Addressing Rural Healthcare Access Disparities through Giving: Using the Design Thinking Model to Explore New Philanthropic Opportunities

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Executive Summary

While 19 percent of the U.S. live outside urban areas, people in rural America consistently exhibit higher rates of negative health outcomes, such as heart disease, diabetes, stroke, and cancer. These disproportionate outcomes speak to challenges in health care access that can be contributed to distance, health care professional shortages, and other infrastructure challenges. In this report, we examine rural America, health disparities in rural communities, and make recommendations for positively impacting these communities through design thinking and philanthropic investment.

Addressing Rural Healthcare Access Disparities through Giving: Using the Design Thinking Model to Explore New Philanthropic Opportunities

The ability to live a healthy and prosperous life shouldn't be constrained by the geographical location in which we live. However, there are clear disparities in the United States between people living in urban areas and those in rural areas. These disparities exist in health outcomes, in addition to access caused by distance and technological constraints in rural areas. In this report, we explore who rural Americans are, what healthcare disparities exist, and make recommendations for making a financial investment to decrease the impact of these disparities. We also detail the design thinking model of problem solving and how this framework can guide the development of interventions.

Context of Rural Americans

What are Urban & Rural Areas?

To define *rural* in America, we must first identify what it is not, specifically *urban*. When we are asked to imagine urban and rural life, often we first see a bustling urban city, full of people and industry, with skyscrapers lighting up the night sky. Next, we see rural life as quaint farmland bordered with crops and cows. However, the demographic definition is much more complex. The distinction is important, as the delineation between urban and rural impact nearly every area of public life, including policy, law, economic development, health, and philanthropy.

According to the U.S. Census Bureau (2016), urban areas are defined using measures of population, land use, population density, and distance to other areas. Since the 2000 Census, urban areas have been divided into two groups: urbanized areas and urban clusters. This distinction is primarily based on population and density, often to account for areas more suburban than centrally urban. Therefore, *rural* is any Census statistical area (census tract or block*)* that is simply not *urban*. Table 1 details the population thresholds and other characteristics of these areas (Ratcliffe et al., 2016).

Table 1

Classification of Urban and Rural Areas

Area	Population	Density	Land Use	Distance	Summary
Urbanized Area	50,000 or more	1,000 ppsm* or 500ppsm that contain mix of residential and nonresidential land use	Residential areas or nonresidential areas with urban use, such as parking lots or airports	Areas that may not meet population criteria, but are a *hop or jump*** away from more densely populated areas	• Dense • Large population • Close together • Built-up areas
Urban Cluster	2,500 – 50,000				
Rural Area	< 2,500	Less dense	Sparse	Long distances between other areas	• Sparse • Small population • Large distances • Not many built-up areas

Source: Ratcliffe et al., 2016.
* People per square mile.
** See (Ratcliffe et al., 2016)

At a county-level, areas can be defined further by a level of rurality: mostly urban, mostly rural, or completely rural. According to the 2010 Census, 709 counties were completely rural, 1,185 mostly rural, and 1,254 mostly urban (*Rural America, a Story Map*, 2010).

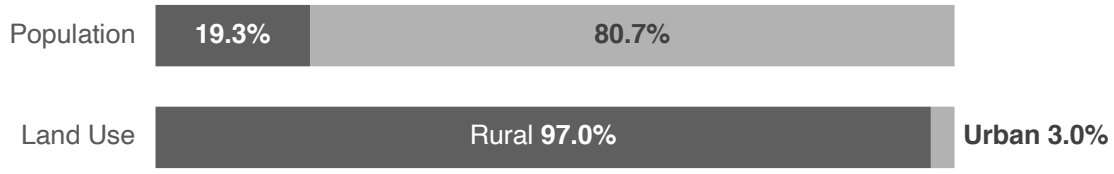
Who are Rural Americans?

According to the 2010 U.S Census, 19.3 percent of Americans live in rural areas, while about 80 percent of the U.S. live in urban areas. However, urban areas only account for approximately three percent of land in the U.S, leaving over 97 percent of land to be occupied by

less than a fifth of the population (see Figure 1) (Ratcliffe et al., 2016). A majority of people living in rural areas reside in the South, Midwest and Northeast (64.4 percent), with nearly 50 percent living in the South (*Rural America, a Story Map*, 2010). According to Parker et. Al (2018), while a majority of the population is urban, a majority of counties are rural. Figure 2 shows where rural, suburban, and urban counties are located in the U.S. (Parker et al., 2018).

Figure 1

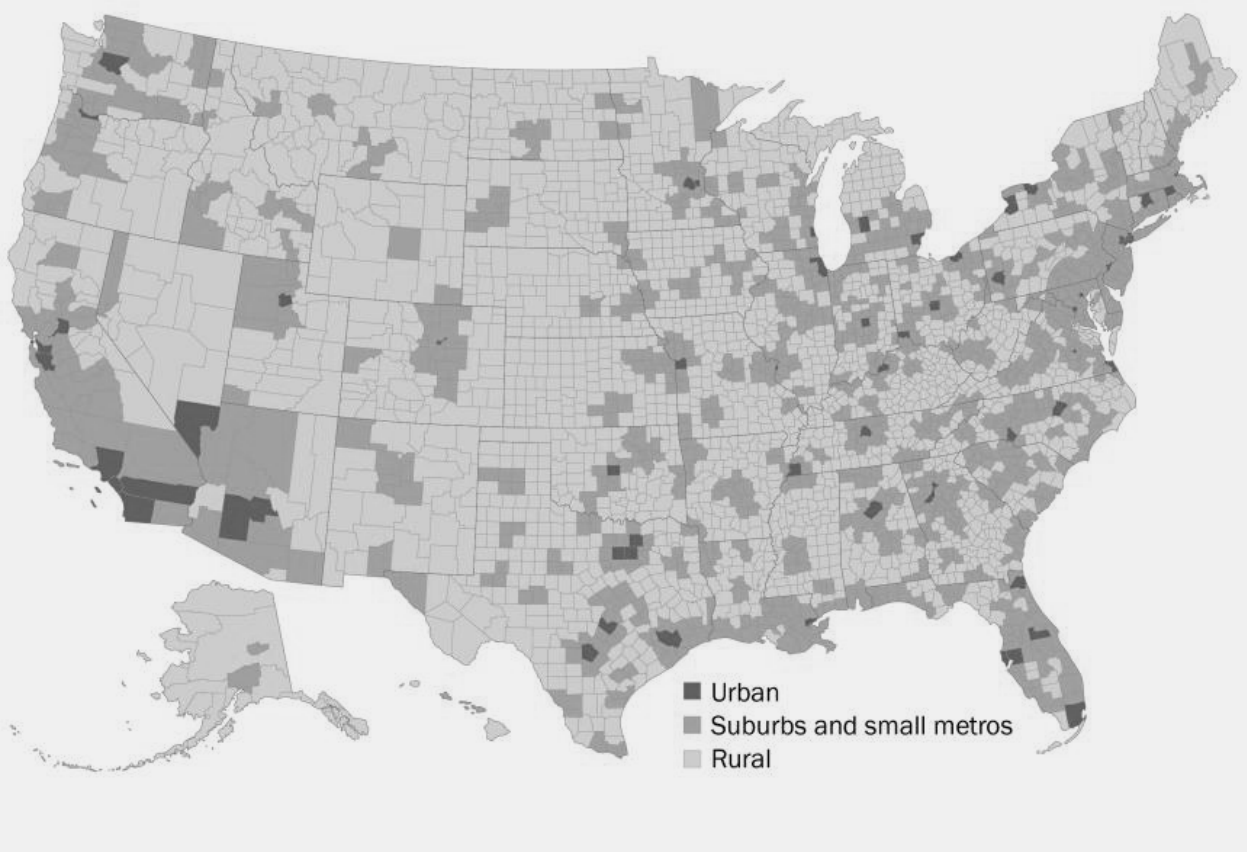
Population in Urban and Rural Areas, 2010



