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*Together makes progress*



**HEALTH OUTCOMES THROUGH ANALYTICS SERIES**

Volume 2: **Social connectedness as a driver of health**

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A woman with dark curly hair, wearing a light-colored jacket, is holding a tablet and looking at it with a smile. A man in a denim jacket is standing next to her, pointing at the screen and smiling. The background is a blurred office or meeting room with other people.

# EXECUTIVE SUMMARY

# Executive summary

## The data says it all

Social connections have been shown to influence health,<sup>1</sup> so how can we use population-level data to identify the communities that could benefit the most from increased connectedness? In this volume, you'll find that population-level physical-social connectedness, both within a proximal family unit and broadly within a community, can have important implications for health outcomes.

## Social connectedness and community health are interwoven



**1. Household size and composition vary between income groups, and there is a resulting differential effect on health outcomes.**

Understanding the impact of cultural shifts, such as changing family structures, community engagement patterns, and social support networks, can assist in filling in any gaps.



**2. Partnership in the household can be a form of wealth, particularly for lower-income counties and households with children.**

Encouraging sustainable and healthy partnerships may improve community health outcomes.



**3. Developing, maintaining, and encouraging the use of ordinary and accessible physical community spaces may improve overall community health and wellness.**

### EARLY PREVENTION CAN MATTER

**Upstream opportunities are likely to have the greatest potential for improving differences in long-term health outcomes**

### ONE GROUP CANNOT SOLVE THIS ALONE

**Stakeholder involvement across industries and within a community setting can be important to developing comprehensive, innovative, relevant solutions**

### THE ISSUE IS COMPLEX, YET APPROACHABLE

**While outcomes are influenced by many overlapping factors, we can detangle the complexity and look for smaller, approachable gaps to inform action that can compound over time into meaningful long-term impact**

## Executive summary

### “Advancing optimal health outcomes for individuals, families, and communities involves more than access to care”

It is creating opportunities for everyone to fulfill their human potential in all aspects of health and well-being.



Health and well-being includes **not only clinical issues** traditionally addressed by the health care system, but also a person’s **mental, social, emotional, physical, and spiritual health.**

In order to achieve optimal health outcomes at scale, root causes of differences in health status should be considered.



Our Health Outcomes through Analytics series aims to empower communities to improve health outcomes through targeted, data-driven interventions.

A young woman with long brown hair, wearing a mustard-colored sweater, is smiling warmly at an elderly man with a white beard and grey hair, wearing a grey jacket. They are seated at a dining table with plates of food and glasses of water. The scene is set in a bright, sunlit room with large windows in the background showing greenery outside. The overall mood is warm and positive.

# HEALTH OUTCOMES THROUGH ANALYTICS SERIES OVERVIEW

## Series overview

The Deloitte Health Outcomes through Analytics series has three primary goals:

- 1. Deepen understanding of drivers of health** by putting real-world numbers behind associations
- 2. Clarify and segment analyses** in a way that makes insights and recommendations actionable for community leaders
- 3. Share knowledge broadly** with an invitation to complementary and diverse broad range of stakeholders across sectors and industries to develop and take action on solutions together

We hope these insights provoke conversation and catalyze collaborations that ultimately change future outcomes through **innovative solutions and mindsets.**

But this is only a starting point and one small step in improving health outcomes.



# Series overview

# SDOH

Drivers of Health

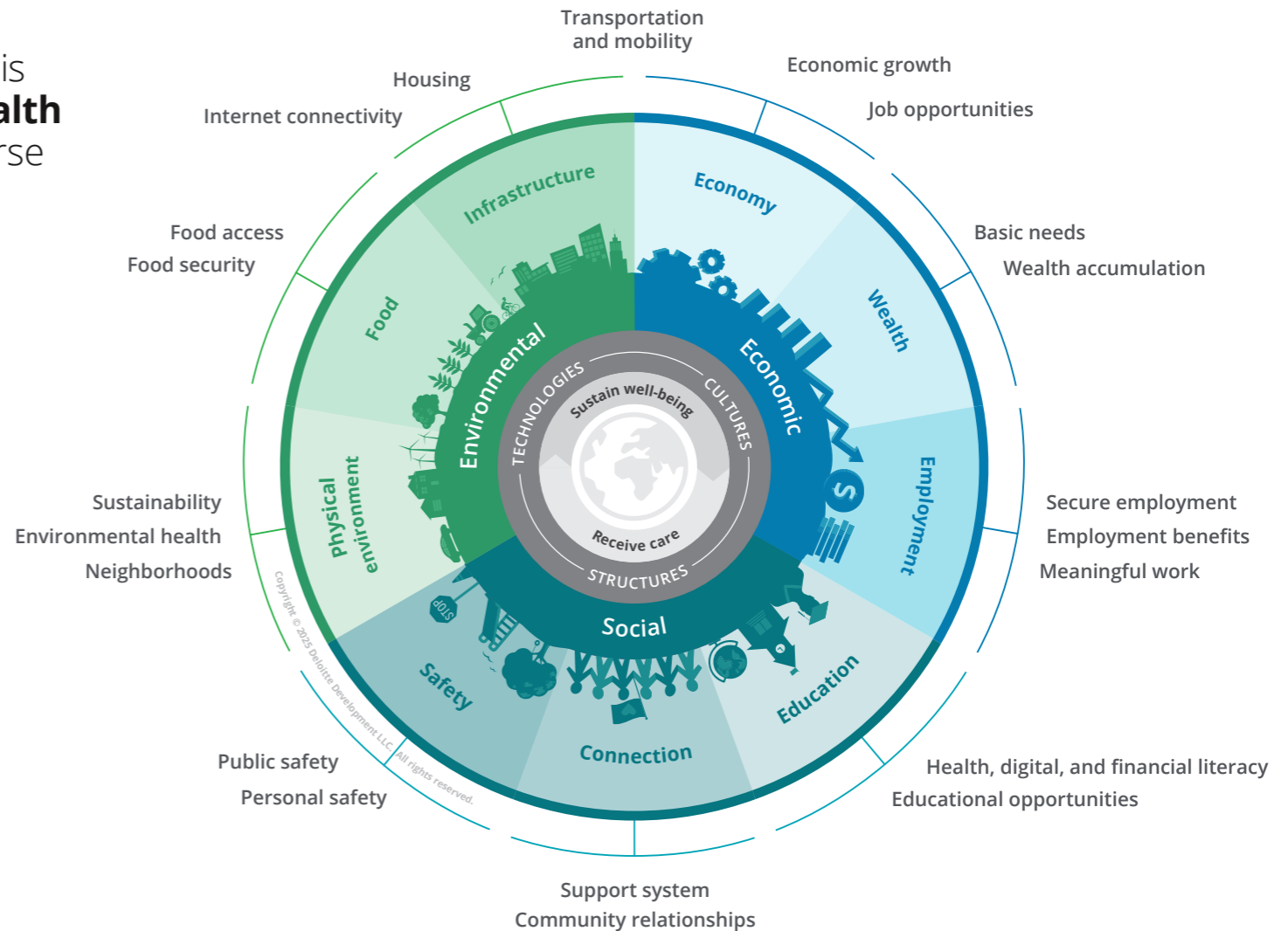
Significant differences in **upstream** drivers of health underlie differences in health outcomes.

