruption										2,800			**2,800**
Extreme temperature										477	872		**1,349**
Wet mass movement				8		96				2,030	22	39	**2,195**
Earthquake						39				317	129	198	**683**
Wildfire	50,300	426	4,300	44,323	69,557	21,191	44,786	123,769	385,063	391,404	422,951	1,069,944	**2,628,014**
Flood	11,473	900	5,000	707	102,058	9,810	4,367	102,971	247,289	6,444	20,505	17,142	**528,666**
Storm	1,958,000		42,925	855,894	16,250	3,185	14,184	880,581	1,053,135	843,822	471,779	626,589	**6,766,344**
Total Displacements	**2,019,773**	**1,326**	**52,225**	**900,932**	**187,865**	**34,321**	**63,337**	**1,107,321**	**1,685,487**	**1,247,294**	**916,349**	**1,713,987**	**9,930,217**

8 1,958,000

New displacements

Source: IDMC and NRC 2021.

Notes: IDMC did not report data for 2010.

For disaster types, a dry mass movement includes a rockslide, and a wet mass movement includes a mudslide.

IDMC acknowledges these estimates are lower than the actual numbers of new displacements. IDMC data are collected from various sources but predominately FEMA, which limits figures to only those disasters elevated to the federal level (disasters whose risk of damage exceeded the resources of the state).

Storms and associated flooding are the most common cause of displacement. Hurricanes are one type of storm that contributes to displacement. Hurricanes are complex weather systems that span 300–500 miles and travel hundreds of miles. They are rated as Category 1 to 5 based on their wind speeds, which serves as a proxy for potential for property damage. This scale does not take into account other potentially deadly hazards, such as storm surge, rainfall flooding, and tornadoes (National Hurricane Center 2022). All hurricanes produce life-threatening winds, but hurricanes rated Category 3 and higher are known as major hurricanes. Major hurricanes can cause catastrophic wind damage and significant loss of life solely because of the strength of their winds. Hurricanes of all categories can produce deadly storm surges (a sudden, abnormal rise in seawater level), rain-induced floods, mudslides, and tornadoes (National Hurricane Center 2022). These hazards require people to take protective action, including evacuating, and can end in temporary, short-term or long-term displacement, permanent relocation to a host community, or prolonged housing instability.

Wildfires, the second-highest contributor to displacement after storms, most often result from human actions such as unsupervised campfires, fireworks, and unextinguished cigarettes (Spearing and Faust 2020). Only 10–15 percent of wildfires occur naturally as a result of lightning or, to a much lesser extent, lava. However, wildfires are considered a natural disaster because of the environmental circumstances that escalate the human action, often because of drought and high winds (Spearing and Faust 2020).

B. Displacement is a complex process resulting in varying experiences for displaced people

Disaster displacement typically occurs as a response to evacuation orders before a disaster incident or when damage caused by a disaster renders a person's home or community unlivable. Several factors contribute to whether a person evacuates before a disaster, including financial resources, personal transportation, and access to a reliable place to shelter outside of the impacted community (Merdjanoff et al. 2019). Those with adequate resources and connections may find temporary shelter with family, friends, or in a hotel. Some "wait out" the disaster and are likely to rely on local emergency management evacuation services if the disaster's impact becomes severe (Fussell and Lowe 2014). Emergency evacuation services use public buses or vans to transport people to a host community where they can access designated disaster shelters or other emergency housing (Bell et al. 2010).

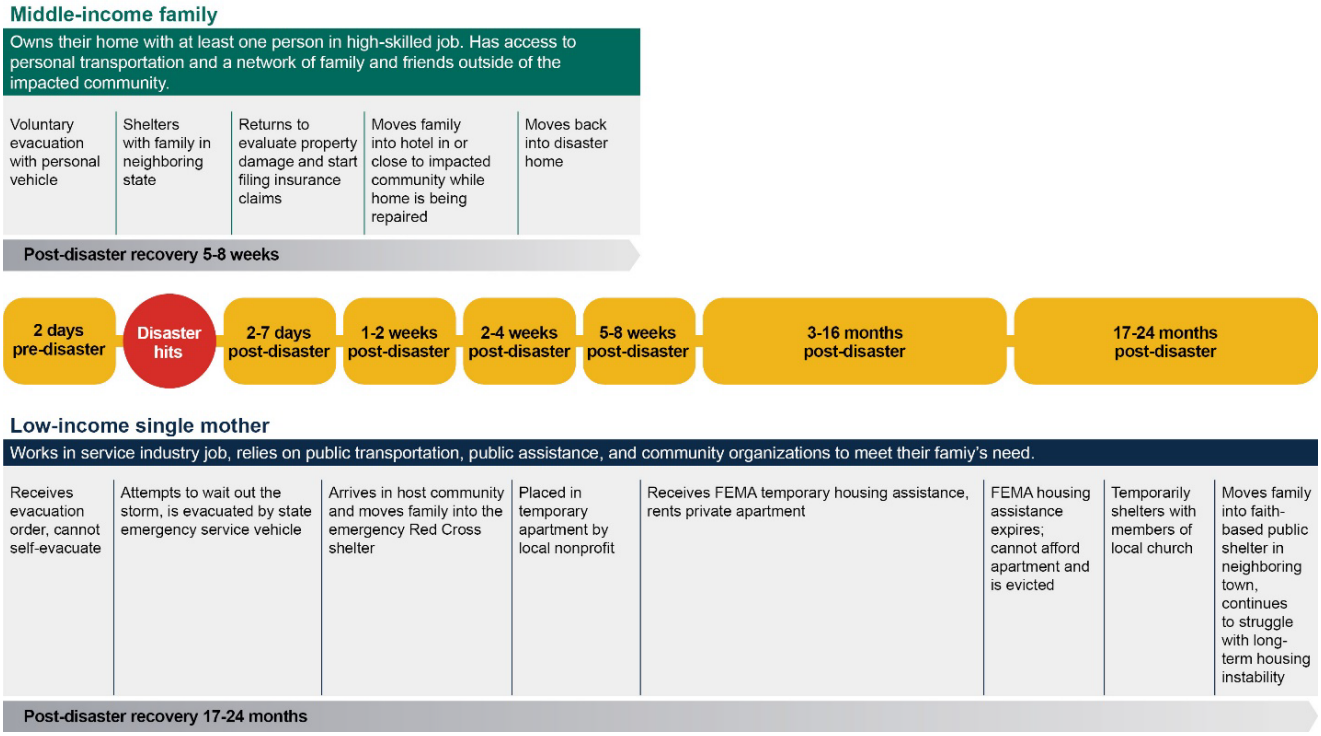
People may return to the impacted community within a few days, weeks, or months of the disaster. The majority of displaced people typically return within a month of the disaster (Yabe et al. 2020; Wong et al. 2018). For example, one study of Hurricane Katrina found that 69% of displaced persons returned within a month after the disaster (Groen and Polivka 2008). After an initial surge in displaced people returning, there is a long time period over which remaining displaced people may return to an impacted community. However, information on the movement of displaced people is lacking in the reviewed literature. Some studies use government data, cell phone location data, and social media data to follow displaced people (Davlasheridze and Fan 2017; Groen and Polivka 2008; Yabe et al. 2020; Metaxa-Kakavouli et al. 2018),

but studies looking at displacement patterns are often limited by unrepresentative samples or limited time frames.

Homeowners and those with other real estate tend to return quickly to check on the condition of their property. A study focused on displaced people with high incomes found that a quarter of returnees return to protect their property in the immediate aftermath of a disaster (Wong et al. 2018). Another study found that the presence of nearby and less or unaffected towns can act as support hubs that facilitate short-distance evacuation, return, and recovery (Yabe et al. 2020).

Renters who are displaced, on the other hand, may gauge the state of recovery from a host community (Peek et al. 2011; Chamlee-Wright 2007) and weigh the choice to return. Decisions on whether and when to return are connected to experiences in host communities; the social, human, and economic capital at hand; and the state of recovery in the impacted community (Bell et al. 2010; Spokane et al. 2013; Yabe et al. 2020). Exhibit IV.3 provides example timelines of the displacement process for two families—one that owns their home and has access to resources and supports, and one that rents and has little access to resources and supports.

Exhibit IV.4. Example timelines of displacement and return



Sources: Bell 2008; Fothergill and Peek 2015; Levine et al. 2007; Wong et al. 2018

In some cases, people decide to remain in a host community permanently, whereas others may face prolonged periods of housing instability (Yabe et al. 2020). The displacement process can be prolonged if the home has been severely damaged, particularly for those who do not own their home, because home insurance policies generally do not cover temporary housing for renters (Yabe et al. 2020). Other factors that prolong displacement in host communities include lack of return transportation; damaged public transportation; and closed public schools, clinics, and other human services networks in the impacted

community (Fothergill and Peek 2015). Some people choose to remain in a host community instead of returning, particularly if the social ties, housing and job market, and community resources of the impacted community have changed significantly. Those unable to find stable employment or housing often end up in an in-between space—neither settling in the host community nor returning to the impacted community. Displacement for these people is often long term and characterized by recurring rehousing and chronic housing instability (Fussell and Lowe 2014).

Host communities take shape through both formal and informal processes. Especially when a major displacement is expected, the states of host communities can form agreements with impacted states or FEMA for reimbursement of sheltering and evacuation costs. These agreements between the states of the impacted and host communities can include the scope of services the host communities intend to provide, as well as estimated costs. These agreements are facilitated by frameworks like the National Response Framework, a guide to how the United States responds to all types of disasters and emergencies; the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the statutory authority for federal disaster response; and FEMA's various operating procedures.

Hosting displaced populations is resource intensive and costly (Spearing and Faust 2020). Host states can apply for federal reimbursement for certain housing and emergency services expenses. Subsequently, eligible costs incurred by the host state are shared between the federal government and the impacted state. These agreements are typically made when the threat of disaster is imminent and there is little time to thoroughly estimate the extent and duration of displacement and the services displaced people will need. FEMA procedure requires estimates for housing and evacuation support be totaled at the state level, meaning any proposed evacuation or housing service costs for host communities within the impacted state need to be included in the state's original FEMA assistance request (FEMA 2009). FEMA covers some housing, evacuation, and administrative costs associated with receiving the estimated number of displaced people (FEMA 2007). However, there is no policy that allows for reimbursement of increased utility or infrastructure costs while a county serves as a host community (Spearing and Faust 2020). Further, uncertainty as to the size and duration of the displacement makes it difficult for host communities to estimate the full cost of adjusting to the increased demand (Spearing and Faust 2020).

In many cases, the development of a community as a host community is reactive and not planned or coordinated. Host communities often emerge because the social networks of family and friends draw displaced people to those communities. For example, following Hurricane Maria, many Puerto Rican families sought refuge with extended family in New York and Florida, two areas with large Puerto Rican populations. Communities near the impacted area but sustaining less disaster impact may become host communities, acting as support hubs for sheltering, disaster response, and recovery. The lack of such areas could push displaced populations further from their pre-disaster addresses (Yabe et al. 2020).

Experiences of displaced people in host communities vary widely, depending on availability of human services, a host community's existing social networks, and opportunities to accommodate displaced people. Exhibit IV.4 describes the experiences of displaced people in two host communities, Austin and Houston, after Hurricane Katrina. Myriad factors contribute to a positive experience for displaced people in a host community. People who may have thrived in their pre-disaster community may struggle in a host community that does not have affordable housing in or near its economic or social hubs. Displaced people are often placed in housing and shelter away from stores, health care, jobs, and services, which are necessary for disaster recovery and self-sufficiency. Reliable public transit and the walkability of a city also matter. To assist people displaced by the 2018 Camp Fire, one city adjusted its bus routes to service emergency housing and shelters (Spearing and Faust 2020).

