# Health Equity Report: District of Columbia 2018



The Social & Structural Determinants of Health

Office of Health Equity, District of Columbia, Department of Health

DC HEALTH COVERNMENT OF THE DISTRICT OF COLUMBIA MURIEL BOWSER, MAYOR



#### **Government of the District of Columbia Department of Health** Office of the Director

Dear Residents and Partners,

I am pleased to share with you the inaugural Health Equity Report for the District of Columbia 2018. This report provides a baseline assessment of the social and structural determinants of health in the District, and is intended to inform and reframe the discussion of how to improve the health and wellbeing of our residents beyond the traditional limits of access to healthcare and insurance. We will use this report as the starting point for new conversations and strategic actions that aim to engage a broad spectrum of residents, neighborhoods and partners from government and the private sector that represent the whole community, all of whom are essential to achieving tangible changes in policies and practices that impact health and equity.

Evidence shows that just 20 percent of a community's health outcomes are driven by clinical care, with social and economic factors, genetics and behavior accounting for the remaining 80 percent. Although many of our residents and neighborhoods enjoy exceptional health, we know that others, particularly people of color, are being left behind. The same residents and neighborhoods experiencing disproportionately poor health outcomes also generally fare worse when measured by any of the nine key drivers of opportunities for health that frame this report: education, employment, income, housing, transportation, food environment, medical care, outdoor environment, and community safety.

It is important to note that the baseline data and outcomes presented in the report are from 2011-2015 but reflect a larger historical context going back many decades – even centuries. While we celebrate progress in the District, we know that there is still much work to do. Transformational change will require honest conversations, with sustained efforts to overcome persistent structural inequity.

Focusing on the social determinants of health is one of DC Health's five strategic priorities. Improving opportunities for health and proactively pursuing health equity is essential to achieving Mayor Bowser's vision of all District residents having a fair shot at a healthy life regardless of race, age, ethnicity, sexual orientation, gender identity, neighborhood, ZIP code, or level of education or income.

We hope this report will be a powerful tool for identifying and pursuing opportunities to improve health across the District. Fortunately, under the leadership of Mayor Bowser, agencies throughout the government are applying an equity lens to their work in the District; as a result, we are ever more effective in our collective efforts.

Sincerely,

haduanara S. Vishitt

LaQuandra S. Nesbitt, MD MPH Director

Recent Key Driver Investments					
	Sample Highlights 2015 - 2018				
EDUCATION	<ul> <li>\$1.34 billion commitment over 6 years for continued modernization of DCPS elementary, middle, and high schools.</li> <li>Reevaluating high school graduation standards, a first in DC education reform history.</li> <li>\$12.5 million in affordable, high-quality childcare to prepare our youngest learners for success.</li> <li>Introduced Kids Ride Free Program, which allows students to ride free within the District on Metrobus, the DC Circulator, and Metrorail to get to school and school-related activities.</li> <li>\$7.4 million to provide better school-based health coverage, and expand mental health</li> </ul>				
	services in DC Schools.				
EMPLOYMENT	<ul> <li>The Workforce Development Program creates new pathways to the middle class through high-paying, high-demand careers in fields such as information technology and infrastructure.</li> <li>The new Office of East of the River Coordination will elevate the work and progress begun</li> </ul>				
	by the Office of Deputy Mayor for Greater Economic Opportunity, which has helped bring unemployment rates down 29% in Ward 7 and 28% in Ward 8.				
	<ul> <li>Created the \$1.5 million Inclusive Innovation Fund to support underrepresented entrepreneurs, including people of color, women, LGBTQ residents and individuals with disabilities.</li> </ul>				
	Invigorated monitoring and enforcement of agreements to hire local DC workers.				
INCOME	<ul> <li>District's Living Wage Act increased the minimum wage to \$12.50 per hour in January 2018 and will increase it to \$14.50 per hour in 2019 and to \$15 per hour by 2020.</li> <li>Opened the DC Infrastructure Academy in Ward 8 to create a pipeline to in-demand jobs within rapidly-growing sectors, with an average hourly wage of \$48.75.</li> </ul>				
	42,300 new jobs created in DC since January 2015.				
HOUSING	• Affordable housing investments through DC's Housing Production Trust Fund totaled more than \$471 million between 2015-2018, delivering 5,800 affordable housing units since 2015 and benefiting approximately 12,700 residents.				
	<ul> <li>Conceptualized and developed the Homeward DC transformative initiative, an 8-ward strategic approach to end homelessness. Includes more than \$30 million in new and recurring investments and has contributed to a 40% decline in the number of families experiencing homelessness in the District. Closed outdated facilities such as DC General Hospital, replacing them with smaller, service-enriched and community-based short-term housing programs throughout the District.</li> </ul>				
	• FY18 and FY19 budgets invest more than \$1 billion to make the District more affordable for residents in all 8 wards; this includes the Parks at Walter Reed, a 100% affordable housing development that will consist of 77 units for previously homeless veterans.				
	<ul> <li>Increased funding dedicated to the Home Purchase Assistance Program, which provides up to \$84,000 for low and moderate income residents to help them buy first homes; and expanded the down payment assistance program through the Employer Assisted Housing Program from \$10,000 to \$20,000.</li> </ul>				
TRANSPORTATON	• Secured an additional \$178 million in dedicated funding per year for Metro as part of a regional fiscal solution to getting WMATA back to a state of good repair.				
	<ul> <li>DC named a "Gold Bicycle Friendly Community" by the League of American Bicyclists and retained its Gold Status Walk-Friendly City standing as designated by the Walk Friendly Communities organization.</li> </ul>				
	• New miles of bike trails opened along the Anacostia River, and numerous Capital Bikeshare stations opened in Wards 7 and 8, providing more affordable, healthy transportation options.				