The main feature of the Health Outcomes through Analytics series is the sequential exploration of relationships between **drivers of health** and health outcomes through the combination of various and diverse data sets.

## DEFINING DRIVERS OF HEALTH

The Drivers of Health, also known as the Social Determinants of Health, are the social, economic, and environmental factors beyond health care that can have an impact on individual and community health, well-being, and outcomes.

- **Economic:** Factors that affect the economy, such as steady employment, interest rates, policies, and governmental activities.
- **Environmental:** Impacts of exposure to pollutants, changes in weather patterns, a lack of nutritious food sources, and unstable or unsafe living conditions.
- **Social:** Obstacles to higher education and job training, lack of connection or relationships, and exposure to intentional violence.



## Series overview

There is **inherent complexity within and between the different drivers of health**. In combination with unique lived experiences, these drivers can impact individual health outcomes.

**Challenges to building a comprehensive perspective include:**

- **Data intricacies;**
- **Intersections across drivers of health; and**
- **Unique lived experiences.**

### **UNTANGLING COMPLEXITY:**

While our population-level analysis cannot determine causality, we **can** identify initial trends and formulate hypotheses to test. Additional individual data and direct community insights can help complete a more comprehensive view.

A second phase of this series and research aims **to layer in targeted analyses** and **engage communities** to validate findings and strengthen the evidence base.



## Series overview

We can work to **untangle the complexity** by identifying approachable gaps through important questions:

**CAN WE QUANTIFY THE FACTORS THAT  
CONTRIBUTE MOST TO HEALTH?**

**HOW CAN EFFORTS AND RESOURCES BE  
PRIORITIZED ACROSS COMMUNITIES AND  
POPULATIONS?**

**WHAT ACTIONS LEAD TO AND MAXIMIZE  
MEASURABLE IMPACT?**

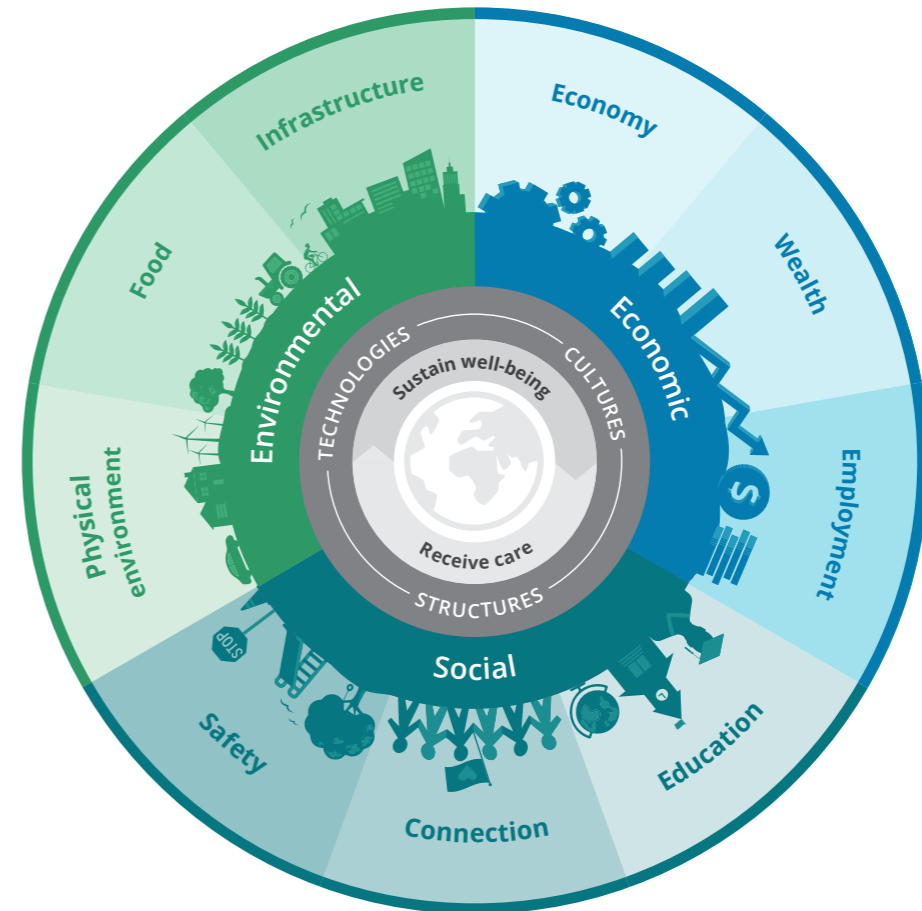


## Series overview

**Data can help us identify these approachable gaps** that lead to action and measure impact.

### DATA CAN ENABLE US TO:

- **Think differently** about where, when, and how we address health differences.
- **Expose critical gaps and opportunities** to make an impact through a more comprehensive understanding of relationships.
- **Tell stories that reveal unexpected truths** about differences in health status and outcomes.
- **Measure the impact of novel interventions** to extract the most influential drivers.
- **Draw insightful conclusions** about previously unexplored populations and community needs through aggregation and segmentation.