How displaced people are received by a host city shapes the experiences of the displaced. The existing population in a host community may stigmatize displaced populations (Fothergill and Peek 2015). Sometimes those stigmas lead to discrimination, which contributes to displaced people facing subsequent housing instability and lack of social and cultural integration into the host community (Aktürk and Lerksi 2021). In one survey administered in the wake of Hurricanes Katrina and Rita, between 25 and 50 percent of host community pre-disaster residents reported that displaced persons could be a vector of disease, whereas 45 to 80 percent saw displaced persons as a drain on community resources (Blendon et al. 2007).

Even when emergency aid and human services are available, disaster displacement is a challenging experience, especially for children. Disaster and subsequent displacement are traumatic experiences (Bell 2008). The process of disaster displacement is a challenge to resiliency because it puts stress on and interrupts existing networks of friends and family, as well as work and livelihood (Kyne and Aldrich 2019; Sadri et al. 2017). Displacement can lead to negative outcomes in mental and physical health, employment, housing, and education (Foster 2007; Fussell and Lowe 2014; Lowe et al. 2013; Ratcliffe et al. 2019). In serving displaced children, even well-trained teachers and counselors may struggle (Foster 2007; Peek et al. 2011). At each level of service, a trauma-informed approach may help move displaced people toward resiliency (Bell et al. 2010; Foster 2007; Speier et al. 2018).

Exhibit IV.5. Experiences in two host communities after Hurricane Katrina

	Austin	Houston
Population	After Katrina, Austin received 8,000 people displaced from their homes in New Orleans. Nearly 70 percent of the displaced were Black and 30 percent were living below the poverty line before the storm. In 2005, only 9.8 percent of Austin's 650,000 residents were Black and approximately 14 percent lived below the poverty line. Compared to New Orleans, Austin is a wealthier city with a more highly educated population. Forty percent of Austin residents had a bachelor's degree, compared to 25 percent for New Orleans. Of displaced New Orleans residents in Austin, 6–8 percent had a bachelor's degree. In 2005, Austin had a median income of $50,000, compared to New Orleans' $39,000.	Houston received more than 200,000 displaced people after Hurricane Katrina. More than 90 percent of the displaced were Black and 33 percent were living below the poverty line before the storm. In 2005, 22 percent of Houston's roughly 2 million residents were Black. In Houston, 28 percent of residents had a college degree, compared to 25 percent in New Orleans and 6 percent among New Orleans residents displaced to Houston. At the time, the median income in Houston was $45,000 (somewhat closer to New Orleans' $39,000 than Austin's median income).
Housing	Austin built and operated a temporary shelter that housed 4,000 displaced people immediately after the storm, but its transitional and temporary housing offerings were minimal. No new public housing units had been built since the early 1980s. At the time, Austin had a total of 1,928 units of public housing available and a waiting list of more than 8,800.	Houston received the largest number of displaced Katrina survivors. Because the city is spread over a larger area (44 percent larger than New Orleans) and is less dense, Houston was able to house hundreds of thousands of people in individual homes and apartments quickly, without having to build new structures or wait for FEMA funding. Additionally, in Houston, families were placed in larger, nicer accommodations than they were accustomed to in New Orleans.

	Austin	Houston
Job opportunities	The city's economy revolved around higher education, state government, and the tech industry. Lower-skilled service jobs and manual labor were harder to find, as they were already occupied by Austin's younger or less educated population, and the city's robust community of Hispanic residents.	Houston's economy was more diverse than either Austin or New Orleans and provided opportunities in local government agencies and major industries such as manufacturing, retail, cargo transport, utilities, and other fields. Finding employment was still a challenge for people displaced to Houston—some reported instances of discrimination—but there were more options available, most of which came with a higher salary range or better benefits than their home community.
Transportation	Although Austin has a vibrant city center with several surrounding metropolitan neighborhoods, the lack of available housing in these areas meant displaced people were housed farther away from economic centers. Gaining access to schools, services, and potential employers required displaced people to use a public transportation system that was often inadequate.	Houston's sprawl initially made transportation difficult for displaced families. Many reported struggling to adjust to the long commutes between home, stores, schools, and public services. One advantage for people in Houston was the connections formed between displaced families and existing residents, which resulted in more sharing of resources, such as personal vehicles, and ultimately greater resilience in the face of hardship and disruption.
Social connections	A negative outcome of the housing shortage was not being able to house displaced people close to one another—a stark contrast to New Orleans, where the highly concentrated neighborhoods of low-income families created tight social networks of mutual support. In Austin, these people felt isolated and desperate.	The sheer number of people displaced to Houston provided a built-in community of sympathetic people and helped ease the challenging transition. Finding housing close to one another allowed displaced people to connect with each another, form familiar cultural bonds, and regain stability.
Schools	In the years before Hurricane Katrina, state services and independent school districts in Austin had instituted new and complex eligibility requirements and regulations for new students. For displaced families with children, this situation made enrollment difficult, especially for those who fled New Orleans without the required identification and inoculation documents. Furthermore, the disparity between the race, culture, and socioeconomic class of the displaced and those of Austin's schools, made the newly enrolled students easy to identify as Katrina victims. The children of families displaced in Austin had a difficult time integrating into their new environment. Parents reported their children being bullied, acting out in school, avoiding social interaction, and becoming generally depressed or unmotivated.	People with children felt the schools were better run and the communities safer than those in New Orleans. A year after Hurricane Katrina, close to 100,000 displaced people were still living in Houston, and close to half of them intended to stay. To aid in the long-term development of the displaced children, some teachers and administrators from New Orleans organized to build a charter school designed for the specific academic, social, and emotional needs of displaced youth.

Sources: Bell 2008; Foster 2007; Lein et al. 2012; Spearing and Faust 2020; Fothergill and Peek 2015.

C. Marginalized populations are most vulnerable to adverse outcomes from disaster displacement

The research suggests that the people most vulnerable to disaster displacement are those who lack resources before the disaster incident, such as those experiencing homelessness, food insecurity, and

unemployment, and people from low-income communities and communities of color (Levine et al. 2007; Perls 2020). After displacement by a disaster, people without access to resources face the additional challenge of navigating complex human services systems, including new and unfamiliar systems in a host community, and are at the highest risk for negative long-term outcomes.

The research consistently frames risk of disaster displacement through two intersecting contexts: physical vulnerability and social vulnerability (Levine et al. 2007; Lein et al. 2012). Physical vulnerability indicates potential hazards related to location, poor or inadequate construction of buildings, age of structures, and so forth. Social vulnerability involves the relative ability of an individual, household, or community to respond appropriately to threatening conditions. Lack of income, lack of transport, age, disability, minority status, lack of information, and numerous other factors can contribute to social vulnerability (Levine et al. 2007).

Flooding associated with hurricanes, the leading cause of displacement in the United States, occurs most frequently in a concentrated group of states: Florida, Texas, Louisiana, North Carolina, South Carolina, Alabama, Georgia, and Mississippi (IDMC and NRC 2019). These states tend to have high physical and social vulnerability. They are not only among the poorest states in the nation, but they have among the highest rates of childhood poverty, lowest levels of health insurance, and weakest social safety nets (Bell 2008). This was the case for most people displaced by Hurricane Katrina from Louisiana to Texas and was well documented in the public shelters that housed them (Exhibit IV.5). Within these states, the risk of experiencing flooding and associated displacement may be unevenly distributed. For example, Fitzpatrick et al. (2020) find that after Hurricane Harvey, flooding was worse in areas with a larger Hispanic population compared to areas with a majority of White residents.

Preexisting vulnerabilities mean that disaster incidents often do not create the immediate needs of people displaced by disasters but rather disrupt or expose their needs. Thus, the most urgent post-disaster need for many people is maintaining or replacing the various support services they relied on previously. This is especially true for vulnerable populations coping with multiple, intersecting needs (Levine et al. 2007). Populations that are particularly vulnerable to displacement and adverse outcomes include:

- **Older adults and people with health risks,** who have complex and often life-threatening obstacles to navigate when faced with displacement—including unintentionally being trapped in unsafe situations. Older adults living by themselves are often socially isolated and can be difficult to reach by family or mass emergency communication. The experiences of older adults during and after California wildfires corroborate this point (Rosenthal et al. 2021). During power outages, which can result from fire damage or be a preemptive measure to prevent spread of an ongoing fire, older adults relying on life-sustaining medical devices (for example, oxygen compressors or insulin pumps) can be left facing a dire situation in a matter of hours (Rosenthal et al. 2021).
- **People with disabilities,** particularly those with intersecting vulnerabilities, such as those with low income or experiencing homelessness, are vulnerable during disaster incidents and subsequent displacement. They have greater difficulty evacuating because many public disaster response services are not adapted for their needs. In communities affected by hurricanes, people with visual and hearing disabilities have reported not receiving necessary information pertinent to their safety, such as evacuation orders and transportation offerings. In other instances, people with physical disabilities struggle to access life-preserving services with appropriate accommodations, such as evacuation busses with wheelchair lifts (Abramson et al. 2010).

- **People without access to personal transportation** are at an extreme disadvantage. Transportation is critical for evacuating the impacted community and for traveling within the host community after displacement (IOM 2015). In metropolitan areas, public transit use is high and coverage extensive, so carless or transit-dependent populations would not usually be considered at risk. However, the same population in a small city with limited transportation options might be disproportionately affected by an emergency. Wherever they are, people without a car or dependent on public transit require transportation assistance in a disaster (IOM 2015).
- **People with low incomes** in disaster-prone areas, regardless of any additional disadvantages, face a double risk: they are more vulnerable to disasters but less able to move away from them (Black et al. 2012). Without sufficient resources, many people in these regions have grown accustomed to staying behind and weathering severe storms and flooding. Bell (2008) finds that southern states have historically offered limited state and federal human services, such as lower earned income tax credits, minimum wage levels, unemployment insurance benefits and cash assistance benefits than other states. Levine et al. (2007) find that the most socially vulnerable counties in the United States, using an index that takes into account demographics, land use, and housing status, tend to be located in the southern half of the country. People in states with fewer human services may tend to rely more heavily on informal networks of relatives, neighbors, churches, and other faith or nongovernmental organizations for urgent post-disaster needs (Bell 2008).