Source: Ratcliffe et al., 2016.

Figure 2

Counties by area type



Source: Parker et al., 2018.

Demographics

Demographically, people in rural areas are similar to urban centers, but some differences exist. The 2017 American Community Survey (ACS) found that with a median age of 44, people in rural areas tend to be older than urban areas (37 years) and have a higher percentage of people 65 and older (18.0 percent vs. 14.1 percent for urban areas). While slightly more adults 18 years and older are male (50.3 percent), 52 percent of adults over 65 are women (U.S. Census Bureau, 2017a).

Marriage and Family. The 2017 ACS also found that nearly three-quarters of people in rural areas live in families (72.1 percent; 65.9 percent for U.S), with 58.6 percent in married families (48.4 percent for U.S). Over half of both men and women are married (57.0 percent, 57.1 percent), and 10.7 percent of both men and women are divorced. While this is lower than the national rate for women (12.1 percent), it is higher for men (9.5 percent). The average family size in rural areas is slightly lower than the U.S.: 3.06 and 3.24 person, respectively. Of all births in the U.S. in the past 12 months, 16.5 percent were to women ages 15 to 50 living in rural areas, approximately 660,000 births. Nearly a third of these mothers were unmarried, 31.7 percent (U.S. Census Bureau, 2017c).

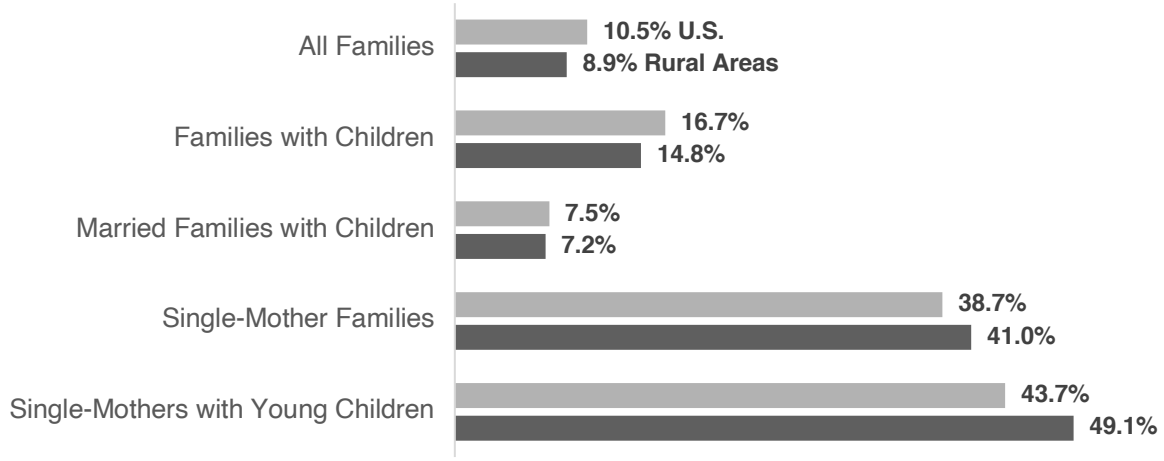
Education and Economics. According to the 2017 ACS, 12.6 percent of adults 25 years and older in rural areas have less than a high school diploma, while 22.2 percent have a bachelor's degree or higher, less than the U.S. overall, 30.9 percent (U.S. Census Bureau, 2017c). The unemployment rate for people in rural areas was 5.8 percent, slightly lower than the U.S. overall of 6.6 percent. The median household income was $56,035, compared to $57,652 nationally. For families, the median income was $67,278 for rural Americans, compared to $70,850 overall. The wage gap for women in rural areas was wider than the national gap. In rural areas, the median earnings for women working full-time was $36,885, compared to $49,655 for men, a difference of nearly $13,000 per year. This is a gap of 26 cents for every dollar of male earnings, compared to 20 cents nationally (U.S. Census Bureau, 2017b).

Poverty. The 2017 ACS also found that approximately 13 percent of people in rural areas experienced poverty in the past year, including 17.6 percent of children under 18 and 20 percent of children under five. Nine percent of families in rural areas experienced poverty in the past year, including 14.8 percent of families with children and 15.8 percent with children younger than five only. The poverty rate was significantly lower for married families, 5.1 percent overall and 7.2 percent of families with children. However, single-mother households in poverty

were higher in rural areas than in the U.S. overall. Figure 3 shows the rates of poverty in single-mother households in rural areas. (U.S. Census Bureau, 2017b).

Figure 3

Percent of Families with Children Whose Income in the Past 12 Months was Below Poverty



Note: Families with children are families with related children of the householder under 18 years old; 'single-mother families' are families with female householder, no husband present, with related children of the householder under 18 years old; 'single-mothers, young children' are families with a female householder, no husband present, with related children of the householder under five years only.

Source: (U.S. Census Bureau, 2017b)

Disparities in Health and Wellness

While gaps exist for educational attainment, household income, and poverty, significant disparities exist in the areas of health and wellness for people living in rural counties. Parker et al. (2018) found that after job availability and public transportation, "two-thirds of rural residents say [access to good doctors and hospitals] is either a major or minor problem where they live." Poverty, access to high-speed Internet, and drug addiction were among the top problems found in the survey. Table 2 shows the major problems rural residents said they have in their communities. (Parker et al., 2018).