## Series overview

Our second volume in the series focuses on **social connections**—measured at the family and community levels—as a driver of health

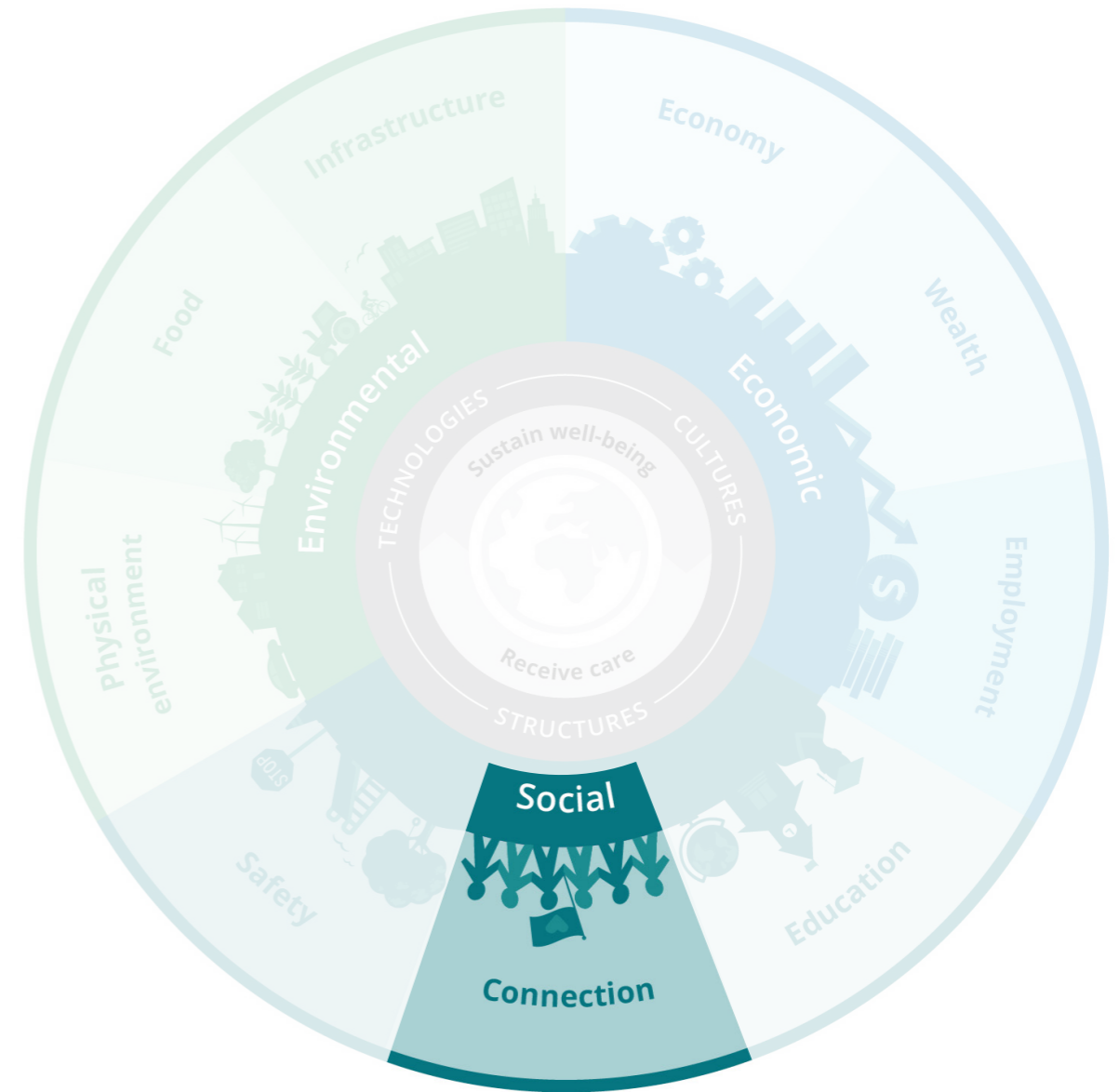
### LET'S EXPLORE:

*Does social connectedness within a community matter for health outcomes?*

*Is social connectedness a root cause of outcomes, or is there a bidirectional association?*

*Is social connectedness within a community tied to other factors?  
How can they be separated to understand the independent association with health outcomes?*

*What are some ways that health care stakeholders and local leaders lean in and promote social connectedness?*



## Series overview

We aim to **inspire conversation** across settings through compelling research, challenging questions, and ideas **for collaboration and creative problem-solving.**

*Each chapter focuses on strengthening social connection in two potential opportune settings:*

**CHAPTER 1**  
**Family structure and prevalent chronic conditions**

FOCUS ON  
**PROXIMAL SOCIAL SUPPORT**

**CHAPTER 2**  
**Community social structure and wellness**

FOCUS ON  
**COMMUNITY ENGAGEMENT**

**Early prevention** could have the greatest potential for improving outcomes and can afford each individual the best opportunity and agency for health and wellness. **Secondary and tertiary prevention** can help fill the existing gaps.

**Chapter 1**  
Family structures  
and prevalent  
chronic conditions





## In this chapter you'll find...



The **definition** of social connectedness within the context of health and wellness.



A **general overview** of family structures in the United States to establish context.



**Findings from population-level data analysis** connecting the geo-specific average family structure with the prevalence of chronic conditions in those geographies.



A **deep dive into the data** to identify which cohort's family structure may influence their health outcomes the most.



**Ideas to consider** as the conversation moves forward.



# Defining terms

Social connectedness is the degree to which people have and perceive a desired number, quality, and diversity of relationships that create a sense of belonging and being cared for, valued, and supported.<sup>2</sup>

There are three components of social connections that are important to health and influence health in different ways:

**Structure:**

The number, variety and frequency of social connections

**Function:**

The degree to which others can be relied upon for various needs

**Quality:**

The degree to which relationships and interactions with others are positive, helpful, or satisfying<sup>3</sup>

## Guiding questions

What is the relationship between household size and structure and long-term health outcomes in a community? **Can these population trends help to identify the communities that may benefit the most from supportive programs?**

How can health care organizations and community stakeholders **collaborate** to improve health outcomes?

Can community education on the importance of strong social connections induce cultural shifts that ultimately improve health outcomes?