Exhibit IV.6. People displaced by Hurricane Katrina to shelters in Houston, Texas

- Compared with New Orleans and Louisiana residents, disproportionate numbers of people displaced from Hurricane Katrina to Houston shelters were African American, had low incomes and low rates of home ownership, had no health insurance coverage, and had low education levels.
- Ninety-three percent of the residents of the Houston shelters were African American, compared with 67 percent of New Orleans residents and 33 percent of Louisiana residents overall, pre-disaster. Nearly all people displaced in the Houston shelters were from the New Orleans area, and a large majority had lived in New Orleans their entire lives.
- About one-third of people displaced in the Houston shelters reported making less than $10,000 in 2004 (the year before the storm), whereas 10 percent of the general populations of New Orleans and Louisiana reported making that amount. About 6 in 10 had household incomes below $20,000 in 2004.
- Only 6 percent of Houston shelter residents had a college degree, compared with more than one-quarter of the population of New Orleans and 19 percent of Louisiana residents. About half had been employed full time before the storm. Nearly half of the shelter residents were single; 30 percent were married or living as married.
- The age range of people sheltering was evenly split between those older than and younger than 65. Forty-five percent had children younger than 18, and 33 percent had their children with them in the shelter.
- This group of displaced people was disproportionately uninsured: 54 percent had no health insurance before the hurricane, compared with 26 percent of Louisiana residents overall. Fewer than 2 in 10 had private health insurance, compared with 63 percent of Louisiana residents as a whole. Furthermore, 41 percent of Houston shelter residents reported chronic health conditions such as heart disease, hypertension, diabetes, or asthma. Before the hurricane, this group of evacuees had relied heavily on the New Orleans public hospital system, a network of hospitals and clinics in and around the city whose flagship institution was Charity Hospital, which was destroyed in the storm.
- Thirty-three percent of the displaced people with children and 29 percent without children said that they had been injured during the hurricane; 13 percent in each group reported that their injuries had been serious.

Source: Brodie et al. 2006.

After displacement, families can be left facing multiple problems, periodic crises, and threat of eviction or homelessness because of the gaps in and fragmented availability of human services. Families with low incomes struggle for financial stability and often rely on a fragmented human services system for support before a disaster. Lein et al. (2012) find that families receiving cash assistance might depend on as many as 25 to 30 community and support organizations each year to fill the gap between low-paying jobs and the resources provided by cash assistance. Each community organization may have limited resources or specialize in a particular area, such as child care, school supplies, clothing, food security, transportation subsidies or repairs, employment help, or career training, which requires families to seek multiple sources of support. Displacement to an unfamiliar host community can exacerbate the challenges of navigating complex support systems (Lein et al. 2012).

Findings across the literature confirm that (1) displacement disrupts people's social networks, (2) survivors are likely to be more vulnerable than they were before the disaster, and (3) the availability of community resources will be limited (Levine et al. 2007). A single disaster incident is part of a cascade of other damaging events and results in cumulative impacts and stress on people in affected communities (IOM 2015). The next chapter will discuss how displaced people navigate these circumstances and their experiences accessing necessary post-disaster human services.

V. Delivering human services to people displaced by disasters

The research reviewed for this report focused on single, large-scale disasters (such as Hurricane Katrina), instead of analyzing human services processes and patterns across disasters. Further, within the catalogue of single disasters, most of the literature tends to concentrate on specific disaster-related elements or contexts (Boin et al. 2019). For example, findings from the literature generated valuable insights on the post-disaster human service needs of children and families, the experiences of people with low incomes facing long-term displacement after Hurricane Katrina, and recommendations on how government and nongovernmental agencies can better coordinate service delivery. However, none of the existing resources we reviewed offer a holistic understanding of how people experience displacement in different regions or across type and scale of disaster. The same is true for the process of delivering and accessing necessary human services to the displaced.

Given these limitations in the literature, it is a challenge to thoroughly understand how the field responds to and delivers human services to people displaced by disasters that vary in type and scale. Taking into account these gaps, this chapter synthesizes what is discussed in the reviewed literature about the temporary and short-term post-disaster needs of people displaced or affected by a disaster, and the process of accessing and delivering human services within impacted and host communities. Specifically, the chapter discusses the types of human services required by individuals experiencing displacement after a disaster; the funding and human services provided at the federal, state, and local levels; and the role of disaster case managers in coordinating human services for affected individuals.

A. Access to housing is the most immediate need for people displaced by disaster

Natural disasters cause a range of physical damage that can displace the members of a household. According to the literature, displaced people most commonly report damage to or destruction of their home or vehicle. At the neighborhood or community level, people attribute their displacement, at least partially, to widespread damage of telephone, power, water and/or gas lines (Sadri et al. 2017).

Access to temporary housing that provides safe shelter and a place of belonging is the most immediate need of people displaced by disaster (Lein et al. 2012). When a home is damaged by a large-scale natural disaster, a household is displaced, and the occupants must find temporary or transitional housing (Spokane et al. 2013). In most cases, people prefer to stay in or close to their original communities— near their schools, jobs, and neighbors. However, if the damage is severe enough, or adequate housing is not available, residents will leave the community temporarily or permanently, further disrupting social networks and degrading the community and its economy (IOM 2015).

Staying with relatives or friends outside the affected area is often an ideal short-term solution, but for people without transportation, financial resources, and/or connections outside of the impacted community, those options are less available.[4] Thus, people with fewer resources are more likely to be displaced to emergency shelters; prefabricated or improvised shelters, such as manufactured housing or modular homes; medical facilities; or temporary accommodations, such as churches and other faith-based and nonprofit organizations (Sadri et al. 2017; Spokane et al. 2013).

[4] Little reviewed research addressed the needs of displaced people experiencing domestic violence, which can make it unsafe to shelter with relatives or friends. This will be discussed in the final chapter on gaps in the research.

Sheltering large numbers of displaced households is a considerable logistical challenge, and available options are not perfect (IOM 2015). Despite their close proximity and free cost, emergency shelters are generally not the preferred way to address immediate housing needs. In particular, they can quickly become crowded, resource-depleted, and uncomfortable. Public shelters are frequently a last resort, given that they are commonly perceived as a poor sheltering option (Wong et al. 2018).

Repairing and replacing housing stock lost in a disaster can take years, and even though they are often a last resort to begin with, emergency shelters close a few weeks after a disaster (Bell 2008; IOM 2015). As emergency shelters close, people are generally transitioned into one of two housing options: an allowance for prolonged hotel stays (with imposed time limits) or a trailer in a designated mobile-home park for displaced people (Levine et al. 2007). However, hotel stays become expensive, and hotels are not intended to be permanent homes. Trailers may be unsafe if there is another disaster, and if there are many families buying them, it can create shortages and drive up prices outside the disaster area (Levine et al. 2007). Less commonly, vacant apartment units or houses are made available (Bell 2008). Evidence shows that establishing longer-term transitional housing quickly can enable rapid community recovery, mitigate the spread of disease, prevent avoidable injuries, and avoid potential adverse behavioral health outcomes that occur when large numbers of individuals are housed in shelters for extended periods of time (IOM 2015). Without safe, reliable housing, people cannot begin to address the other urgent needs that arise in the wake of a major disaster.

However, accessing longer term, transitional housing can be a challenge in both impacted and host communities, and affordable options may be rare. Often, the available housing is in areas away from the economic center of communities, far from sources of jobs and public transportation, and in less desirable areas. For example, temporary housing supplied by FEMA after a disaster is often set up on the outskirts of host communities (Bell et al. 2010). Affordable housing challenges that emerge after disaster displacement are often rooted in issues that were there before the disaster. Even without the destruction caused by natural disasters, the stock of affordable housing continues to decrease nationwide. In most parts of the country, there are long waiting lists for federal rental housing assistance programs, including Section 8 Housing Choice Vouchers; Section 8 Single Room Occupancy (SRO) Program; Section 118 Supportive Housing for Persons with Disabilities; and Section 202 Supportive Housing for the Elderly; and Public Housing (Levine et al. 2007).

In addition, income support that allows people in displaced households to rent available housing is often necessary but not readily available. Although most states within a designated disaster area—in host and impacted communities—qualify for a variety of post-disaster housing programs, agencies and individuals typically have limited understanding of needs, available resources, and potential solutions (Levine et al. 2007). Housing programs flow through a variety of channels and are complicated to navigate, as each have their own application requirements, processes for approval, timelines, and eligibility requirements (Ratcliffe et al. 2019; Gilbert et al. 2020). For example, although the Community Development Block Grant-Disaster Relief is a major source of funding for unmet housing needs, it can take more than a year for state and local governments to launch programs through this funding source, at which point individuals may no longer be in touch with service providers and aware they are eligible for these programs (Ratcliffe et al. 2019). Findings from the literature suggest that service gaps, especially those related to housing, have measurable social, economic, psychological, and health impacts on disaster-displaced people. These outcomes can prolong or prevent recovery for both individuals and communities (Davlasheridze and Fan 2017).

B. People experiencing displacement also need income support, transportation, schools and child care, and jobs

The most common temporary and short-term human services needs discussed in the literature, after housing, include:

1. **Income support.** Resource-deficient populations that become displaced need income support to buy food and replace clothing. Inadequate finances are particularly stressful for households on fixed incomes, such as older adults or people with disabilities who cannot seek employment. Those who are able to work may have to adjust their skills to the labor market of the host community and need income support while they train for jobs or look for relevant job training programs (Levine et al. 2007).
2. **Transportation.** People without a personal vehicle (often referred to as "populations with limited transportation" or "carless populations") generally rely on public transportation for work, school, worship, and leisure. Disasters can significantly reduce mass transportation options, inhibiting individuals from accessing services, staying connected, and seeking safe shelter. When people are displaced to communities with few public transportation options, it can be difficult or impossible for them to travel to FEMA Disaster Recovery Centers and other service agencies, pursue employment opportunities, or enroll their children in school (IOM 2015).
3. **School and child care.** Displacement can cause disruptions in child care arrangements, as child care providers, babysitters and family members who provided care before may no longer be accessible. Availability of child care and school enrollment are critical components of recovery. Not only do they help reestablish social structures and stability, they also allow parents to attend to important matters such as applying for aid and other recovery activities (Gilbert et al. 2020).
4. **Employment opportunities.** Many people displaced by disasters report considerable difficulty finding jobs because of lost identification, lack of child care, lack of marketable employment skills and job training, and difficulty accessing public transportation (Bell 2008). For example, two years after Hurricane Katrina, nearly 40 percent of people displaced in Austin, Texas, who were working before the storm were unemployed (Abramson et al. 2010).

C. Human service delivery for people displaced by disasters relies on federal funding

Service delivery and coordination are driven by federal government structures for response and recovery. Key federal departments that play a role in disaster response include DHS (includes FEMA), HUD, and HHS. These federal agencies help people displaced by disasters, either directly or through impacted states or localities, and assist state and local recovery efforts. Exhibit V.1 provides examples of assistance available to displaced people.

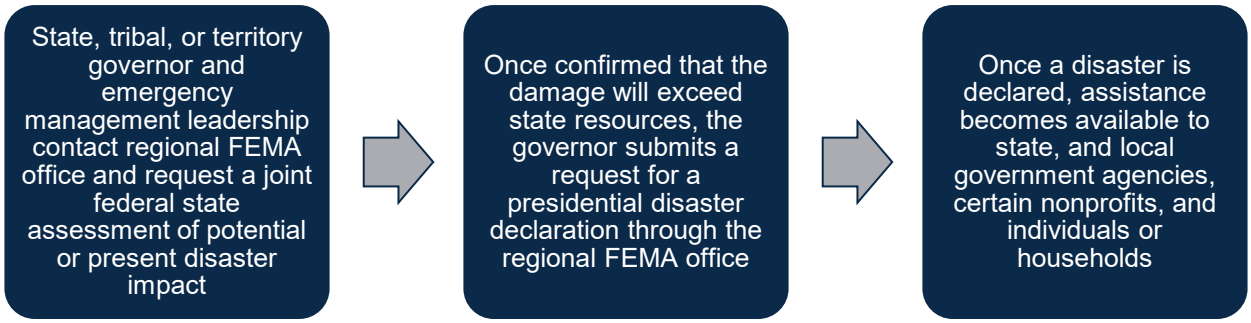
Using its Disaster Relief Fund, FEMA provides federal assistance to state recovery efforts in impacted communities once the president has issued a major disaster declaration. Exhibit V.2 is a simplified portrayal of how a state, tribe, or territory requests a presidential disaster declaration and federal assistance under authority from the Stafford Act.