	The DC Department of Transportation improved more than 520 alleyways through		
	AlleyPalooza, an initiative launched in 2015 to promote alley repair and reconstruction.		
	65% of DC neighborhoods are walkable and about 58% of commuter trips are by bike,		
	walking and public transit. The goal in SustainableDC is to increase this to 75% by 2032.		
FOOD	• Distributed \$12 million in healthful food access benefits to women, children and families		
	through programs such as the Special Supplemental Nutrition Program for Women, Infants		
	and Children (WIC), Joyful Food Markets, and Produce Plus.		
	• Expanded lactation support across the District through breastfeeding peer counselors.		
	• Launched the Neighborhood Prosperity Fund, awarding \$3 million to support two grocery		
	options in mixed-used development projects in Wards 7 and 8. The fund also supports a		
	broader effort to fill gaps in the non-residential parts of mixed used projects in		
	neighborhoods where unemployment is 10% or greater.		
MEDICAL CARE	• 97% of District residents have health insurance coverage, which puts Washington, DC among		
	the best in the country for coverage, and 76% of residents receive preventative care thanks		
	to improved access to health services.		
	• Approximately 2.000 residents aged 60 and older use the District's six wellness centers for a		
	variety of programs, including fitness, nutrition counseling and social activities.		
	• \$16.9 million invested in DC's senior wellness centers across the city, including a new Ward		
	8 wellness center: and expanded Model Cities and Congress Heights wellness centers.		
	<ul> <li>Invested \$300 million to support a new state-of-the-art hospital at St. Elizabeths, towards</li> </ul>		
	the goal of a sustainable and efficient solution that ensures that residents in every ward		
	have access to high quality and affordable health care options.		
	<ul> <li>Reduction in new HIV diagnoses, and progress towards ending the HIV epidemic in DC by</li> </ul>		
	increasing knowledge of HIV status, treatment, and viral suppression.		
OUTDOOR	<ul> <li>\$296 million planned investments in parks and recreation facilities over the next 6 years.</li> </ul>		
	including \$4.7 million for educational and recreational improvements on Kingman &		
ENVIRUNIVIENI	Heritage islands located in the Anacostia River, building upon the activities and investments		
	associated with the 2018 Year of the Anacostia.		
	Based on multiple factors, the District's spending plan for the Volkswagen Settlement Fund		
	of \$8.1 million prioritizes projects that improve air quality in Wards 7, Ward 8, and Ward 5,		
	where it is likely to have the greatest impact on health and wellbeing.		
	• "Bag Law" and "Foam Ban" reduced use of plastic bags among 80% of residents; 72% fewer		
	bags found in trash cleanups; and 92% business compliance with the foam ban.		
	• DC Government is 100% powered by renewable energy, and is on-track to derive at least		
	100% of entire city's electricity from renewable sources by 2032.		
	• The Solar for All program aims to half the electricity bills of 10,000 low income residents.		
COMMUNITY	• Launched the Safer Stronger DC Office of Neighborhood Safety and Engagement, facilitating		
SVEETA	community-oriented, public health approach to violence prevention.		
SALLI	• Over 12,000 security cameras have been installed on homes, businesses and churches		
	funded through the Private Security Camera Incentive Program.		
	• New MPD initiatives dedicated to earning community trust, while changing and saving lives.		
	• More than 50,000 DC residents and visitors were trained in Hands-Only CPR through the		
	Hands on Hearts program.		
	• Strong re-integration and job training programs for returning citizens, such as Project		
	Empowerment, and Aspire to Entrepreneurship through the Department of Small and Local		
	Business Development, help re-build community, find jobs, and combat recidivism.		
	The re-accreditation of the Department of Forensic Sciences Lab helps police and		
	prosecutors identify and convict perpetrators of crimes.		