# Social connectedness is vital

The COVID-19 pandemic seems to have brought to the attention of the general public the important role of social connectedness as a driver of health.<sup>4</sup> However, the negative impact of loneliness and social isolation, as well as the positive association of social connection on various health outcomes, has been documented in the prior literature.<sup>5</sup>

Recently, several key health leaders and organizations—including the US Surgeon General,<sup>6</sup> the World Health Organization,<sup>7</sup> and others<sup>8</sup>— have called for action to address the decline in social connectedness as a public health issue.

The 2023 *US Surgeon General's Advisory on the Healing Effects of Social Connection and Community*<sup>9</sup> report details the declining social connectedness along with the increased health risks identified in the literature.

There is also a helpful distinction in the three components of social capital, which we can utilize to identify the communities that may benefit from intervention most.

- Social connection is combination of the structure, function, and quality of the connections. While function and quality are more subjective, structure can be measured more objectively through variables like household size, marital status, community participation, etc.<sup>10</sup> In this report, we focus on household and community characteristics.



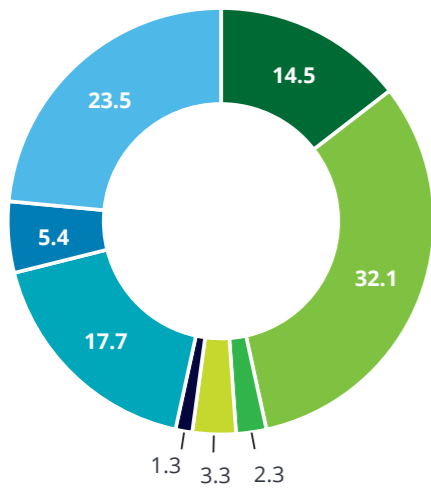
**REFRESHER:**

*The Health Outcomes through Analytics series aims to operate under the Framework for Generating Real World Evidence with Existing Resources, in which the first phase is to quantify the health outcomes at a national level and prioritize communities to address underlying factors based on data. As such, the aim of this analysis is to identify data and criteria that can help narrow the scope for a future community-oriented phase and target any potential resources in the areas with the highest impact potential.*

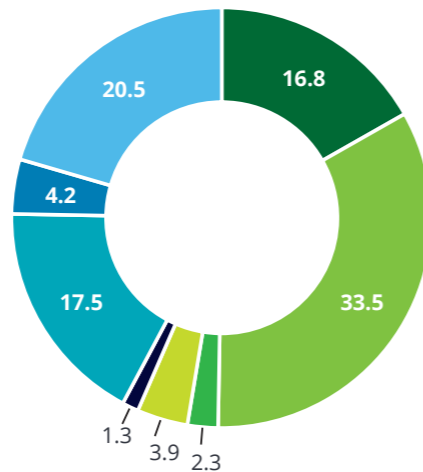
# State of affairs

Household size and composition are structural variables of social connection that can be measured. Family is also often the first and most proximal social connection. In this descriptive analysis, we look at **household structure trends across US counties, particularly as it relates to having children in the home.**

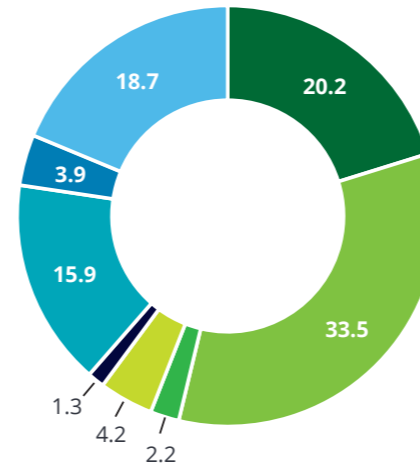
Lower third of national income



Mid third of national income



Upper third of national income



- % Married couple with children
- % Married couple no children
- % Cohabiting couple with children
- % Cohabiting couple no children
- % Total male, no partner, with children
- % Total male, no partner, no children
- % Total female, no partner, with children
- % Total female, no partner, no children

Source: [US Census Bureau](#)

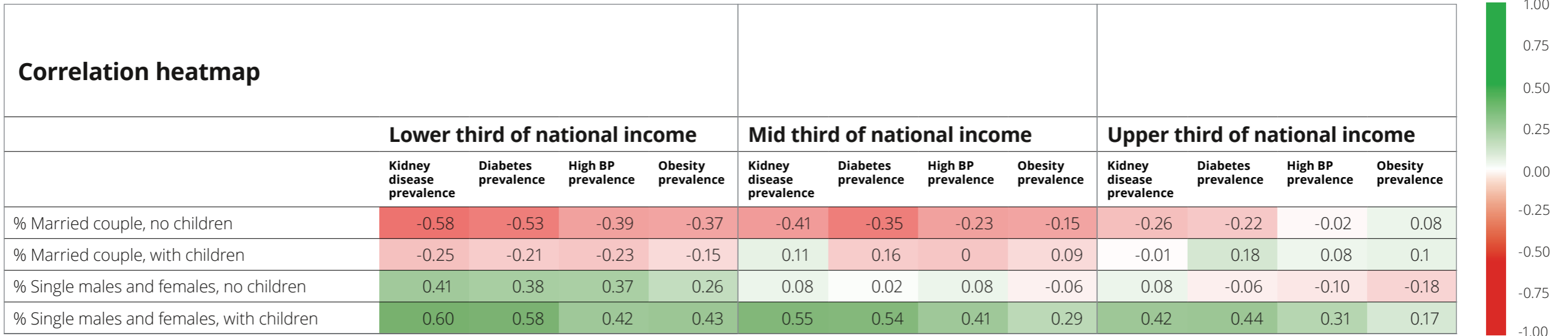
When comparing counties by income thirds, there are two key differences that stand out. First, **there are fewer individuals living without a partner or children as the income increases** (41.2% in low vs. 38% in medium vs. 34.6% in high). While living alone does not necessarily indicate loneliness, it can add an extra step to social interaction that may not be the case in households that have multiple family members.

The second difference that stands out is that of married couples with children across the income groups. While the married couples with no children is very similar across the income groups, **there is a substantial increase in the number of couples with children from 14.5% in low, to 16.8% in medium, and 20.2% in high-income counties.** This increase comes from both the decrease in general single-member households as well as the decrease in single-parent households (6.7% in low vs. 5.5% in medium vs. 5.2% in high).