Table 2

Percent of Rural Residents Saying Each is a Major Problem in Their Local Community

Drug addiction	46 %
Access to public transportation	43
Availability of jobs	42
Availability of affordable housing	36
Poverty	32
Access to high-speed internet	24
Access to good doctors and hospitals	23

Source: (Parker et al., 2018)

Provider Shortages

This anxiety exhibited by rural residents follows healthcare and wellness indicators as well. Rural areas fall behind their urban counterparts in simply the number of providers available in rural counties. Ashrafzadeh (2017) found that 77 percent of rural counties in the U.S. are designated Primary Care Health Care Professional Shortage Areas (HPSA) by the Health Resources & Services Administration (Ashrafzadeh, 2017). HPSAs are geographic areas with shortages in primary care, dental or mental health professionals or areas with significant shortages for specific at-risk populations, such as migrant workers, Native Americans, the homeless and correctional facilities (*Health Professional Shortage Areas (HPSAs)*, 2019).

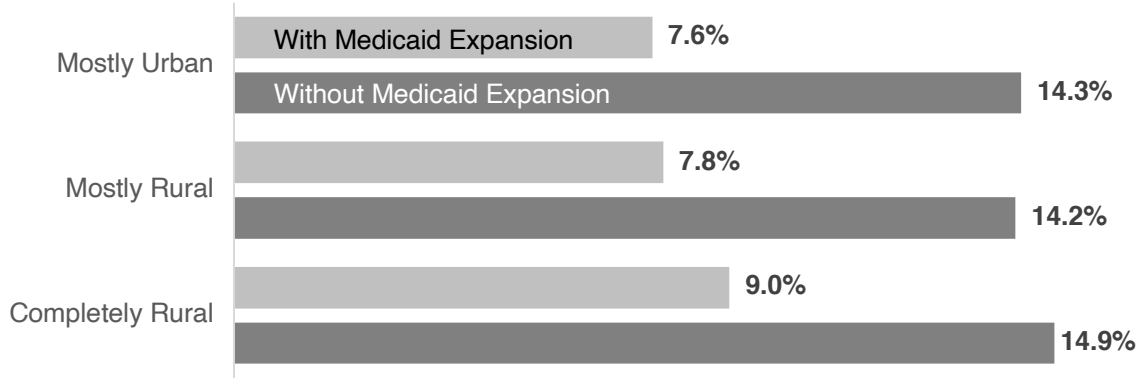
Lack of Health Insurance

In addition to living in shortage areas, Cheeseman Day (2019) found that rural counties have higher rates of uninsured residents, compared to urban counties, particularly those counties in states without Medicaid expansion. The analysis found that a lack of health

insurance increased as counties were more rural. For completely rural counties, 12.3 percent of residents were uninsured, compared to 11.3 percent for mostly rural and 10.1 percent of mostly urban counties. For rural counties in states without Medicaid expansion, uninsured rates were nearly double those with Medicaid expansion. Figure 4 shows the percent of people lacking health insurance by rurality in states with and without Medicaid expansion. (Cheeseman Day, 2019)

Figure 4

Percent of uninsured people under 65 by Medicaid expansion status



Source: (Cheeseman Day, 2019)

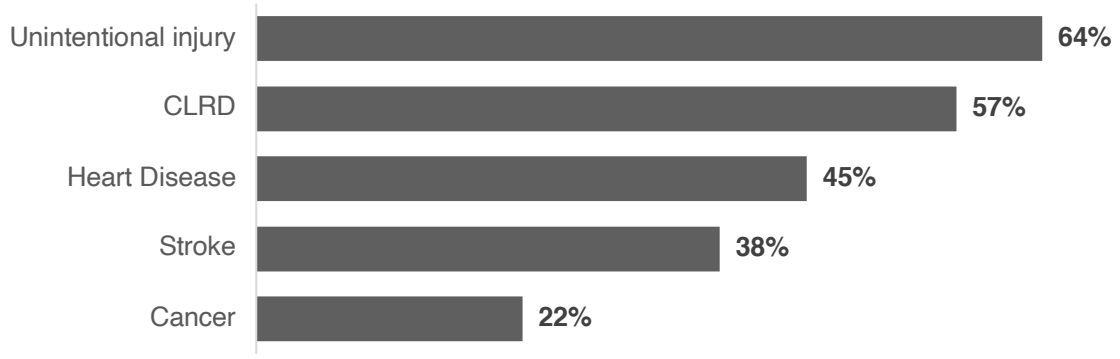
Potentially Preventable Deaths

According to the Centers for Disease Control and Prevention, the five leading causes of death in the U.S. are stroke, cancer, heart disease, unintentional injuries, and chronic lower respiratory disease (CLRD). Though not exclusively the case, many of these deaths are considered potentially excess, or preventable, deaths. In an analysis of data from 2010 to 2017, Garcia et al. (2019) found a higher percentage potentially excess deaths in rural areas compared to metropolitan areas. Table 3 shows the percent of deaths from the leading causes of deaths

that were potentially preventable for people in rural areas under 80 years old (Garcia et al., 2019).

Figure 5

Percent of potentially excess death among persons aged < 80 years from the five leading causes of death



Source: (Garcia et al., 2019)

Many of these potentially preventative deaths can be contributed to lifestyle choices and habits, such as tobacco use and obesity. Garcia et al. (2017) found smoking and tobacco use is more prevalent in rural areas than urban. Tobacco use causes an increased risk of heart disease, stroke and CLRD, the top three causes of potentially excess deaths after unintentional injury. Self-reported obesity rates are also higher in rural areas; obesity increases a person's risk of developing hypertension and diabetes, which contribute to heart disease and stroke. (Garcia et al., 2017). In 2014, these causes contributed to a total of 71,000 potentially preventable deaths in rural areas. Table 3 shows the number of potentially preventable deaths for each of the five leading causes (Centers for Disease Control and Prevention, 2019).

Table 3

Number of deaths among rural American that were potentially preventable, 2014

Cause of Death	Potentially Preventable Deaths
Heart Disease	25,000
Cancer	19,000
Unintentional Injuries	12,000
CLRD*	11,000
Stroke	4,000
Total	71,000

*Chronic lower respiratory disease
Source: (Centers for Disease Control and Prevention, 2019)

Racial and Ethnic Disparities

Additional barriers exist for racial/ethnic minorities in rural areas. James et al. (2017) found that while the median age of rural residents is middle-age, minorities tend to be younger than non-Hispanic whites (39.7 percent 18-44 years). Racial minorities also make less, with 66 percent having an annual household income of less than $50,000. These residents were more likely to report their health as fair or poor and had higher rates of self-report obesity. Racial and ethnic minorities were also less likely to say they had a personal health care provider or have the ability to visit a doctor due to the financial burden. Table 4 details selected results of the survey by racial or ethnic group (James et al., 2017).