Exhibit V.1. Examples of post-disaster assistance available to displaced people

- **Individuals and Households Program, DHS/FEMA.** This program provides financial and direct services to eligible individuals and households affected by a disaster who are uninsured or underinsured for necessary expenses and have serious needs. The assistance is intended to meet basic needs and supplement disaster recovery efforts.
- **Cora Brown Fund, DHS/FEMA.** The Cora Brown Fund is used for uninsured or underinsured individuals or families who have disaster-related needs and are unable to obtain adequate assistance from other local, tribal, state, and federal government programs or from voluntary agencies. The fund is not intended to replace or supersede those programs; therefore, if assistance is available from another source, the Cora Brown Fund may not be used. Awards from this fund may be granted only at the discretion of FEMA.
- **Crisis Counseling Assistance and Training, FEMA and Substance Abuse and Mental Health Services Administration (SAMHSA).** The Crisis Counseling Assistance and Training Program provides immediate, short-term crisis counseling. The program helps relieve grieving, stress, or mental health problems caused or aggravated by a disaster or its aftermath. Assistance provided is short term and has no cost for the disaster victim.
- **Other Needs Assistance, DHS/FEMA.** Awards help with medical, dental, funeral, personal property, transportation, moving and storage, and other expenses authorized by law (for uninsured or underinsured eligible applicants).
- **Disaster Case Management, DHS/FEMA and HHS.** Provides case management services to eligible individuals through government agencies or qualified nonprofits. Case management ensures that a sequence of delivery is followed to streamline assistance, prevent duplication of benefits, and provide an efficient referral system. Program includes state grants for longer-term recovery services and **Immediate Disaster Case Management, overseen by DHS/FEMA and ACF/OHSEPR,** which **p**rovides immediate case management services, including conducting intake assessments, assisting disaster survivors with developing recovery plans, and connecting disaster survivors to necessary services.
- **Disaster Unemployment Assistance, U.S. Department of Labor.** Administered by the impacted or host state, this program provides financial assistance to individuals whose employment or self-employment has been lost or interrupted as a direct result of a major disaster declared by the president, and who are not covered by regular unemployment insurance.
- **Community Development Block Grant Disaster Recovery (CDBG-DR), HUD.** Administered by the impacted or host state or local agencies, CDBG-DR provides additional funding for unmet housing needs, earmarked for people in low-income households in the most severely affected regions. Funds support post-disaster buyout programs that help people permanently relocate; rental assistance; and aid rebuilding.
- **Disaster Supplemental Nutrition Assistance Program (D-SNAP), U.S. Department of Agriculture**. Administered by the impacted or host state, D-SNAP provides food assistance to low-income households with food loss or damage caused by a natural disaster.
- **Disaster Supplementals Appropriations**. When routine disaster appropriations are determined to be insufficient to meet disaster needs, federal legislators may provide supplemental emergency funding. This funding varies by disaster, but typically supplements existing programs in federal agencies, such as FEMA and HUD, that can support people displaced by disasters.

Sources: FEMA 2021; Ratcliffe et al. 2019; Lindsay and Murray 2011

Exhibit V.2. Presidential disaster declarations under the Stafford Act



Source: FEMA 2021.

FEMA and HUD jointly oversee housing assistance, which includes funds for temporary housing; repair of a primary residence; replacement of a residence and permanent or semi-permanent housing; and financial assistance for other needs, such as medical care and personal property (Gilbert et al. 2020). HUD distributes CDBG-DR to states, which can use the funds for community-level recovery (for example, for infrastructure repair) or administer them to agencies to help people with rebuilding, relocation, and rental assistance.

HHS also plays a critical role in delivering emergency support services. Within HHS, ACF provides leadership in disaster human services, specifically restoring and improving non-housing social service networks to meet disaster-caused needs (Gilbert et al. 2020).

OHSEPR works with other ACF programs to ensure the effectiveness of human services in preparedness, response, and recovery from disasters and public health emergencies (Gilbert et al. 2020). A network of 13 ACF program offices drives ACF's post-disaster service delivery and coordination. OHSEPR is the core of these services, responsible for promoting the resilience of vulnerable individuals, children, families, and communities (Gilbert et al. 2020). HHS programs fund human services that serve families and children during non-disaster times. During disasters, agencies within HHS maintain continuity of services, provide new or extended services after federally declared disasters, expedite claims for new federal benefits, and issue waivers that suspend existing rules or penalties, such as allowing for disaster-related rebuilding and transportation costs that might not usually be covered. For example, following Hurricane Katrina, ACF's Children's Bureau used funds to identify and license new foster family homes for displaced children (Gilbert et al. 2020).

D. Understanding and navigating post-disaster human services can challenge agencies, individuals, and families

Federal post-disaster assistance programs are not well understood by displaced people. Most people do not know federal post-disaster assistance programs exist, or how to access them (Ratcliffe et al. 2019). Further, with the exception of the CDBG-DR, the literature seldom mentions these programs. People affected and displaced by a disaster typically only use a portion of federal assistance programs, specifically individual assistance for housing, home repairs, emergency post-disaster needs, and disaster case management. Less used services include crisis counseling, disaster unemployment assistance, and D-SNAP (Ratcliffe et al. 2019). The reviewed literature provides information about how human services are

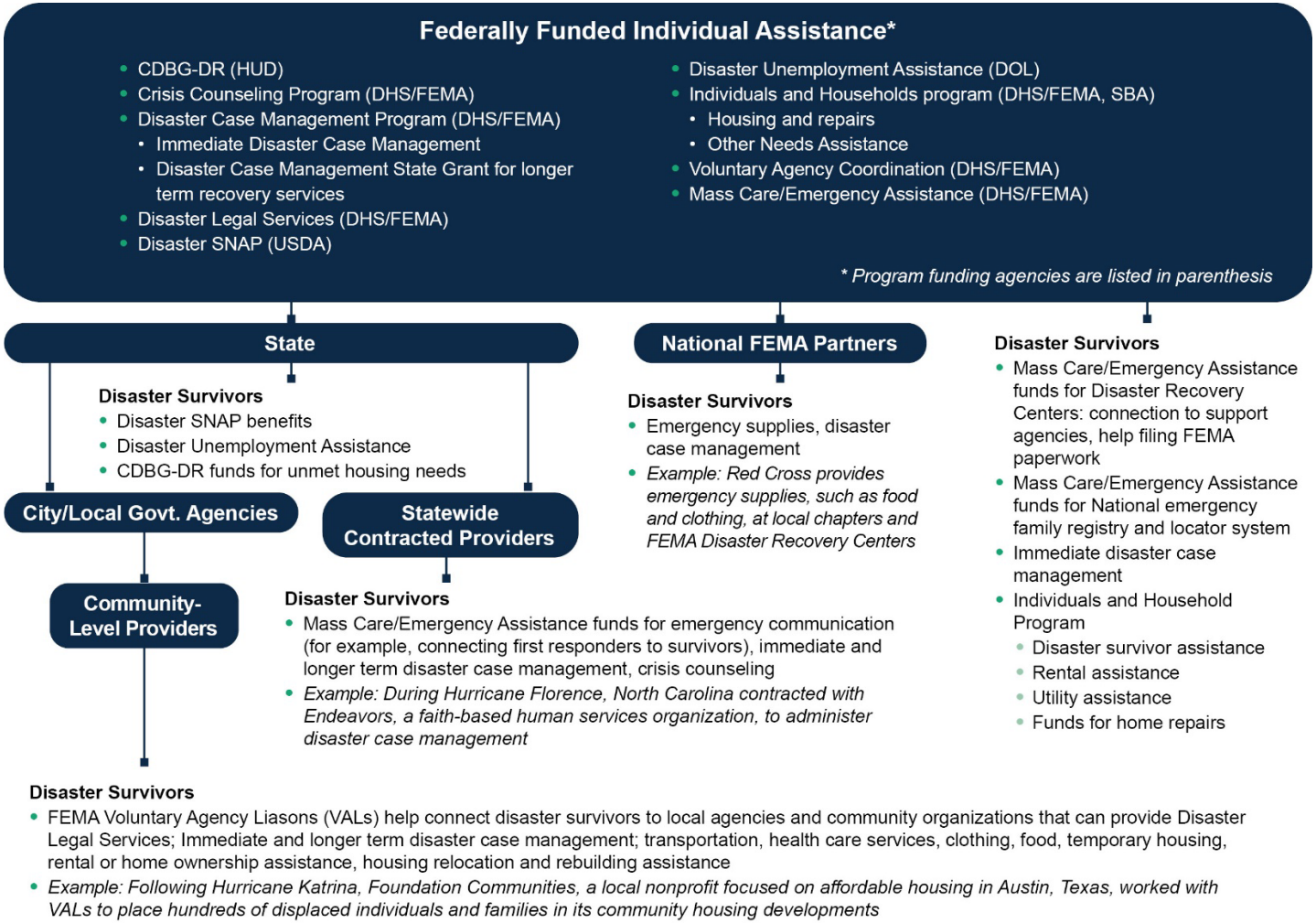
made available after disasters and acknowledges that it is a complex and difficult to navigate process. However, there is little exploration in the literature about how agencies and people affected by disasters navigate this process and the challenges they face.

Immediately after a disaster, the primary focus of government agencies in the impacted region is typically community-level recovery. This includes search and rescue, fighting fires and floods, removing debris, restoring communications systems, and repairing power, water, and sewer utilities (Boin et al. 2019). Most immediate post-disaster services for survivors (such as temporary shelter, bulk food distribution, emergency first aid, and distribution of FEMA information) are coordinated by a network of faith-based nonprofits and community organizations called voluntary organizations active in disaster (VOADs). State and county offices of emergency management may be involved in coordinating these efforts as well. People in need of urgent supplies such as food, water and clothing are typically referred to one of FEMA's national relief partners, most commonly the Red Cross. The Red Cross and other partners such as the United Way and the Salvation Army serve people through FEMA Disaster Recovery Centers and their local offices within impacted and host communities.

Federal funds and services reach survivors, including those who are displaced and those who remain in impacted communities, through a variety of channels (Exhibit V.4). Services are administered by both government and nongovernmental agencies at the federal, state, and local level. All people affected by a disaster, regardless of whether they are displaced or not, can access direct FEMA support immediately after a disaster at Disaster Recovery Centers. These centers are set up in the immediate aftermath of a disaster, first within the impacted community and eventually throughout host communities. Services provided at Disaster Recovery Centers may include:

- Guidance on disaster recovery assistance and programs for survivors
- Clarification of any written correspondence received from FEMA
- Housing assistance and rental resource information
- Answers to questions, resolutions to problems, and referrals to agencies that may provide further assistance

Exhibit V.3. Distribution of federally funded individual assistance available to disaster survivors



Sources: FEMA 2021; Ratcliffe et al. 2019; IOM 2015.

Note: CDBG-DR = Community Development Block Grant Disaster Recovery, DHS = U.S. Department of Homeland Security, DOL = U.S. Department of Labor, FEMA = Federal Emergency Management Agency, HUD = U.S. Department of Housing and Urban Development, SBA = Small Business Administration, SNAP = Supplemental Nutrition Assistance, USDA = U.S. Department of Agriculture.