# Unpacking the data

Our research uncovered a **bidirectional link between family structure and economic well-being at a county level that translates to chronic condition health outcomes for the county, particularly for the lower third of income counties.**



Source: [US Census Bureau](#)



# Unpacking the data

## Social connectedness and health can be bidirectional and cyclical<sup>11</sup>

Chronic conditions can require at-home management and can be mentally and physically burdensome. Conversely, loneliness and social isolation have been associated with poorer health outcomes through biological, psychological, and behavioral pathways.<sup>12</sup>

### Correlation heatmap

	Lower third of national income			
	Kidney disease prevalence	Diabetes prevalence	High BP prevalence	Obesity prevalence
% Married couple, no children	-0.58	-0.53	-0.39	-0.37
% Married couple, with children	-0.25	-0.21	-0.23	-0.15
% Single males and females, no children	0.41	0.38	0.37	0.26
% Single males and females, with children	0.60	0.58	0.42	0.43

Source: [US Census Bureau](#)

### HIGHLIGHTS

1. There are **baseline differences in household structure across income groups**, which may imply that income influences the relationship between household social connection and health outcomes.
2. Some correlations persist, albeit to a lesser degree, across income groups, meaning that **social connectedness in the form of household companionship may be an independent contributing factor.**
  - This is particularly true in the case of single-parent households where the additional income may help address some aspects of social support but does not appear to fully compensate for the absence of a second parent in the same household.
3. **Household partnership can be a form of wealth**, particularly in lower-income counties. Not only is there a correlation to poorer health outcomes in counties with greater unpartnered households, but there is a negative correlation to poor outcomes (i.e., better outcomes) in counties with a higher proportion of partnered households.
  - This positive effect of partnership is true in households both with and without children in lower-income counties.



What could impact look like?

**The greatest potential impact on health outcomes may be seen** by investing resources and prioritizing research for proximal physical-social connectedness in lower-income counties with **higher rates of single adult households, both with and without children.**



# Consider ways families can be empowered to **own** their health journey

There have been differential changes in partnership and marriage between different income groups in recent decades in the United States.<sup>13</sup> This has left lower-income counties with fewer partnered households. However, supportive partnership appears to be a form of wealth particularly for those lower-income counties and those with children,<sup>14</sup> with higher rates of married households associated with better health outcomes for the entire community.

## How can health care organizations lean in and help improve health outcomes?

By understanding the family dynamics of their patient population and helping to ensure that those with complex health needs have the social support they need to best manage their health, whether through proximal family connections or local community organizations that can help address gaps in support and prevent loneliness and isolation.

## How can community stakeholders address the impact of cultural shifts?

By providing education and knowledge to their community about the importance of social connectedness, particularly in the household setting, and helping to ensure there are spaces where people can come together as a community.



## Bringing it all together

### Ways to move forward from here



Household size and composition vary between income groups, and there is a resulting differential effect on health outcomes.



Partnership in the household can be a form of wealth, particularly when it comes to health outcomes.



Lower-income counties may benefit the most from interventions that improve proximal social connectedness.



Single-parent households in all income groups could benefit from increased social connectedness and support.





# Implications for action

**1 How can health care providers lean in?**  
 Providers may be able to benefit from a patient's social network and connectedness to help address their health needs. Understanding and incorporating household members into treatment plans and “prescribing” social engagement, particularly for chronic conditions, may enhance the patient’s overall wellness and outcomes.<sup>15</sup>

**2 How can health care payers support?**  
 Insurers may be able to support a member’s health journey by encouraging the use of social and community resources, either through resource education and awareness campaigns or through direct coverage of services that address social isolation, such as therapy or subsidized membership to local community spaces like recreation facilities. Employers may also encourage and subsidize social and community resources, either through employer-sponsored health plans or separately through wellness benefits.

**3 What is the role of community leaders?**  
 Cultural shifts are natural and reflect the desires of the community—for instance, changes in household composition, marriage and partnership rates, multigenerational living, and social engagement patterns.<sup>16</sup> However, it is also important to understand the impact of these cultural shifts, convey these insights to the community members, and provide resources to address any emerging gaps. Based on these findings and other literature, it is apparent that household structure may have an impact on health outcomes. Specifically, the lack of partnership, in households with and without children, is associated with poorer health outcomes, particularly in lower-income counties. Local leaders and stakeholders can foster an environment that promotes quality, supportive partnerships.<sup>17</sup> This can take on many forms, including but not limited to, education on the importance of social connectedness, resources on relationship development and health maintenance, and creation of tangible spaces for the community to physically come together and nurture these partnerships.



## The importance of measurement

It is important to measure the **effect** of interventions and share which interventions work well and can be scaled and implemented in other communities.

We approached this work with the recognition that differences in outcomes are **complex and multifactorial**. **Individual communities** are well positioned to develop and tailor programs and solutions relevant to their context. **These suggestions are meant to inspire collaboration.**

## Chapter 2

# Community participation and general health





## In this chapter you'll find...



A **definition** of community social structure.



**Findings from a population-level data analysis** connecting the geo-specific average family structure with the prevalence of chronic conditions in those geographies.



**The connection between relevant community spaces and wellness.**



**Ideas to consider** as the conversation moves forward.





## Defining terms

A report on social connectedness on a population scale cannot be complete without considering the community—in this context, defined by the physical location. Past literature shows that strong social capital, support, and infrastructure within a community are associated with better collective community health outcomes.<sup>18</sup>

In this chapter, we use community-level data from “third places” to better understand specific community needs. **Third places** refers to places outside of the home (first) and work (second) “where unrelated people relate,” thus nurturing their social connectedness.<sup>19</sup> They are ordinary places available in most communities—both public and commercial—where people can meet and participate in their community.<sup>20</sup>