Table 4

Percent of adults 18 and older living in rural areas

	Black	Hispanic	Asian or NHOPI*	AI/AN**	White
Health status: fair or poor	28.8	28.4	10.4	28.9	18.5
Could not see a doctor in the past 12 months because of cost	24.5	23.1	17.2	19.1	15.0
Obesity***	45.9	35.5	15.5	38.5	32.0
No leisure-time physical activity in the past month	38.2	35.4	27.6	29.8	27.7
Current cigarette smoker	23.2	17.0	10.9	36.7	24.7

* native Hawaiian/other Pacific Islander
**American Indian/Alaska Native
***BMI greater or equal to 30kg/m2
Source: (James et al., 2017)

Disparities in Women's Health

Women in rural areas consistently fall behind in both women's health and maternal care. The American College of Obstetricians and Gynecologists (ACOG) (2014) found that women living in rural counties have higher rates of self-reported poor or fair health, suicide, smoking, obesity, cervical cancer, and unintentional injury, including motor vehicle injuries. Nearly a fifth (18.6 percent) of women said they put off going to the doctor due to cost, with 23.1 percent of women having no health care coverage. Rural women were also less like to receive preventative screenings for breast and cervical cancers than urban women. Maternal and

prenatal care rates were also lower. Rural women were less likely to attend prenatal care appointments during the first-trimester of pregnancy and more likely to require hospitalization for pregnancy complications. (American College of Obstetricians and Gynecologists, 2014).

Distance is also a barrier for many rural women. According to ACOG (2014), nearly half (49 percent) of all U.S. counties lacked an OB/GYN, impacting 10.1 million women. Thirty-one percent of rural women reported having to travel more than 100 miles for abortion services. (American College of Obstetricians and Gynecologists, 2014).

Providers in these areas must also adapt to the needs of rural women. A survey of OB/GYN practitioners by Fialkow et al. (2017) found that doctors in the Pacific Northwest (Washington, Oregon, Montana, Idaho, Wyoming, and Alaska) were more likely to do house calls (14.1 percent) and provide both OB and GYN services (39.4 percent). Practices also said they would be willing to hire non-MD providers of women's health care (80.6 percent) to extend services to rural women (Fialkow et al., 2017).

Structural Barriers to Access

Distance to Doctors and Hospitals

A contributing factor to healthcare disparities can be attributed to the physical distance to doctors and hospitals. Garcia et al. (2017) found that in addition to small numbers of health care providers, specialists and critical care units, residents in rural counties experience longer travel times for services and have limited public and subsidized transportation options, essential to particularly low-income residents. This increased distance also impacts reaction times for emergency medical service providers and ambulator transport time to treat for things like injury, overdoes and motor vehicle accidents (Garcia et al., 2017). A study by Lam et al. (2018) found that Americans living in rural areas live an average of 10.5 miles from the nearest hospital, with an average travel time of six minutes. Table 5 shows the average drive time to the nearest hospital by community type (Lam et al., 2018). Douthit et al. (2015) found this

increased distance is also associated with lower vaccination rates, particularly influenza, and selecting radical surgery over radiotherapy for breast cancer treatment (Douthit et al., 2015).

Table 5

Average Minutes of Car Travel Time to Nearest Hospital by Community Type

Community Type	All respondents	Below the 25th percentile	Above the 75th percentile
Rural	5.8	17.0	34.0
Suburban	5.2	11.9	21.0
Urban	4.5	10.4	18.7

Source: (Lam et al., 2018)

Health Literacy & Internet Access

With barriers to preventative and primary care, rural residents also face barriers to evidence-based health information. Limited health literacy has been associated with misunderstanding prescription instructions, nutrition labels, increase in preventable hospital visits and even mortality (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010). A study by Chen et al. (2019) found that higher levels of access to, and knowledge of health information is associated with lower levels of smoking and alcohol consumption, higher levels of exercise, consistent checkups and better self-rated health status. Rural Americans had lower rates of health literacy and reported limited access to information from primary care providers, dentists, federal agencies, scientists, health magazines and specialists. This correlates to infrastructure limitations to accessing the Internet. (Chen et al., 2019). According to the 2017 ACS, 72.4 percent of rural households have broadband

Internet, compared to 78.1 percent of all American, and 83.5 have a computer in their household (87.2 percent of U.S) (U.S. Census Bureau, 2017c). The study by Chen et al. suggests that the more access rural residents have to sound and accurate information online, the more likely they to be health literate (Chen et al., 2019).

Evaluating Solutions and Opportunities

It is clear health care disparities exist for rural residents in the United States. While many disparities involve human behavior, lifestyle, and systematic shortfalls, this report will evaluate two areas of health care which could benefit from interventions funded philanthropically: distance to health care services and health literacy.

A method of problem solving growing in popularity in the worlds of business and nonprofit work is the design thinking model. For the purposes of this report, we will use the design thinking model to determine recommendations for interventions and philanthropic giving. First, we will explore the model and its use in the area of health care. Then we will specify interventions and opportunities for giving to positively impact rural healthcare access.

The Design Thinking Model

Designers frequently solve problems in which only the desired result, value, or goal are known and the means is unknown. Design professionals are faced with similar paradoxes of open, complex problems of business and organizations. Dorst (2011) suggests that the key design principles of working backwards from a specific goal, developing and testing solutions or actions, and continuing evaluation of decisions can help bring to light new perspectives on logical problems solving in areas of business and society (Dorst, 2011). Using this model, we can think creatively to impact barriers to healthcare services for rural Americans.

Background

According to Dorst (2011), this method of problem solving was first developed by architect Peter Rowe in his book, *Design Thinking,* published in 1987, but has since been expanded beyond architecture and design (Dorst, 2011). Brown and Wyatt (2010) define design

thinking as problem solving which "focuses on developing solutions, products, systems, etc. that are empathetic, intuitive, and human-centered." Spearheaded by David Kelley and his firm IDEO, design thinking has been used in the areas of public health, business, policy and beyond (Brown & Wyatt, 2010). Pressman (2019) suggests that design thinking often "transcends conventional or obvious solutions" and "structured in a loop," with an increase use in various contexts in recent years (Pressman, 2019).