E. Faith-based and community organizations help provide human services to people displaced by disasters

The most common support services provided by faith-based and community organizations immediately after a disaster include clothing, food, water, monetary or in-kind assistance, temporary housing, assistance with claims to FEMA, and assistance completing applications for public benefits (De Vita et al. 2008). Large organizations, such as the Red Cross, United Way, and the Salvation Army may be contracted by federal or state governments to provide these services after a disaster. Smaller, local organizations often rely on donations and volunteers to provide services. There can be significant resource sharing among faith-based and community organizations and between these organizations and governments and businesses to help meet the various needs of displaced people, which makes tracking funding streams difficult (De Vita et al. 2008; Ratcliffe et al. 2019).

Faith-based and secular nonprofit organizations tend to play slightly different roles in relief versus recovery efforts. The literature documents the long-standing role of faith-based communities in providing emergency services after a disaster, including their participation in immediate relief activities after hurricanes Katrina and Rita. After Hurricane Katrina, faith-based organizations were particularly involved in providing immediate relief such as food, clothing, water, and temporary shelter, and became active in housing repair and rebuilding programs (De Vita et al. 2008). Secular nonprofits, on the other hand, also provide many immediate relief services, but have a larger presence in providing longer-term recovery services such as child care and job training that may require more professionally trained staff. Another distinction between faith-based and secular providers is that the secular nonprofits tend to continue their services for a longer time (De Vita et al. 2008). Exhibit V.5 describes one service provider, Katrina Aid Today, established by a consortium of organizations.

Exhibit V.4. Katrina Aid Today

In the aftermath of Hurricane Katrina and the flooding of New Orleans in late summer 2005, hundreds of thousands of Gulf Coast residents were displaced throughout the United States. In an effort to supplement the financial and rental assistance provided by the Red Cross and FEMA, a humanitarian development agency, the United Methodist Committee on Relief, established Katrina Aid Today, a consortium of 10 national social service and voluntary organizations using $66.2 million dollars received from FEMA. Consortium agencies worked across 130 offices in 32 states employing 2,500 case managers to help more than 300,000 survivors develop recovery plans, identify sources of assistance for unmet needs, and link them to referral resources and long-term recovery committees.

Source: Bell et al. 2010.

F. Disaster case managers support people displaced by disaster to navigate and supplement federally funded assistance

Both secular and faith-based nonprofits play a significant role in delivering case management for people affected and displaced by disaster. Disaster case management is a service provided separately from standard human services case management, but it serves a similar function (Bell et al. 2010). The focus of disaster case management is the development of a recovery plan. Specifically, disaster case managers support survivors by helping them identify disaster-related unmet needs, facilitating access to necessary resources, and advocating for them throughout the process (Bell 2008). For individuals and families who

received cash assistance or food benefits before the disaster, case managers also help ensure continuity of those services in the face of disaster-related disruptions (IOM 2015).

Examples of the support disaster case managers provide include (IOM 2015):

- Reestablishing access to food, shelter, and clothing
- Facilitating access to medical providers, medications, equipment, and auxiliary services (in coordination with clinical care organizations)
- Facilitating access to federal disaster benefits by collecting or re-creating needed documentation
- Managing stress and behavioral health issues intensified by a disaster (in coordination with other faith-based and community organizations)
- Coordinating with Social Security, Medicaid, and other entitlement programs about survivors' benefits

Loss of proper identification during a disaster is an underestimated and underreported barrier for displaced people. To apply for government-funded support services after a disaster, individuals are expected to provide proper identification and residency documentation. Case managers serving displaced Katrina survivors identified lack of proper identification as a major barrier for people seeking training, jobs, leases, food benefits, and cash assistance. In Austin, Texas, many disaster case managers became voter registrars and registered survivors as voters because voter registration could be used as one form of identification (Bell 2008).

Displaced people sheltering across state lines face the added challenge of navigating unfamiliar state policies and trying to facilitate interstate information sharing. Other important documents such as medical and inoculation records are required to enroll children in school and child care (Bell 2008).

G. Disaster case managers help displaced people navigate needs before they have received assistance

In disasters, the timing of people's needs does not always coincide with times when assistance is available. For example, residents with low incomes who were displaced by Hurricane Katrina to Houston, Texas were initially offered short-term emergency food benefits, many available through nonprofits and community organizations. Within a few months, these benefits disappeared, and households were expected to apply for nutrition assistance programs, a complicated process. For some, there was a gap in access to food. Although local food pantries and other services could fill part of this gap, the recently displaced did not know who provided these resources or how to access them. Case managers served as a lifeline for many of these individuals by connecting them to local food pantries or meal kitchens (Lein et al. 2012).

Displaced people also experience gaps in housing assistance. For example, temporary shelter and assistance for disaster-related unemployment generally expire within six months. Yet it frequently takes more than a year for state and local governments to launch CDBG-DR programs for households with unmet needs, and families may wait years before receiving assistance from these programs (Ratcliffe et al. 2019). Although relief and grant programs for a presidentially declared disaster can support temporarily displaced people and recovery efforts for homeowners and renters, steep barriers confront the homeless, undocumented residents, and other displaced people who are ineligible for these programs (Gilbert et al. 2020). Several organizations often step in to help individuals in these situations, such as

Harvest Call and Endeavors, faith-based organizations in Texas that supported displaced people after Hurricane Harvey (see Exhibit V.6 for more information).

Exhibit V.5. Endeavors—A new home for Nadine: Rebuilding after Harvey

In 2017, when Hurricane Harvey slammed into the Texas coastline, millions across the state were left without homes, food, and belongings. Although the damage was immediately apparent in the coastal city of Corpus Christi, cities like Houston, Galveston, and Beaumont wouldn't know the extent of the damage Harvey caused for weeks, and in some cases, months.

In Silsbee, Texas, a rural town about 20 miles from Beaumont, floodwaters from Harvey affected the town's nearly 7,000 residents. Like Houston, Silsbee was pounded by the rain Harvey dumped across East Texas. With one in every five Silsbee homes flooded by Harvey, residents who were already struggling financially faced what felt like an impossible situation. They needed to find the money to repair their homes, wells, and septic systems.

For Nadine Ford, losing her home to Harvey meant more than just losing her roof. Nadine was elderly, faced several major medical conditions, and was on a fixed income. For months, Nadine lived with various family members and slept in her car until she secured funds from FEMA to temporarily rent a motel room. Those funds were short term, however, and soon Nadine was once again without shelter.

With nowhere to go, Nadine found help through Harvest Call, a faith-based organization that specializes in rebuilding after disaster. Nadine was referred to the Endeavors disaster case management team. While Harvest Call worked on construction, Endeavors connected Nadine to temporary housing and other services she needed. A year and half later, through the support from Harvest Call, Nadine was able to move into a new, safe, and permanent home.

Source: Bell et al. 2010.

VI. Outcomes for people and communities affected by disasters

Post-disaster outcomes for individuals and communities are interrelated and depend, among other things, on the severity of the disaster. Findings across the literature confirm that displacement disrupts people's social networks, support systems, and sense of security. These disruptions lead to psychological, social, and financial strain, which impede individual recovery for people within both impacted and host communities (Lowe et al. 2013; Merdjanoff 2013; Ratcliffe et al. 2019). How quickly individuals recover directly relates to community-level outcomes, which typically are observed within a few months of the disaster; by contrast, longer-term population and socioeconomic shifts emerge a few years later (Fussell 2015; Davlasheridze and Fan 2017).

Although there are many gaps in the reviewed literature, a consistent finding is that disasters and displacement caused by disasters have significant, negative impacts on individuals and communities. One limitation of the reviewed research on post-disaster outcomes is the focus on single, large-scale disasters. Further, because displaced people often return to the impacted community, the literature does not directly cover long-term outcomes of host communities. However, findings related to the long-term or permanent displacement of people and families demonstrate the community-level challenges that emerge for host communities. In this chapter, we summarize what is known about common outcomes after disaster displacement at both the individual and community levels, and across various types and severity levels of disasters.

A. People displaced by disasters experience emotional stress, psychological distress, and financial hardship after the disaster

When a person or family is displaced from their community, social structures, and culture, their ability to cope with stressful events is hindered (Merdjanoff 2013). These stressors occur for many displaced people and families, and present themselves regardless of income and demographics. However, the severity, duration, and eventual outcomes are worse if a person has limited social or financial resources before being displaced. For example, low-income renters displaced by Hurricane Katrina had a significantly longer recovery trajectory than higher-income residents and homeowners (Merdjanoff 2013). Merdjanoff (2013) suggests this finding could be attributed to renters lacking the control and authority to rebuild their apartments and houses; thus, they are more likely to face housing instability, experience longer periods of displacement, or permanently lose their homes. Housing instability—and the associated lack of safety, certainty, opportunity, and community—is considered a major impediment to long-term social, emotional, and economic post-disaster recovery (Fothergill and Peek 2015). Fitzpatrick et al. (2020) find that renters are also more likely to experience food insecurity after a disaster compared to those who own their homes.

Common outcome domains for adults identified in the reviewed literature

- Financial insecurity
- Housing instability
- Parenting efficacy
- Psychological distress
- Unemployment

People displaced by disasters commonly experience psychological distress (Lowe et al. 2013). In a qualitative study of human service providers in Hurricane Katrina host communities, disaster case managers reported that 40 percent of their clients experienced post-traumatic stress, anxiety, or depression more than a year into their displacement (Bell 2008).

Studies from the literature found consistent negative outcomes across most measures of financial health, including employability, income, credit scores, collections debt, bankruptcy, mortgage delinquency and foreclosures, and credit card debt. The largest effect is on credit scores, indicating a reduction in access to and an increase in the cost of credit (Ratcliffe et al. 2019). Studies on displaced people's post-disaster well-being found higher levels of stress, anxiety, and depression among those already experiencing financial insecurity before the disaster (Lowe et al. 2013). These conditions worsen when people face the costs of post-disaster recovery. These expenses may include moving, replacing personal belongings, buying new furnishings, and lost wages (Ratcliffe et al. 2019; Groen and Polivka 2008). Furthermore, the negative financial effects of disasters persist and may grow over time. Compared with similar people in unaffected areas, those living in impacted communities had higher rates of debt collections and bankruptcy in the years following a disaster (Ratcliffe et al. 2019).

In the initial months following a disaster, the unemployment rate among displaced people is typically 2 to 3 times that of the national average, which is attributable to the mismatch between the professional skills of the displaced people and their host community's job market (see Exhibit IV.4 for an example). Employment outcomes eventually rebound for people who return home, but for those still displaced a year or more after the disaster, rates of unemployment remain around 1.5 to 2 times the national average (Groen and Polivka 2008). Different groups may experience different economic outcomes after disasters. For example, after Hurricane Harvey, Hispanic residents were more likely to experience negative economic consequences and were more likely to report that they had experienced employment disruptions in the first few months following the hurricane, when compared to White residents (Fitzpatrick et al. 2020).

Among adults with children, difficulties experienced by the parent as a result of displacement can result in consistent negative effects on the child's psychological functioning, which in turn can negatively affect the parent (Lowe et al. 2013). Multiple studies that followed single mothers with low incomes and their young children in the years after Hurricane Katrina found that post-disaster financial strain and housing instability were associated with higher levels of maternal depressed mood. These outcomes were associated with lower levels of parenting efficacy and subsequent increased levels of psychological stress and behavioral challenges (Lowe et al. 2013).