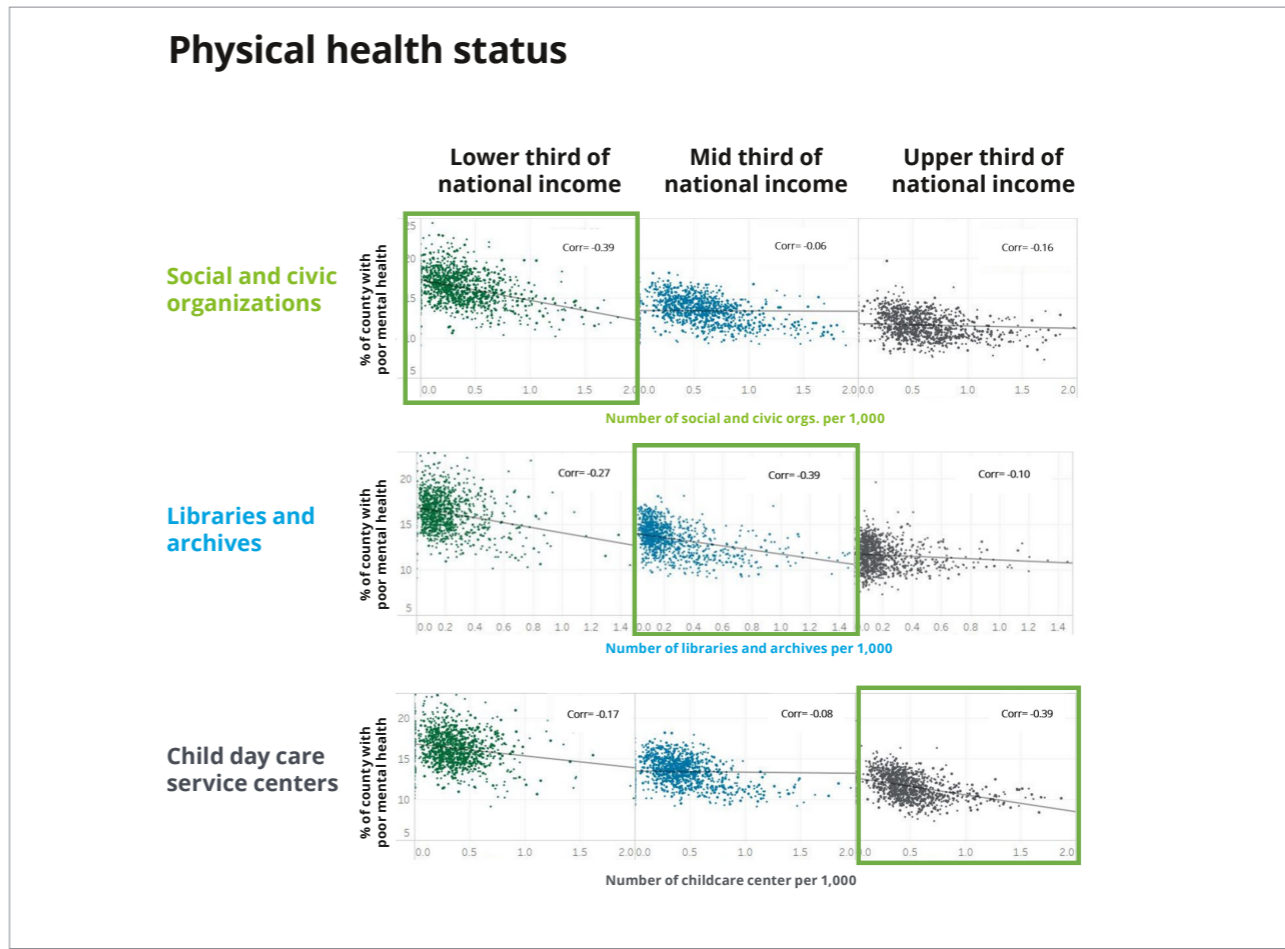
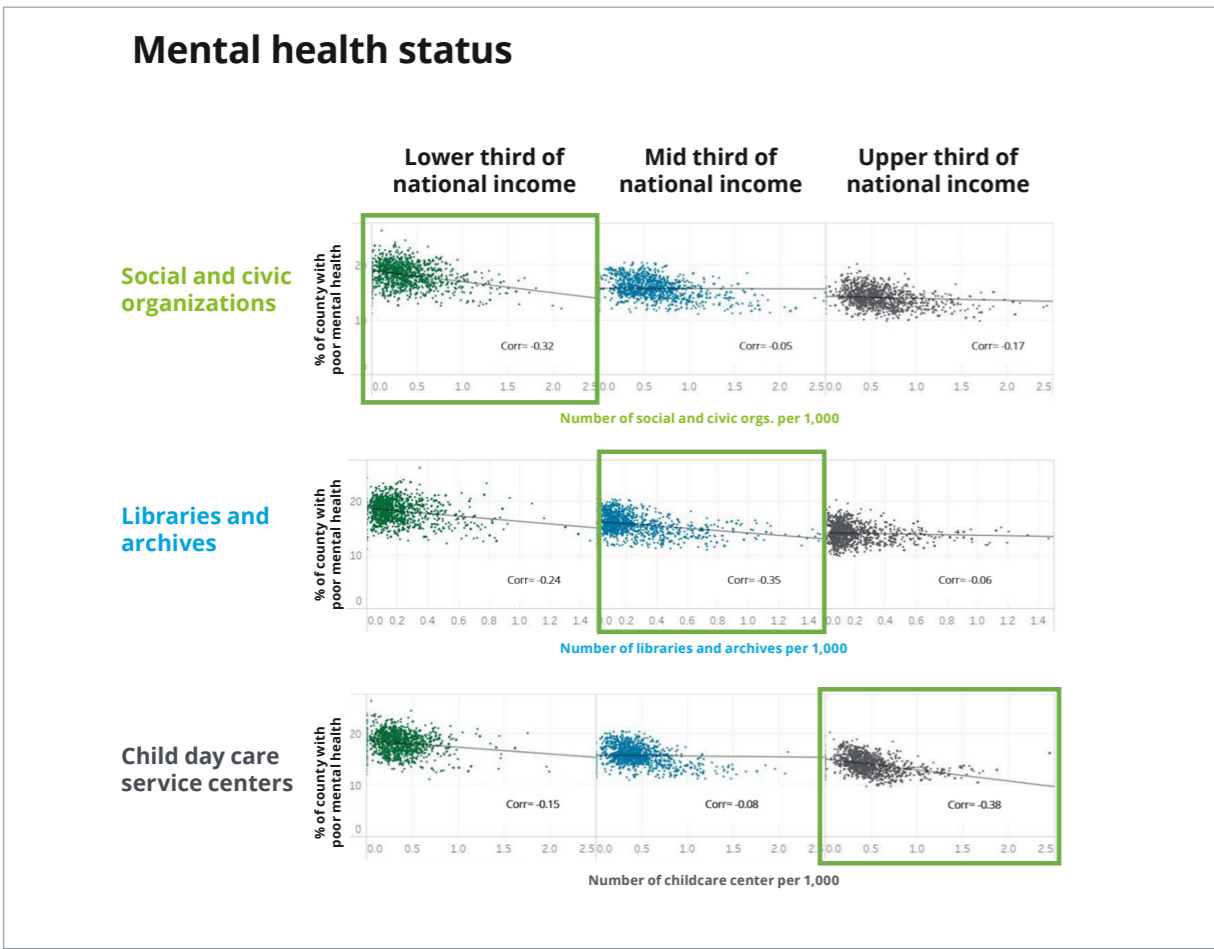
### Guiding question