Design Thinking Framework: Three Views

Though there is no singular definition of design thinking, there are three common views used to illustrate this problem-solving framework.

Three Spaces. According to Brown and Wyatt (2010), design thinking is "best thought of as a system of overlapping spaces…: inspiration, ideation, and implementation." They suggest a "non-linear process" in which one explores each space, while continuing to use knowledge learned in later spaces to refine solutions (Brown & Wyatt, 2010).

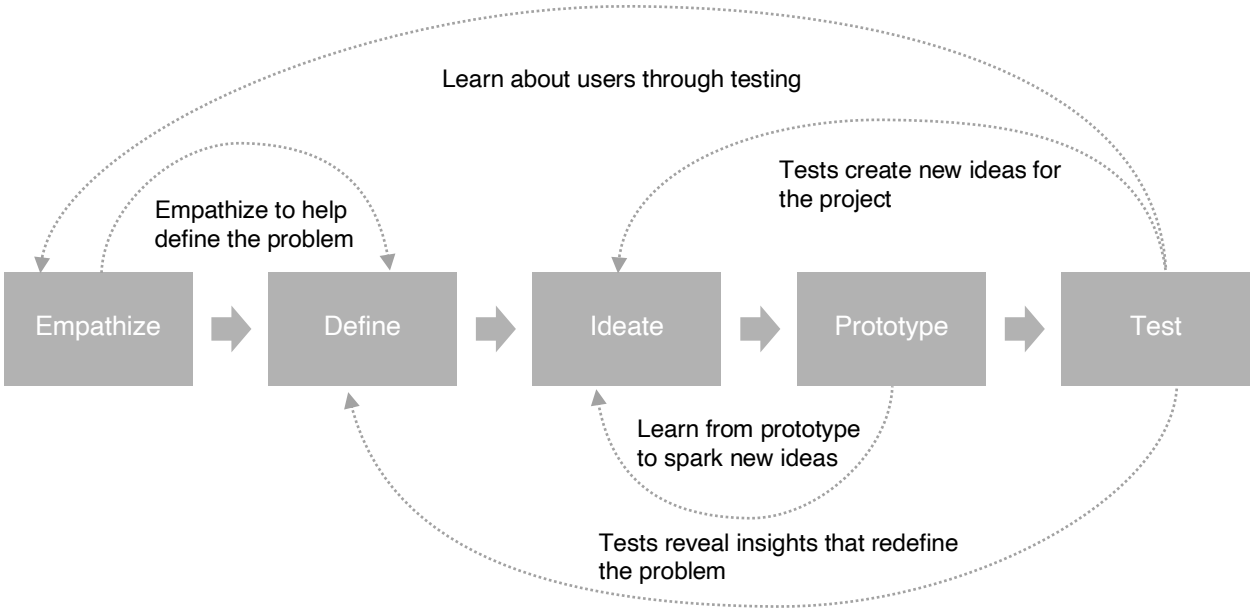
The typical starting point is the inspiration space. In this space, one attempts to define the problem through empathy, observation, and human interaction of those affected by the problem. Essential to this step is asking the people what would help them rather than assuming what they need. This is the information gathering space in this process. Once the problem is defined, this information is used to create ideas. One takes what was learned in the first space and brainstorm solutions with a diverse set of people from multiple disciplines. Finally, ideas are transformed into prototypes, solutions, and pilot projects. In this space of implementation, ideas are tested in real-world scenarios and anything learned loops back to refine solutions or redefine the problem (Brown & Wyatt, 2010).

The Five Stages. Dam and Teo (2020) take this general concept of the three spaces and expands it into more concrete process, in which problems are explored within five stages. According to authors, "the main benefits of the five-stage model is the way in which knowledge acquired at the later stages can feedback to earlier stages. Information is continually used both

to inform the understanding of the problem and solution spaces, and to redefine the problem(s)." This process is illustrated in Figure 6. While more concrete, this process lacks specifics on long-term evaluation in a real-world context, as suggested by Brown and Wyatt (2010) and Dorst (2011) (Dam & Teo, 2020).

Figure 6

Design Thinking: A Non-Linear Process



Source: (Dam & Teo, 2020)

Building Blocks. Rather than a linear view, design thinking can take the shape of what Pressman (2019) in his book *Design Thinking: A Guide to Creative Problem Solving for Everyone* calls "building blocks." This process can be adapted for the specific context of the problem and be molded and shaped to bring about the best outcomes and ideation. It is also "disruptive" to the status quo in its thinking, providing opportunity to discover new and innovative ideas. These building blocks include: information gathering, problem analysis, idea generation, synthesis and modeling, and critical evaluation (Pressman, 2019).