B. Children displaced by disasters experience acute mental health vulnerabilities and often struggle with social and academic development

When children are exposed to or displaced by a natural disaster, they experience a range of psychological, social, and academic vulnerabilities, which increase children's risk for short- and long-term emotional distress. Literature shows that children are more severely affected by disasters than adults, but the effects differ by age and stage of development (Fothergill and Peek 2015). Toddlers and other young children may have nightmares, refuse to sleep alone, be irritable, and have temper tantrums. Adolescents and teens are more likely to engage in risky behaviors, such as smoking or drinking after a disaster, develop eating and sleep disorders, and be less interested in social activities and school. Children who are unable or unwilling to communicate their distress, and those with the least developed emotional coping

Common outcome domains for children identified in the reviewed literature

- Academic performance
- Behavioral challenges
- Emotional distress
- Mental health
- Social connections

skills, tend to suffer the most severe and prolonged traumatic reactions after disaster (Fothergill and Peek 2015).

A study of children displaced or greatly affected by Hurricane Katrina found that 38 percent had been given a mental health diagnosis since the hurricane (per parent reports), and 30 percent were still suffering from the diagnosed condition four years after the disaster (Lowe et al. 2013). For these children, the challenge of adjusting to new schools and establishing social connections was made more difficult by the behavioral issues that developed as a result of displacement (Fothergill and Peek 2015).

For school-aged children, disasters can disrupt their social development, academic progress, and long-term educational outcomes (Fothergill and Peek 2015). Children's intellectual growth is hindered when they miss school or cannot concentrate in the classroom, and children who change schools several times are more likely to drop out altogether (Lowe et al. 2013). Displacement often causes students to lose valuable instruction time, and some find it difficult—if not impossible—to catch up when they fall behind in their academic work (Fothergill and Peek 2015).

Conversely, schools provide stability and meet basic needs, which can help aid recovery for children displaced by disasters (Lowe et al. 2013). Many children and teenagers displaced to Colorado after Hurricane Katrina reported feeling less depressed and isolated after a few months in their new schools. While in school, the children were consistently surrounded by other young people, which opened up opportunities to establish friendships once they were ready to do so (Peek et al. 2011). Many students also benefited from educators in Colorado, who were sensitive to their situations and invested in helping them thrive. For example, some teachers set up a "buddy system" that paired a Katrina student with an "old student" from the school (Peek et al. 2011). As the initial distress of the displacement subsided, the children in Colorado became able and willing to acknowledge the benefits of living and going to school in their host community. The children recognized that the schools they were attending in Colorado were more racially integrated, had better facilities, and made more and higher-quality resources available to them (Peek et al. 2011).

C. Impacted communities experience population decline, housing shortages, depressed business activity, and economic fluctuation after a disaster

Post-disaster outcomes for impacted communities depend on the severity of damage to homes; businesses; and critical institutions, such as schools and hospitals. Outcomes for impacted communities typically are marked by population decline; shifts in the employment and economic environments; and interrelated challenges, including the availability of human services and affordable housing.

Immediately after a disaster, impacted communities experience substantial population decline. Population recovery is impacted most significantly by how quickly housing can be restored and what kind is restored (Merdjanoff 2013; Davlasheridze and Fan 2017). In most cases, the security afforded to homeowners after a disaster allows them to return, whereas others, such as less socioeconomically advantaged renters, may not feel returning is possible (Fussell 2015).

Post-disaster labor and supply shortages can create delays in housing recovery and, in turn, population recovery. For example, after Hurricane Ivan struck Alabama in 2004, it took approximately 1 year to rebuild 50 percent of the 7,000 homes that were destroyed. Six years later, homes were still being rebuilt, and the population had yet to fully recover (Merdjanoff 2013). In 2015, 10 years after the storm, New Orleans housing stock was still 40,000 homes short of its pre-disaster numbers, and its population was

approximately 384,000—79 percent of the number who lived there in the years before Katrina (Fussell 2015).

The recovery of schools and hospitals are key factors in an impacted community's overall recovery. When schools and health care facilities are damaged, people displaced by disasters tend to remain in their host communities longer, including the staff of human services agencies and faith-based and community organizations who were displaced from impacted communities. Without a functioning network of support services, the residents who rely on those services do not have the option of returning home (Bell et al. 2010). Again, this situation can be observed in New Orleans and the lasting impact Hurricane Katrina had on its Black community—a community that originally accounted for about 70 percent of the people living in poverty and 66 percent of the city's total population (Perls 2020). By 2015, New Orleans' Black population had declined by about 30 percent, or 97,000 people (Fussell 2015).

Given the post-disaster population and reconstruction challenges, the employment and economic environments of impacted communities are also likely to evolve. For example, reconstruction after disasters can lead to considerable economic activity and therefore job creation, although those jobs may be in different sectors—and ultimately involve different people—than those initially affected by the disaster (Black et al. 2012). These post-disaster shifts present additional opportunities and challenges during the recovery and repopulation phases. Urgency within the impacted communities to restore damaged structures and return to normal creates a sudden spike in demand for construction services and repair of utilities and urban infrastructure. This demand presents opportunities for private companies and contractors, but it may compete with other community-level goals, such as rebuilding rental or affordable housing, improving neighborhoods, and mitigating hazards (Fussell 2015). These outcomes contribute to and exacerbate the economic changes of impacted communities.

Some research suggests that small- to medium-scale disasters (such as Tropical Storm Bill in Texas and Oklahoma in 2015, and the California earthquakes in 2014) can temporarily stimulate local economies, but larger-scale disasters (such as the tornado outbreak in Kentucky, Alabama, and Indiana in 2012; Hurricane Sandy in 2012; and Hurricane Katrina in 2005) result in significant economic loss and uneven opportunities. Such an example occurred after Hurricane Katrina. In New Orleans, some displaced residents, such as people with low incomes who were not White, were unable to return due to limited job opportunities, whereas others, such as Hispanic and Latino workers from unaffected areas, came to the city seeking employment in construction (Black et al. 2012).

Additionally, the economies of coastal areas often rely on tourism and hospitality. These industries can account for a substantial portion of the job market—specifically service industry jobs (for example, restaurants, hotel, recreation) most frequently occupied by lower-income residents. These jobs offer little job security during economic lulls, and after a business rebuilds—potentially weeks or months after the disaster—there is no guarantee that pre-disaster employees will be able to return (Black et al. 2012).

D. Host community human service networks and infrastructure systems are strained by the influx of people and struggle to meet everyone's needs

Host communities are critical to the support and recovery of people displaced by disasters. However, they frequently are omitted in disaster planning, coordination efforts, relief funding, and the research field broadly (Spearing and Faust 2020). This oversight puts host communities, current residents, and displaced residents at a disadvantage after a disaster (see Exhibit VI.1 for examples after Hurricanes Irma and Maria

hit Puerto Rico in 2017). The sudden influx of displaced people in host communities following a disaster strains the host community's human service agencies, school system, and public infrastructure.

Exhibit VI.1. Displacement after Hurricanes Irma and Maria

Following Hurricanes Irma and Maria in 2017, 200,000 people were displaced from Puerto Rico to Florida within one month of the disaster. Those families often experienced housing instability, including frequent moves as they transitioned between short-term housing solutions; in addition, they often lacked access to affordable housing.

- **Puerto Rico's population declined sharply.** In 2018, the year following Hurricanes Maria and Irma, Puerto Rico saw a historic net migration loss. Between displacement, voluntary relocation by people who no longer felt safe in Puerto Rico, and those who followed displaced relatives to a state in the continental United States, the island's population decreased by 4 percent, or 124,000 people—nearly double the decrease rate of the previous year (Rivera 2020).
- **Displaced Puerto Rican families struggled to regain stability in Florida's host communities.** Difficulty adapting to life in Florida was a reality for many displaced Puerto Rican families. They often faced prolonged periods of housing instability. After initially being uprooted from the island by the disaster, traumatic events such as evictions, extreme overcrowding in shared housing, and difficulty finding employment have caused families to continually seek stability in new places. Efforts to build affordable housing were abandoned after local residents protested the initiatives, claiming affordable housing units would decrease their property values. Other existing supports, such as Section 8 housing, have three- to five-year waitlists, limiting their usefulness for immediate housing needs. However, the economic crisis and slow recovery on the island prevent many from returning even when going home is their preference.
- **Schools in Florida's host communities were overwhelmed by the influx of families from Puerto Rico.** By December 2017, more than 11,000 students from Puerto Rico had enrolled in Florida school districts—a 5 percent increase in the total kindergarten through 12th grade enrollment in the state since 2015. School staff were overwhelmed by the number of students who needed enrollment assistance, language support, counseling, and other services. Because of the timing of the disaster, the majority of students arrived after a deadline that determines state funding based on enrollment, which meant that local districts missed out on an estimated additional $42 million for the 2017 fall semester that would have helped provide staffing and support for the newly displaced students.

Sources: Rivera 2020; Hamm-Rodríguez and Morales 2018.

Disasters can cause or exacerbate mental and emotional health issues, and human services providers in host communities can become overwhelmed by the increased need for their services after a disaster (Speier et al. 2018). For example, to accommodate the urgent needs of newly displaced people in Austin, Texas after Hurricane Katrina, several agencies responded by placing their full-time case managers on site at outlying apartment complexes where many displaced people were housed (Bell 2008). Immediately following a disaster, low-income populations and other marginalized residents of the host community may have a harder time accessing necessary resources as services are diverted to help those newly displaced (Spearing and Faust 2020).

Host communities located close to an impacted area often experience spillover effects—both from the disaster and the sudden influx of displaced people—and, as a result, face greater capacity challenges. These neighboring host communities may experience labor shortages because construction and sanitation workers support recovery in the impacted community. They also might face housing shortages as displaced people from the impacted community find new housing close to their original home (Spearing and Faust 2020). In one study, a county health official spoke about this phenomenon in Chico, the closest city to Paradise, California, which was heavily affected by the Camp Fire: "Almost overnight, Chico became the number one housing market in America because houses that were sitting on the market or were not selling were selling now for $100,000 over asking price with bidding wars happening. And so our housing market went through the roof and our rental market just evaporated. We had no rentals" (Rosenthal et al. 2021).

Post-disaster housing scarcity can disproportionally affect residents in the host community with low incomes. When public housing and community shelters are repurposed to serve displaced people, there can be a cascading displacement of the local unhoused residents who consistently rely on those services (Spearing and Faust 2020).

The abrupt population surge also has implications for a host community's infrastructure. For example, city agencies serving people displaced by the 2018 Camp Fire reported increased traffic; traffic incidents; and notable strain on utilities, such as water, sewage, and power (Spearing and Faust 2020). See Exhibit VI.2 for more information about infrastructure challenges in host communities after the Camp Fire.

Exhibit VI.2. Host communities in Butte County after the 2018 Camp Fire

The November 2018 Camp Fire—the deadliest wildfire in California history to date—destroyed 153,336 acres of land in and around Paradise, California, a foothill town located in Butte County. Three months after the fire, city officials used cell phone data to determine that 60 to 70 percent of those displaced remained in Butte County. The majority of displaced persons took residence in Chico, the largest city in the region, increasing its population by over 20 percent. According to Chico's city manager, this sudden and sustained increase "strained nearly every aspect of civic infrastructure … from the sewer to streets."