Can community leaders and stakeholders focus on developing and sustaining specific infrastructure that is most relevant to the people they serve to improve health outcomes?



# Unpacking the data

Community-level third places that are associated with better mental and physical health vary between income groups.

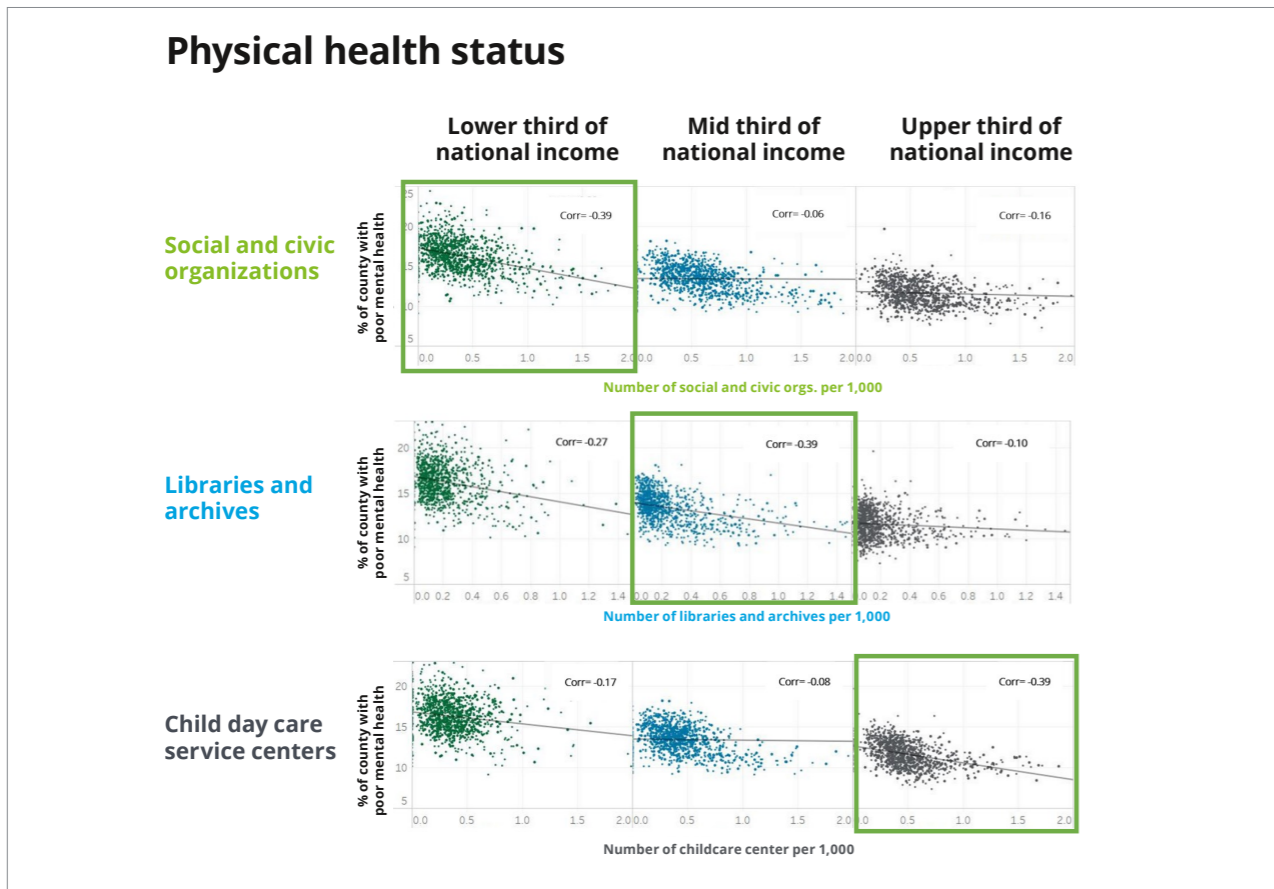


Source: [National Neighborhood Data Archive \(NaNDA\)](#); [PLACES](#)



# Unpacking the data

The availability of community centers is associated with better health outcomes, and the type of relevant third place is specific to the community served.



## HIGHLIGHTS

**Different communities have different needs** to achieve better population health, and any potential investment or intervention should be community-driven and relevant.

1. In the **lower third of income** counties, better mental and physical health was associated with an increase in **social and civic organizations**.
2. In the **middle third of income** counties, better mental and physical health was associated with an increase in **libraries and archives**.
3. In the **upper third of income** counties, better mental and physical health was associated with an increase in **child day care centers**.



# Contextualizing findings within the broader literature

## Lower-income counties:

Prior literature indicates that civic engagement in lower-income communities can empower individuals by developing civic capacity and personal efficacy, fostering solidarity through social networks, and mobilizing people to participate in health programming.<sup>21</sup> Civic engagement can also be a pathway to transfer social and human capital assets into economic opportunity, which is also associated with better health outcomes.<sup>22</sup>

## Middle-income counties:

Libraries are an important part of a community's social infrastructure, providing a free public place to not only help combat isolation and loneliness but also learn, grow, and socialize with others from all walks of life. (Check out our [\*volume on Literacy and numeracy as a driver of health\*](#).)