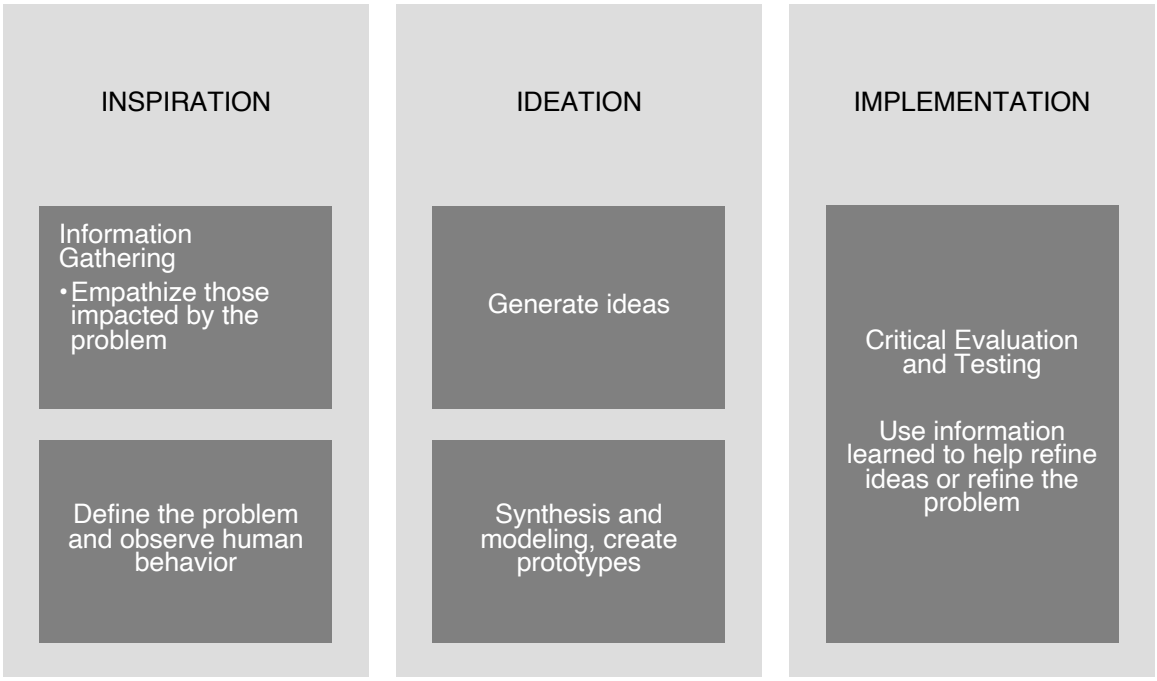
Using the Design Thinking Model

Using the principles of design thinking, we can evaluate and create recommendations for positively impacting rural healthcare access. This model has already been implemented in many projects to solve healthcare disparities. Pressman (2019), Roberts et al. (2016), and Valentine et al.(2016) give examples of where this model has been successful in the broader problem of health care access disparities. Examples of where this model of thinking has been used to solve healthcare disparities of access. Valentine et al. (2017) describes several case studies in which health care systems in government, public health organizations and others have implemented the design thinking model to address disparities in care. (Valentine et al., 2017).

For the purposes of this report, we have already explored the first space in terms of rural healthcare access: inspiration. Previously, we extensively defined the problem of rural health care access and the disparities that exist for rural residents. By combining the three views described, what follows is the second and third spaces: ideation and implementation. We will explore and brainstorm solutions to the problem of rural health care access and then specify which interventions would be philanthropically advantageous to implement. Figure 7 shows how Brown & Wyatt's (2010) Three Spaces and Pressman's (2019) building blocks can be combined with procedural support from Dam & Teo's (2020) five-step process.

Figure 7

The Design Thinking Process



Source: (Brown & Wyatt, 2010; Dam & Teo, 2020; Pressman, 2019)

Creating an Ideal Healthcare System for Rural Americans

The goal of this report is to make recommendations for philanthropic interventions that can positively impact residents in rural areas. This is motivated by the idea that all people, regardless of their physical location or means, have the right to live healthy and prosperous lives. One way of insuring this is creating an ideal health system. The Centers for Medicare and Medicaid Services (2019) describes an ideal health system as one that is: accessible, affordable, risk-appropriate, high quality, patient centered, innovative, coordinated and equitable (Centers for Medicare and Medicaid Services, 2019).

For the purposes of this report, we will focus on two disparities areas: distance and health literacy. These areas are recommended as their impact can be measured and evaluated, structural changes can be made (opposed to systematic or social changes), and interventions are

well documented. As we have previously defined the problems facing rural residents in each of these areas, we can proceed to the second space of the design thinking model: ideation. In this space, we will select existing interventions before proceeding to the implementation, or recommendation phase.

Distance

Based on the impact of distance on health care access in rural areas, the following is a list of possible interventions and opportunities:

1. Increase access and implementation telehealth services between patients and healthcare professionals (Alonso et al., 2019; Douthit et al., 2015; NORC Walsh Center for Rural Health Analysis, 2019a; *Telepsychology-Service Delivery for Depressed Elderly Veterans*, 2019)
2. To decrease the use of emergency room visits as a replacement for primary and preventative care for women and children, support the creation of community health centers (DeVoe et al., 2009; Douthit et al., 2015)
3. Create or bolster public or subsidized transportation options in rural communities to diminish the impact of distance for those without their own transportation (Arcury et al., 2005; NORC Walsh Center for Rural Health Analysis, 2019b)
4. Create or support mobile health vehicle programs that bring services to areas in need, particularly communities of racial and ethnic minorities (*Mobile Women's Health Unit*, 2019)

Health Literacy

The following is a list of potential solutions to decrease disparities of health literacy:

1. Increase high-speed and broadband Internet infrastructure (Douthit et al., 2015)
2. Increase update-to-date resources in local libraries concerning health and wellness
3. Public health fairs and events providing services and information

4. Partnerships with educational organizations, schools, universities, community colleges and childcare facilities to bolster health education in schools

Recommendations

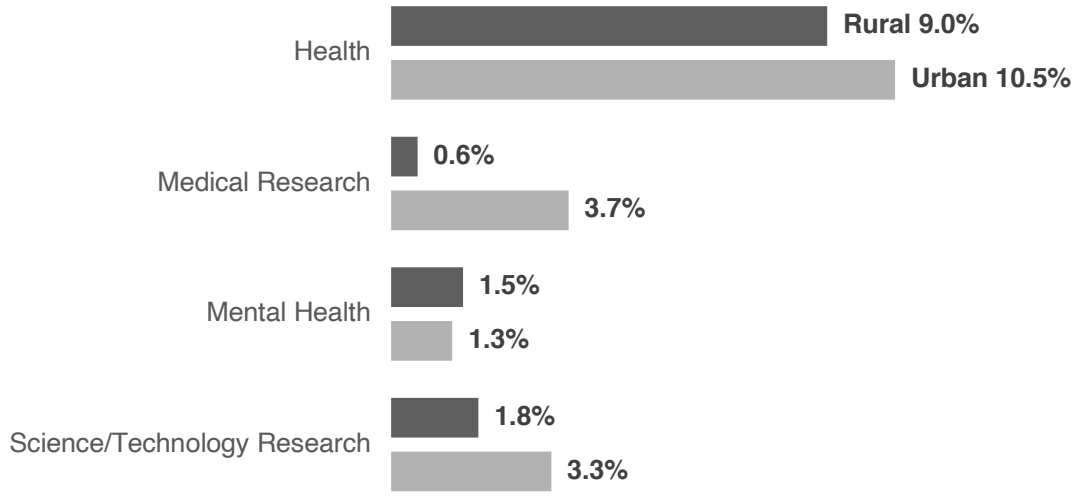
The final step in the design thinking model is the implementation space. This space includes the finalization of solution and evaluation of those solutions. Once implemented, evaluating solutions in the real-world can help redefine the problem or refine solutions to be more impactful. For the purpose of this report, recommendations for implementation is divided into two sections. First, we will explore the state of philanthropy in rural areas in the United States. Then, we will select interventions discovered in the previous section and make financial recommendations for giving.

State of Rural Philanthropy

As we have shown, disparities exist for rural Americans in the area of health care and health care access. Additionally, disparities exist in philanthropy as well. A study by Pender (2015) found in a sample of large foundations, only 5.5 percent of the real value of domestic grants by large foundations went to rural-based organizations. In contrast, in 2009 it was found that 7.0 percent of the real value of grants by smaller organizations when to rural organizations. The study suggests there is typically "an urban focus in large-foundation grantmaking." The study found that between 2005 and 2010, the mean real value of grants from foundations was $124/person ($88/person in nonmetro areas and $192/person in metro counties). Figure 8 shows giving by large foundations in selected areas for rural and urban organizations (Pender, 2015).