To meet increased demand in the transportation system, practitioners relied on temporary adaptations (for example, creating temporary roadways, adding traffic control devices, and adjusting transit). A staff member with the city's Department of Transportation shared with a researcher that "there were basic transportation issues once the shelters opened," which led them to change operations by "coordinating with transit to adjust bus routes to serve where the shelters [were] located."

Source: Spearing and Faust 2020.

VII. Recommendations and emerging solutions for supporting human service delivery related to disaster displacement

The literature reviewed for this report offers recommendations for improving human services and better supporting people displaced by disasters. Governments and nongovernmental organizations can engage in disaster resiliency planning, a proactive approach to improve communities' ability to plan for and recover from future disasters. Public policy efforts to support displaced people could be improved by a greater focus on displacement related to climate change and slow-onset disasters, simplifying the process for displaced people to find and access human services after a disaster, providing more supports for host communities, and improving coordination between host and impacted communities.

A. Disaster resiliency planning

Resilience reflects the ability of an individual, family, organization, system, or community to recover from a disaster effectively (HUD 2013; Glandon et al. 2008; Bratspies et al. 2018). Communities with greater capacity, such as access to human, social, political, and economic capital, are more likely to be resilient in the face of a disaster (IOM 2015). Communities typically take two approaches to managing disasters: a proactive approach that focuses on mitigation and preparedness, and a reactive approach that emphasizes response and recovery.

Disaster resiliency planning is a proactive approach to managing disasters aimed at improving communities' ability to plan for and recover from future disasters, ultimately reducing the impact of disasters on them (Kyne and Aldrich 2019; IOM 2015). Disaster resiliency planning can be done by federal, state, and local governments, as well as nongovernmental organizations. It can also be done at the regional level to address multicounty or multistate capacity to respond to the needs of displaced people and facilitate rapid recovery and return to impacted communities (Yabe et al. 2020; Levine et al. 2007). This process can be particularly useful for regions at high risk for disaster and communities that have large populations with low incomes. It typically involves establishing communication and collaboration with stakeholders and community members, assessing needs, collaboratively developing a plan before a disaster happens, and reassessing and planning after a disaster occurs (Kyne and Aldrich 2019; IOM 2015; Davlasheridze and Fan 2017).

Building strong partnerships by engaging local interested parties and facilitating collaboration can help produce better resiliency plans and a more engaged and prepared community (Bratspies et al. 2018). Engaging with state and city government agencies, local leaders, and community groups before a disaster occurs can help to set goals and priorities for resilience, and establish clear roles across organizations, which can be activated quickly when a disaster occurs (IOM 2015). Key people and organizations who could be engaged in disaster resiliency planning include representatives from the health sector, urban planning, housing, community development, environmental development, community networks and nonprofits, individuals and families in the community, and VOADs and community organizations active in disaster (COADs) that are already active on county or state levels. Each stakeholder can potentially gather data and information that may be difficult to access and bring a different perspective on strategies for building stronger communities (IOM 2015). Other important groups to involve include levels of government separate from those doing the planning. They may be able to gather different types of information more easily. For example, when local administrators are overwhelmed, state and federal organizations may have the capacity to gather information on disasters (Boin et al. 2019).

For local governments and organizations, **engaging with community members can help facilitate service delivery during disasters, promote the return of displaced people after a disaster, and help create a sense of community ownership that supports resilience** (Kyne and Aldrich 2019; IOM 2015). Trusting relationships and social connections with community members are important to recovery after a disaster. Without such relationships, the high costs of returning—including financial, lack of economic opportunity, and psychological burdens—may overwhelm the benefits, and people may choose not to return to the impacted community (IOM 2015). If community members and community decision makers establish trust, interaction, cohesion, and collaboration early within the planning process, better recovery can occur more quickly. Disaster resiliency planning works best when a top-down vertical structure—meaning that the approach relies on a higher authority—is not the only structure but instead is combined with community input (Fraser et al. 2022). A collaborative process brings stakeholders and community residents together to envision a healthy community, assess and prioritize key deficiencies, and create a sense of community ownership critical to optimal community health improvement and recovery planning (IOM 2015).

Governments and organizations can conduct capacity and vulnerability assessments to help understand their communities' capacity limitations that would be stressed during and after a disaster (IOM 2015). This process entails an assessment of their vulnerable infrastructure and populations, as well as their assets (IOM 2015). The Social Vulnerability Index (SoVI) and Social Capital Index (SoCI) are two data-driven tools that can help identify areas possibly needing additional assistance to recover from a disaster (Kyne and Aldrich 2019). For example, Hillsborough County in Florida, which frequently experiences hurricanes, categorizes residential parcels by wind and flood vulnerability (IOM 2015). This information provided planners with data showing that about 22 percent of all the county's housing was in an area that had a 1 percent chance of experiencing a flood every year (IOM 2015). Knowing where houses most vulnerable to disasters are clustered can help county planners determine where temporary shelters are more likely to be required in the event of a hurricane. Hillsborough County also performed capacity assessments to determine what capabilities existed within the community to promote rebuilding and develop policies that could promote the effectiveness of these capabilities during recovery (IOM 2015). It included an inventory of different organizations and the roles and expertise of each, such as determining which manufactured housing vendors would be capable of providing the type of temporary units needed for temporary housing in the event of a disaster.

Planning at the state and local government levels is important to maximize efficiency in the use of federal resources and create equitable and sustainable resiliency plans (IOM 2015). State and local governments control many critical planning levers, including the locations and structural requirements of essential infrastructure; how land is used; and how structures are built, such as how close homes and schools can be to contaminated areas, and building requirements for residential homes (Bratspies et al. 2018). Before a disaster, established memoranda of understanding and processes for regulations, permits for rebuilding, and collaborating across sectors can help facilitate recovery (IOM 2015). Communities that have disaster resiliency plans in place when a disaster occurs are better equipped to undertake recovery more quickly, regarding the long-term objectives of health, resilience, and sustainability (IOM 2015).

In the early stages of disaster recovery, it can be helpful to conduct an impact assessment. This assessment can help dictate what resources are needed, how available funding will be allocated best, and what stakeholders need to be engaged quickly (IOM 2015). It can also help determine what damage the disaster has caused, providing public officials and emergency management entities with information

about the needs of an affected community. As part of this assessment, interview teams comprising staff and volunteers from state, local, and regional health departments and organizations conduct community-specific surveys. Leaders can also use this information to target specific warnings to affected residents. As the response and recovery progress, the community's needs may change. Reassessing throughout the recovery process allows for continuous monitoring of how a disaster has impacted and continues to impact the community (IOM 2015). Exhibit VII.1 provides an example of resiliency planning in Galveston, Texas after Hurricane Ike.

Exhibit VII.1. Disaster resiliency planning in Galveston, Texas

In September 2008, Hurricane Ike struck Galveston, Texas. It largely flooded the city, and 70 percent of its buildings were destroyed or badly damaged. The city's health and safety networks also were damaged, which presented significant challenges for all residents. Dr. Alexandra Nolen, director of the University of Texas Medical Branch Center to Eliminate Health Disparities (CEHD), saw this disaster as an opportunity to use funding for Galveston's recovery to reduce health disparities and create a healthier community in the city. Dr. Nolen and her team received funding in October 2009 to increase the evidence base for post-disaster recovery planning and informed policymaking, including a focus on the social determinants of health.

CEHD's efforts included three pillars of action: (1) assembling an evidence base on local challenges related to social determinants of health, (2) raising community awareness and knowledge of social determinants of health through education and engagement, and (3) partnering with decision makers and planners to incorporate evidence-based recommendations into the disaster planning process. For example, the hurricane reduced access to healthy food after several full-service grocery stores were flooded. Dr. Nolen and her colleagues documented the challenge, explored options with local community economic development groups, and highlighted the problem in the media. After two years of frequent presentations at local planning meetings, CEHD gained more recognition for its goal of creating a healthy community, and community groups began seeking input from CEHD on future plans.

Source: IOM 2015.

B. Public policy recommendations identified in the literature

The reviewed literature offered a number of recommendations that advised expanding research on the relationship between climate change and disaster displacement; developing a greater understanding of the long-term needs of people and communities affected by disasters; and potentially revising federal policies, procedures, and funding mechanisms to better serve them.

A national framework for addressing disaster displacement related to climate change could help create a common understanding and process for supporting displaced individuals and communities. A 2021 White House report recommends the establishment of a Standing Interagency Policy Process on Climate Change and Migration, tasked with studying the coordinating mechanisms available to respond to climate change and disaster displacement both domestically and across international borders (White House 2021). Climate change, which is often associated with slow-onset disasters, such as sea-level rise and more frequent and intense heat waves, is also associated with increased displacement, especially long-term displacement (Ratcliffe et al. 2019; Li et al. 2021). Although the direct interactions between climate change and displacement are still being studied, according to IDMC, "there is broad agreement among scientists that climate change in combination with other factors is likely to increase future displacement"

(IDMC and NRC 2021). Researchers have noted that existing federal funding mechanisms are insufficient to address displacement needs connected to climate change (Li et al. 2021; Martín and Williams 2021). One approach that could be addressed in a national framework is using proactive programs to buyout and relocate individuals and communities away from areas at high risk for disasters, such as the National Flood Insurance Program. However, the National Flood Insurance Program is focused on individual households and does not easily facilitate the community-level buyouts that could be needed as a result of rising sea levels or other large-scale, slow-onset disasters (Bratspies et al, 2018). Such a framework should be mindful of inequitable outcomes that often emerge in impacted communities, such as climate gentrification, in which disaster displacement changes the demographics of an impacted community, and environmental redlining, in which disaster mitigation and recovery produce inequitable outcomes (Miller and Vu 2021).

Host communities require increased resources to serve the needs of displaced populations (Spearing and Faust 2020). Regardless of whether such a community hosts displaced people formally (that is, through an agreement) or informally (that is, when people begin arriving with little notice), there are certain policy steps needed to ensure their presence is supported, orderly, and likely to lead to recovery. Host communities need extensive financial resources to support the recovery of displaced populations. They could benefit from information and best practices about adapting city infrastructure, such as public transportation and utilities (Spearing and Faust 2020); using zoning approaches to facilitate temporary housing (Li et al. 2021); serving displaced children in host community schools (Fothergill and Peek 2015); working with faith-based and community organizations (Bell 2008; De Vita et al. 2008; Sadri et al. 2017); and accessing federal financial support (Spearing and Faust 2020).

Communities at the edges of Presidential Disaster Declaration zones could also benefit from increased attention and support. Communities just outside of these zones can act as unofficial support hubs for disaster response and recovery, even though they are not host communities sheltering large numbers of displaced people (Yabe et al. 2020). Targeting increased support to those communities to facilitate the recovery of nearby impacted communities may help shorten disaster-related displacement.

The process for accessing human services aid immediately after a disaster is complex and simplifying the process could help displaced people recover more quickly during and after it. Making human services delivery more accessible after a disaster would help support the urgent needs of people in the impacted community, as well as those displaced. For example, services could be improved by expediting financial relief after a disaster; facilitating disability, access, and functional needs accommodations in shelters and temporary housing; and streamlining the disaster aid application process (Ratcliffe et al. 2019; IOM 2015).