Libraries are also undervalued in our current digital age and, in many communities, underfunded despite high traffic.<sup>23</sup> Even in our findings, we see that while the association is strongest for the middle-income counties, the lower-income counties also show a slight association that may have been stronger if libraries—as a critical social infrastructure—were better funded.

## Upper-income counties:

Aligned with the higher income of the counties, the paid service of child care is the social infrastructure associated with better physical and mental health.

In our findings, this group of counties has a higher proportion of households with children and a higher proportion of married households. This may mean that both parents are in the workforce<sup>24</sup> and child care may be a critical social infrastructure and direct need. Additionally, with the time and financial resource intensity that can come with having children, a child care center can also be a place where families meet and forge new relationships.

## Bringing it all together

### Ways to move forward from here



Communities are bound not only by geography but by the local community resources that **foster social connectedness and combat isolation.**



**Each community is unique** in its needs for specific social infrastructure and third places.



Providing accessible physical spaces to encourage and foster civic and community engagement may **improve overall community health and wellness.**





# Implications for action

**1 How can health care providers lean in?**  
Providers may be able to tailor treatment plans based on a patient's community engagement, incorporating time spent in libraries, parks, and other public spaces and amongst friends and family. Patients can also be educated on the importance of social connectedness for their health, and clinics could potentially maintain a directory of community spaces relevant to their patient population to support any social prescribing practices.<sup>25</sup>

**2 How can health care payers support?**  
Insurers may be able to support a member's health journey by encouraging community engagement, either through resource education and awareness campaigns or through subsidized membership to local community spaces like recreation facilities. Also, employers at large, whether through employer-sponsored health plans or through independent programs, can work to foster social connections and community spaces within their networks and in the communities that they operate. This can take on many forms including organized activities for employees and their families, or dedicated groups and forums at work for employees who share interests.

**3 What can be the role of community leaders?**  
Community leaders should tailor and allocate the resources for community spaces to fit each community's unique needs. There also should be a concerted effort to not only develop and maintain common spaces for the community members, but to also encourage their use through awareness campaigns. Leaders may also be able to bridge the local health care systems and community organizations for better continuity from the social prescribing practices and the engagement of the community.

## The importance of measurement

It is important to measure the **effect** of interventions and share which interventions work well and can be scaled and implemented in other communities.

We approached this work with the recognition that differences in outcomes are **complex and multifactorial**. **Individual communities** are well positioned to develop and tailor programs and solutions relevant to their context. **These suggestions are meant to inspire collaboration.**

# Conclusion



# Social connectedness and community health are interwoven

## Key learnings

- 1. Household size and composition vary between income groups, and there is a resulting differential effect on health outcomes.** Understanding the impact of cultural shifts can assist in filling in any gaps.
- 2. Partnership in the household can be a form of wealth, particularly for lower-income counties and households with children.** Encouraging sustainable and healthy partnerships may improve community health outcomes.
- 3. Developing, maintaining, and encouraging the use of ordinary and accessible physical community spaces may improve overall community health and wellness.**



## Moving forward together

The main goals of our Health Outcomes through Analytics series are to deepen our knowledge on drivers of health, detangle and segment analyses, and share knowledge broadly in order to **inspire conversation and catalyze collaborations that ultimately address root causes.**


We also recognize that real-world **health care issues tend to be highly nuanced, complex, and multifactorial.** Thus, we need additional real-world research to keep building the evidence base, and this series is just the first step.

Furthermore, **each community is generally best positioned to develop and tailor programs and solutions relevant to their context.** Going as far upstream as possible should catalyze the greatest impact. However, an important mindset is starting somewhere, grounded in data, community engagement, and a commitment to identifying and taking action on approachable gaps within the complexity.

With some advanced planning, **evidence can be generated using existing sources**—any individual and organization can begin collecting information and measuring outcomes with openly available tools, resources, and collaborations.

Finally, the **criticality of measurement and evaluation cannot be overemphasized.** A better future relies on shared knowledge.

**We look forward to engaging, sharing data and insights, and building solutions.**



Visit the [Health Outcomes through Analytics website](#) to learn more about this series and the drivers of health.

Empowered with this knowledge,  
there is an opportunity.

***Continue the conversation with us.***

## Authors and outreach

Health Outcomes through Analytics is developed and produced by the Data and Analytics (D&A) team, **Pavan Kumar Bhoslay and Nivedha Subburaman, MDS**, led by D&A Manager **Elya Papoyan, MPH**, with the leadership support of Senior Manager **Nicole Kelm, DPT, MPH**, and Managing Director **Jay Bhatt, DO, MPH, MPA**.

Deloitte Center for Health Solutions Research Manager **Maningbe Keita Fakeye, PhD**, provides invaluable subject-matter input on methodology and interpretation.

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The project also benefits from contributions from others, including **Emily Bohac, MBA, Grace Ann Aldridge**, and **Ameya Jindia, MPH**.



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# Data and methodology

## Household structure

Household structure data including marital status and the presence of children was sourced from the US Census Bureau. Sum of percentages represented in the pie charts may not sum exactly to 100% due to rounding.

## Community spaces

Data on community spaces was sourced from the National Neighborhood Data Archive (NaNDA). All community organizations were presented as the number of establishments per 1,000 individuals to standardize.

## Population-level health outcomes

Data on chronic conditions as well as the assessment for overall physical and mental health was sourced from PLACES, a collaboration between the Centers for Disease Control and Prevention (CDC), the Robert Wood Johnson Foundation, and the CDC Foundation. PLACES provides health data for small areas across the country. All conditions are presented as the proportion of the population aged 18 and older that self-report having the condition in the county. For physical and mental health status, the variable is defined as “mental/physical health not good for 14 days or more among adults aged 18 years and older.”

## Income

Household median income is sourced from County Health Rankings, which, in turn, sources the data from the 2020 Small Area Income and Poverty Estimates. After sorting all US counties by this variable, we divided the counties into thirds. Upper third of national income is defined here as the top third of US counties with respect to income. Lower third of national income are the bottom third of US counties with respect to income. The middle third of national income is the middle third. Upper third of national income is defined as the top third of US counties with respect to median income.

## Methodology

The association between social connectedness and health was calculated in each of the combination of variables using the Pearson correlation.



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# Endnotes

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