Figure 8

Percent of real grant value by large foundations grants to domestic rural and urban-based organizations, 2005 – 2010



Source: (Pender, 2015)

Although 19% of the U.S. population lives in rural areas, this population receives less foundation funding overall and in specific purpose areas. (Pender, 2015) This speaks to a neglected area of need philanthropically and a market somewhat untapped by foundations by large and small.

Swiersewski (2007) suggests several obstacles that may "deter foundations from engaging in more aggressive rural grantmaking." These obstacles include misperceptions of rural populations (they don't need help); the return on investment is too low to justify the work; foundations, particularly large-scale and well-funded, are located within urban areas; and the differences in infrastructure, forcing foundations to creatively manage and engage with local, rural populations (Swierzewski, 2007).

Philanthropic Opportunities by Disparity Area

Using information gathered while defining rural healthcare access disparities, brainstorming solutions based on previous interventions, and examining the state of rural philanthropy generally, the following are recommendations for philanthropic investment to positively impact rural health outcomes.

Fund Further Research

One theme that was made clear while researching disparities in rural health as the lack of extensive data concerning rural health access. Just as philanthropic giving seems sidelined by a disinterest in rural issues, data can be difficult to obtain, particularly survey data of rural residents. While federally funded surveys such as the Behavioral Risk Factor Surveillance System (BRFSS) survey conducted by the CDC gives insight into rural health, other surveys are sparse, if nonexistent. The first recommendation, and priority of this report, is to invest in research to glean more insight into health-related issues facing rural Americans, particularly organizations and higher education within rural counties.

The following is a list of recommended areas of research:

1. Rural health care access on a global scale
2. Disparities in health care access for people of color, American Indians, and the poor in both urban and rural areas.
3. Health care systems and operations management reform and innovation; federal health care policy reform to address inequities in private and for-profit health care facilities and health insurance providers.
4. Expansion of public health coverage or services, i.e. universal health care managed by the federal government, universal Medicare expansion in all 50 states, bolstered state-level departments of health.

Interventions

In addition to research, the following interventions are recommended to begin closing the access gap in rural communities.

Telehealth Programs. One way to decrease the impact of physical distance on healthcare in rural areas is to establish and/or support alternative methods of care, including telehealth program. Telehealth program allow patients to access health care professionals across long distances using everything from phone calls to smartphone apps to video conference calls. According to the Rural Health Information Hub, at-risk populations such as people with disabilities, minorities, older adults, and those with limited English can highly benefit from telehealth programs (*Specific Rural Populations That May Benefit from Telehealth - RHIhub Toolkit*, n.d.). Supporting telehealth programs can provide an alternative path for those in rural areas to receive primary care, particularly at-risk populations, and those without transportation.

Education Initiatives to Increase Health Literacy. Health education and literacy can go well beyond traditional centers of learning, such as public schools. To raise levels of health literacy, and consequently health outcomes, investment is recommended. Temple (2017) gives a few examples of impactful health literacy interventions. We recommend investment in rural journalism and library services. Newspapers provide a hyper-local platform for health information and can help bridge the online gap for people in rural areas. In the same way, support local libraries provides other means to access health information (Temple, 2017).

Access to high-speed Internet. At the foundation of both of these interventions is the access to high-speed or broadband Internet. While a majority of Americans in rural areas have access to high-speed Internet, just under a quarter do not (U.S. Census Bureau, 2017c). Further, Parker et al. (2018) found that 24 percent of rural residents said lack of high-speed Internet was a major problem in their communities. Perhaps an infrastructure problem is beyond the scope of these recommendations, continued effort in this area should be considered.

Consistent and periodic evaluation

A key element of the design thinking model is the last space or step: implementation and evaluation (Dorst, 2011; Pressman, 2019). Once foundation spending has been distributed and programs in place, it is essential to reevaluate and look critically at outcomes, impact and effectiveness periodically overtime.

Budget Recommendations

Table 6 details financial investment in the previous implementation areas.

Table 6

Percent of total giving

Further Research	50%
Telehealth Programs	25%
Education Initiatives	25%

References

Alonso, W., Crouch, E., & Thorell, N. (2019). *Telehealth in Rural America*. National Rural Health Association. https://www.ruralhealthweb.org/NRHA/media/Emerge_NRHA/Advocacy/Policy%20documents/2019-NRHA-Policy-Document-Telehealth-In-Rural-America.pdf

American College of Obstetricians and Gynecologists. (2014). Committee Opinion No. 586: Health Disparities in Rural Women. *Obstetrics & Gynecology*, *123*(2, PART 1), 384–388. https://doi.org/10.1097/01.AOG.0000443278.06393.d6

Arcury, T. A., Preisser, J. S., Gesler, W. M., & Powers, J. M. (2005). Access to Transportation and Health Care Utilization in a Rural Region. *The Journal of Rural Health*, *21*(1), 31–38. https://doi.org/10.1111/j.1748-0361.2005.tb00059.x

Ashrafzadeh, S. (2017, March 1). *Medical deserts in America: Why we need to advocate for rural healthcare*. Harvard Global Health Institute. https://globalhealth.harvard.edu/blog/medical-deserts-america-why-we-need-advocate-rural-healthcare

Brown, T., & Wyatt, J. (2010, Winter). Design Thinking for Social Innovation. *Stanford Social Innovation Review*, 29–35.