Further research is needed to understand the behaviors and needs of disaster-displaced populations and how they move from impacted communities to host communities, and sometimes back to the former (Plyer et al. 2010; Levine et al. 2007; Miller and Vu 2021; Yabe et al. 2020). This research could be used to improve our understanding of displacement and the associated human services. The literature often relies on short-term data that do not capture the experiences of long-term displacement. Some research includes samples not representative of displaced populations—for example, by excluding populations with fewer resources (Groen and Polivka 2008). One promising pilot program reviewed in the literature used mobile phone geolocation data to track and predict the housing needs of displaced people in impacted and host communities (Cumbane and Gidófalvi 2021). Another group of researchers called for the Census Bureau to leverage its data collection capacity to track geographic trends in disaster displacement (Plyer et al. 2010). Other promising areas include the use of economic sociology and

network analysis approaches to better understand the social ties that undergird many movement decisions during displacement (Spokane et al. 2013; Iuchi 2014).

Disaster aid should recognize that people with fewer resources will struggle to regain their pre-disaster socioeconomic status more than those with greater resources (IOM 2015). Those without assets may be more likely to become delinquent on debts because of the disaster's disruption. A variety of supports could lend stability to those with fewer assets after a disaster. One recommendation is to change delinquency reporting guidelines and offer more leeway to those who become delinquent on debts after a disaster (Miller and Vu 2021; Ratcliffe et al. 2019).

VIII. Gaps in the literature

This literature review examined post-disaster human services needs related to displacement—an expansive topic. In the course of this review, the study team identified several notable gaps in the literature on disaster displacement and human services. These gaps, often confirmed by the experts the team engaged, suggest the field would benefit from further research. In particular, it could likely benefit from the use of more diverse research methods beyond case studies focused on large-scale disasters. Additional research on these topics could help the field of human services better understand, plan for, and respond to disaster displacement. Notable gaps in the research include information about the following:

- **Lack of commonly defined terms on disaster displacement.** As described in Chapter III, several key terms for this report, such as "impacted community" and "host community," were not consistently defined across the literature reviewed. In particular, the disaster recovery process and its constituent phases were poorly defined. This lack of common definitions potentially is because of the recent growth of the field (Wolbers et al. 2021), likely stemming from increasing displacement and the associated growing interest in the field. Such a lack of agreement on definitions for key terms may limit the comprehensiveness of a literature review such as this one and present challenges in building an understanding of the field of disaster displacement and post-disaster human services needs. Additional research and consensus building on key terminology could help develop frameworks or criteria that government agencies and community or faith-based organizations could use before, during, and after a disaster.
- **Needs and resources for delivering human services beyond housing support.** Literature that covered post-disaster human services not related to housing did so at a high level and provided little detail on how the services were accessed or delivered. Furthermore, when articles did discuss human services other than housing, such as child care, employment, and education, they typically discussed them within the context of housing needs (Merdjanoff 2013; Fussell and Lowe 2014; Spearing and Faust 2020). In other words, the literature often described housing as an essential step before people displaced by disasters could easily access other human services (Lein et al. 2012; Bell 2008). The literature only discussed additional human services needs of displaced persons on a limited basis; other sections of this report discuss exceptions.
- **Human services needs and resources for specific populations, such as those experiencing homelessness before a disaster.** Several articles discussed how some marginalized populations are particularly vulnerable to adverse outcomes from disaster displacement, including older adults and people with health risks (Rosenthal et al. 2021), those without access to personal transportation (IOM 2015), people with disabilities (Abramson et al. 2010), and those with low incomes (Black et al. 2012). Other marginalized populations that did not appear in the reviewed literature, even though they also may be particularly vulnerable to adverse outcomes following a disaster, include people experiencing homelessness before a disaster; people experiencing domestic violence; and individuals living in foster care systems or institutionalized settings, such as correctional facilities. Moreover, the reviewed literature largely did not address how needs and outcomes vary by disaster type and scale, possibly as a result of the focus on case studies of large-scale disasters, such as Hurricane Katrina. Additional research on needs, service delivery, or outcomes related to these populations likely would be useful to practitioners.
- **Long-term outcomes after a disaster.** Research is lacking on the long-term outcomes and experiences that follow being displaced by a disaster. Although some research examines the outcomes

and experiences of people one to two years after they were displaced (Bell 2008; Fussell and Lowe 2014), only a limited number of studies examine long-term outcomes several years after a disaster (Fothergill and Peek 2015). During discussions, several experts suggested that current methods of tracking the movement of displaced persons following a disaster are inadequate, which might partially explain this relative lack of studies on long-term outcomes. Several of the articles reviewed explored the issue of insufficient tracking methods and potential improvements (Yabe et al. 2020; Plyer et al. 2010). In addition to hampering understanding of long-term outcomes, inaccurate or inadequate tracking of displaced persons can impede the delivery of human services and federal and state funding allocation (Plyer et al. 2010; Hamm-Rodríguez and Morales 2018). A number of federal disaster grant programs are allocated on a per-capita basis, so inaccurate tracking of displaced people potentially results in too much funding for some host communities and too little for others (Gilbert et al. 2020; FEMA 2021). Better tracking of where displaced people move would help increase understanding of the outcomes for displaced populations and host communities and could improve funding allocation and related service delivery.

- **Capacity and operations of human services during and following disasters.** The literature reviewed offered little examination of how providers of human services, including state and local governments and community or faith-based organizations, deliver services during different types and scales of disasters, or how they coordinate with other entities involved in the disaster response. The literature's focus on case studies of large-scale disasters further limits holistic understanding of how service delivery varies across different types of disasters. Additionally, very few articles studied how these service providers remain resilient and capable of providing services during and following disasters (Bell et al. 2010; Gilbert et al. 2020). Exceptions included studies of disaster case management in Austin for people displaced by Hurricane Katrina (Bell 2008), how homeless services organizations in Massachusetts developed disaster preparedness plans and procedures, and how homeless services organizations in California managed operations during wildfires (Wexler and Smith 2015; Gin et al. 2021). This gap potentially limits practitioners' understanding of implementation strategies that could be used to enhance the resilience, preparedness, and post-disaster effectiveness of human services providers.
- **How host communities support human services needs of displaced people.** Host communities are rarely the focus of research on disaster displacement, which makes it challenging to identify ways to help displaced populations residing in these communities. Experts discussed the substantial strain that host communities often bear as they absorb those displaced from neighboring communities by disaster. A large influx of displaced people presumably has a significant effect on a host community's human services infrastructure, labor market, and affordable housing pool, among other systems, but research on these impacts is currently limited (Spearing and Faust 2020). As discussed previously, the proper allocation of resources and funding is a major issue following a disaster and during the recovery phases, and an incomplete understanding of the experiences of host communities may hinder positive outcomes of those who relocated to them.
- **Slow-onset disasters.** All of the literature reviewed focused on the effects of sudden-onset disasters and did not directly address those with a slow onset. The research reviewed provided a definition of slow-onset disasters, which include sea-level rise or more frequent and intense heat waves; their cumulative effects can take years to become apparent (Black et al. 2012). In contract, sudden-onset disasters, such as hurricanes, tornadoes, or wildfires, are characterized by their rapid development, and the destructive elements of these disasters generally last hours to weeks. Several experts

suggested that slow-onset disasters, such as sea-level rise, are increasingly a cause of displacement, and that additional research is needed to understand these disasters and associated displacement.

- **Human services needs and delivery during a variety of types and scales of disasters.** A large number of the articles reviewed for this report were case studies of specific large-scale disasters, such as Hurricane Katrina, Hurricane Sandy, or the Camp Fire in Paradise, California. This observation was also documented in a literature review by Wolbers et al. (2021) which noted that despite the large number of hurricanes that have made landfall and displaced millions of people since 2005, a disproportionate amount of literature focuses on Hurricane Katrina. Although case studies and similar methods are useful for analyzing and disseminating lessons from specific disasters, they do not provide insight into commonalities and generalizable takeaways related to human services delivery and needs across different disasters or types of disasters. For instance, the needs of persons displaced by a hurricane may differ from those displaced by a wildfire or tornado. Needs likely also vary based on the scale and intensity of a disaster. Furthermore, the delivery of human services may depend on the specific circumstances of a disaster. This focus likely limits our understanding of common effects, needs, and outcomes relating to more common disasters, compared to those resulting from rare, large-scale ones. One article suggested that more case studies of specific disasters will help to generate more evidence about how specific regions of the United States address disaster displacement (Levine et al. 2007).

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Appendix A

Literature Review Search Parameters

Literature review search parameters

Date limits for search	2005–2021
Language limits	English
Databases	SCOPUS, Academic Search Premier, Business Source Corporate Plus, Soc Index
Google custom search engine list URLs for grey literature	https://ncdp.columbia.edu/ https://www.hud.gov/ https://www.urban.org/ http://progressivereform.org/ https://www.internal-displacement.org/
Combine sets – Reviews/syntheses	1 AND 2 AND 6 1 AND 2 AND 3 AND 6
Combine sets – Services and communities	1 AND 2 AND 3 AND 4
Combine sets – Outcomes	1 AND 2 AND 3 AND 5

Set	Concept	Key words	Subject headings
1	**Displaced**	Disaster displacement	"population movement" OR "Disaster induced migration" OR "forced migration" OR displaced OR displacement OR Subject ("disaster victims" OR displaced)
2	**Event**	Disaster event	Disaster OR Tornado* OR "Severe Storm*" OR Hurricane OR "Tropical Storm*" OR Flood* OR fire OR Wildfires OR Earthquake OR Drought OR “chemical spills” OR “gas leaks” OR “radiation poisoning” OR “water contamination” OR explosions OR “structure collapse” OR Subject (disaster)
3	**Service provision**	Human service needs of displaced people	"Disaster relief" OR "relief effort*" OR "disaster response*" OR "emergency management" OR "Disaster Management" OR "inter-organizational coordination" OR "non-established disaster relief" OR "Emergency shelter" OR "infrastructure services" OR "infrastructural capacity" OR housing OR employment OR food OR water OR "public benefits" OR transportation OR "job loss" OR childcare OR education OR "family network*" OR "community network*" OR “poverty*” OR “low-income*” OR Subject ("emergency management" OR "disaster relief")
4	**Communities**	Impacted and host communities	"host communit*" OR "impacted communit*" OR "hosting communit*" OR "neighboring communit*" OR "Voluntary Organizations Active in Disaster*" OR "state agenc*" OR "county agenc*" OR "local agenc*" OR Subject (communit*)
5	**Outcomes**	Recovery	"Community recovery" OR "population recovery" OR "community resilience" OR "Resilience to disaster*" OR "permanent relocation" OR "temporary relocation" OR "population increase" OR "population decrease" OR Subject ("disaster resilience")

Set	Concept	Key words	Subject headings
6	**Reviews**	Literature reviews	(review n3 (Literature OR systematic OR scoping)) OR "meta-analys*" OR "meta-analyz*" OR metaanalys* OR metaanalyz* OR metaanalyt* OR "evidence review" OR (research n2 synthes*)
Case study sets (included with Event set as ORs)			
7	Hurricanes Irma and Maria		“Irma” OR “Maria” OR “Cudjoe Key”
8	California wildfires		“August” OR “Dixie” OR “Creek” OR “Thomas” OR “Cedar” OR “Rush” OR “Complex”
9	Flint water crisis		“Flint” OR “Michigan” OR “Genesee County”
10	Cedar Rapids, Iowa floods		“Cedar Rapids” OR “Iowa”
11	Greensberg, Kansas tornado		“Greensberg” OR “Kansas”

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