Centers for Disease Control and Prevention. (2019, November 7). *Leading Causes of Death in Rural America*. Centers for Disease Control and Prevention. https://www.cdc.gov/ruralhealth/cause-of-death.html

Centers for Medicare and Medicaid Services. (2019). *Improving Access to Maternal Health Care in Rural Communities: An Issue Brief*. https://www.cms.gov/About-CMS/Agency-Information/OMH/equity-initiatives/rural-health/09032019-Maternal-Health-Care-in-Rural-Communities.pdf

Cheeseman Day, J. (2019, April 9). *Rates of Uninsured Fall in Rural Counties, Remain Higher than Urban Counties*. U.S. Census Bureau. https://www.census.gov/library/stories/2019/04/health-insurance-rural-america.html

Chen, X., Orom, H., Hay, J. L., Waters, E. A., Schofield, E., Li, Y., & Kiviniemi, M. T. (2019). Differences in Rural and Urban Health Information Access and Use: Rural-Urban Health Information Access and Use. *The Journal of Rural Health*, *35*(3), 405–417. https://doi.org/10.1111/jrh.12335

Dam, R. F., & Teo, Y. S. (2020, March 7). *5 Stages in the Design Thinking Process*. The Interaction Design Foundation. https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process

DeVoe, J. E., Krois, L., & Stenger, R. (2009). Do Children in Rural Areas Still Have Different Access to Health Care? Results from a Statewide Survey of Oregon's Food Stamp Population. *The Journal of Rural Health*, *25*(1), 1–7. https://doi.org/10.1111/j.1748-0361.2009.00192.x

Dorst, K. (2011). The core of 'design thinking' and its application. *Design Studies*, *32*(6), 521–532. https://doi.org/10.1016/j.destud.2011.07.006

Douthit, N., Kiv, S., Dwolatzky, T., & Biswas, S. (2015). Exposing some important barriers to health care access in the rural USA. *Public Health*, *129*(6), 611–620. https://doi.org/10.1016/j.puhe.2015.04.001

Fialkow, M. F., Snead, C. M., & Schulkin, J. (2017). New Partner Recruitment to Rural Versus Urban Ob-Gyn Practices: A Survey of Practicing Ob-Gyns. *Health Services Research and Managerial Epidemiology*. https://doi.org/10.1177/2333392817723981

Garcia, M. C., Faul, M., Massetti, G., Thomas, C., Hong, Y., Bauer, U., & Lademarco, M. (2017). Reducing Potentially Excess Deaths from the Five Leading Causes of Death in the Rural United States. *Morbidity and Mortality Weekly Report*, *66*(2), 1–7. https://doi.org/10.15585/mmwr.ss6602a1

Garcia, M. C., Rossen, L. M., Bastian, B., Faul, M., Dowling, N., Thomas, C., Schieb, L., Hong, Y., Yoon, P. W., & Iademarco, M. F. (2019). Potentially Excess Deaths from the Five Leading Causes of Death in Metropolitan and Nonmetropolitan Counties—United States, 2010–2017. *MMWR. Surveillance Summaries*, *68*. https://doi.org/10.15585/mmwr.ss6810a1

Health Professional Shortage Areas (HPSAs). (2019, May). [Text]. Bureau of Health Workforce. https://bhw.hrsa.gov/shortage-designation/hpsas

James, C. V., Moonesinghe, R., Wilson-Frederick, S. M., Hall, J. E., Penman-Aguilar, A., & Bouye, K. (2017). Racial/Ethnic Health Disparities Among Rural Adults—United States, 2012–2015. *MMWR. Surveillance Summaries*, *66*. https://doi.org/10.15585/mmwr.ss6623a1

Lam, O., Broderick, B., & Toor, S. (2018, December 12). How far Americans live from the closest hospital differs by community type. *Pew Research Center*. https://www.pewresearch.org/fact-tank/2018/12/12/how-far-americans-live-from-the-closest-hospital-differs-by-community-type/

Mobile Women's Health Unit. (2019, July 26). Rural Health Information Hub. https://www.ruralhealthinfo.org/project-examples/494

NORC Walsh Center for Rural Health Analysis. (2019a, May 21). *Rural Teleheath Toolkit*. Rural Health Information Hub. https://www.ruralhealthinfo.org/toolkits/telehealth

NORC Walsh Center for Rural Health Analysis. (2019b, June 4). *Rural Transportation Toolkit*. Rural Health Information Hub. https://www.ruralhealthinfo.org/toolkits/transportation

Parker, K., Horowitz, J., Brown, A., Fry, R., Cohn, D., & Igielnik, R. (2018). *What Unites and Divides Urban, Suburban and Rural Communities*. Pew Research Center. https://www.pewsocialtrends.org/2018/05/22/what-unites-and-divides-urban-suburban-and-rural-communities/

Pender, J. L. (2015). *Foundation Grants to Rural Areas from 2005 to 2010: Trends and Patterns* (Economic Research Bulletin EIB-141). U.S. Department of Agriculture, Economic Research Service.

Pressman, A. (2019). *Design thinking: A guide to creative problem solving for everyone*. Routledge.

Ratcliffe, M., Burd, C., Holder, K., & Fields, A. (2016). *Defining Rural at the U.S. Census Bureau* (p. 8) [American Community Survey and Geography Brief]. U.S. Census Bureau.

Rural America, a Story Map. (2010). [Website]. United States Census Bureau. https://gis-portal.data.census.gov/arcgis/apps/MapSeries/index.html?appid=7a41374f6b03456e9d138cb014711e01

Specific Rural Populations that May Benefit from Telehealth—RHIhub Toolkit. (n.d.). Retrieved May 10, 2020, from https://www.ruralhealthinfo.org/toolkits/telehealth/1/benefits-for-specific-populations

Swierzewski, R. (2007). *Rural Philanthropy: Building Dialogue from Within* (pp. 1–38) [Report]. National Committee for Responsive Philanthropy. https://www.ruralhealthinfo.org/topics/grantwriting

Telepsychology-Service Delivery for Depressed Elderly Veterans. (2019, December 5). Rural Health Information Hub. https://www.ruralhealthinfo.org/project-examples/941

Temple, K. M. (2017, May 3). Rural Health Literacy: Who's Delivering Health Information? *The Rural Monitor*. https://www.ruralhealthinfo.org/rural-monitor/delivering-health-information/

U.S. Census Bureau. (2017a). *ACS Demographic and Housing Estimates, 2013-2017 American Community Survey 5-Year Estimates, Table DP05*. United States Census Bureau. https://data.census.gov/cedsci/table?d=ACS%205-Year%20Estimates%20Data%20Profiles&table=DP05&tid=ACSDP5Y2017.DP05&vintage=2017&hidePreview=true&g=0100043US_0100000US_0100001US

U.S. Census Bureau. (2017b). *Selected Economic Characteristics, 2013-2017 American Community Survey 5-Year Estimates, Table DP03*. American FactFinder. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP03&prodType=table

U.S. Census Bureau. (2017c). *Selected Social Characteristics in the United States, 2013-2017 American Community Survey 5-Year Estimates, Table DP02*. American FactFinder. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP02&prodType=table

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (2010). *National Action Plan to Improve Health Literacy*. https://health.gov/our-work/health-literacy/national-action-plan-improve-health-literacy

Valentine, L., Kroll, T., Bruce, F., Lim, C., & Mountain, R. (2017). Design Thinking for Social Innovation in Health Care. *The Design Journal*, *20*(6), 755–774. https://doi.org/10.1080/14606925.2017.1372926