## Acknowledgements

**Government of the District of Columbia** Muriel Bowser, Mayor

## **Department of Health**

**Office of the Director** LaQuandra S. Nesbitt MD, MPH, Director

### Office of Health Equity

C. Anneta Arno, Ph.D., MPH, Director, OHE

### Prepared by:

C. Anneta Arno, Ph.D., MPH, Director, OHE

### Health Equity Report (HER) Technical Advisory Team

C. Anneta Arno, Ph.D., MPH, Director, OHE Fern Johnson-Clarke, Ph.D., Senior Deputy Director, CPPE Joy E. Philips, Ph.D., Associate Director, State Data Center, DC Office of Planning

### Contributing Members: Data and GIS Mapping Office of Health Equity (OHE)

Noelle Ortiz, MPH, Public Health Analyst, (former OHE staff member) Fang Wang, MSUP, Graduate Intern/GIS Analyst (former OHE staff member)

### **Center for Policy Planning and Evaluation (CPPE)**

Emily Putzer, MA, Program Coordinator DC Healthy People 2020, CPPE Tracy Garner, Behavioral Risk Factor Surveillance System Coordinator, CPPE Kenan Zamore, MPH, Senior Research Epidemiologist, CPPE Patricia Lloyd, Ph.D., ScM, Health Statistician, CPPE

## **Table of Contents**

Acknowledgements	1
Table of Contents	2
List of Figures	4
List of Tables	9
Executive Summary	11
Purpose	11
Overarching Goals	11
What Drives Health?	11
Social Determinants of Health	
Opportunities for Health: Nine Key Drivers	12
Community Health Drivers	13
Driver 1: Education	16
Driver 2: Employment	
Driver 3: Income	20
Driver 4: Housing	22
Driver 5: Transportation	24
Driver 6: Food Environment	26
Driver 7: Medical Care	
Driver 8: Outdoor Environment	
Driver 9: Community Safety	
Opportunities for Health in DC: Interrelated Pathways	
CONCLUSION: Leveraging the Key Drivers to Promote Opportunities for Health	41
References	
Introduction	49
References	54
Part 1: Frameworks and Background	55
Chapter 2: Frameworks—Key Concepts and Terminology	56
References	62
Chapter 3: Methodology	64
References	
Part 2: Demographics and Population Health	71
Chapter 4: Resident Demographics	72
References	
Chapter 5: Population Health Status	

References	
Washington DC Ward Summaries	103
Chapter 6: Ward 1 Summary	
Chapter 6: Ward 2 Summary	
Chapter 6: Ward 3 Summary	
Chapter 6: Ward 4 Summary	
Chapter 6: Ward 5 Summary	
Chapter 6: Ward 6 Summary	
Chapter 6: Ward 7 Summary	
Chapter 6: Ward 8 Summary	
Part 3: Community Health Drivers	113
Chapter 7: Education	
References	
Chapter 8: Employment	
References	
Chapter 9: Income	
References	
Chapter 10: Housing	
References	
Chapter 11: Transportation	
References	
Chapter 12: Food Environment	
References	
Chapter 13: Medical Care	
References	
Chapter 14: Outdoor Environment	
References	
Chapter 15: Community Safety	
References	
Part 4: Conclusion	249
Chapter 16: Conclusion	250
References	

## **List of Figures**

### **Executive Summary**

- Figure 1: Statistical PNG Reference Names and Numbers (DC HER 2018)
- Figure 2: Life Expectancy at Birth (2011-2015) Years
- Figure 3: Adults Without High School Diploma and Living in Poverty
- Figure 4: Adult Unemployed Population
- Figure 5: Low Household Income (less than \$15,000/year)
- Figure 6: Household Gross Rent 35% or More of Household Income
- Figure 7: Zero-Car and Transit-Dependent Households
- Figure 8: Households with Public Assistance or SNAP Benefits
- Figure 9: Population with Health Insurance Coverage
- Figure 10: District Adult Physical Activity By Ward BRFSS 2015
- Figure 11: Pediatric (age 2 to 17) Asthma Emergency Room Visits, 2014-2016
- Figure 12: Violent Death Rates per 100,000, Combined Homicide and Suicide
- Figure 13: Adult Fair and Poor Health by Race, Ethnicity and Gender, DC BRFSS 2015
- Figure 14: Percentage of Non-Hispanic White; Black; Hispanic and Asian Populations
- Figure 15: Population in Poverty and Life Expectancy
- Figure 16: Collaborative Actions For Change/Multi-Sector Opportunity Levers

### Introduction: Place Matters and Context Counts

- Figure 1.1: The Health Equity Ideal— Adapted from CDC 20131
- Figure 1.2: District of Columbia ACS 2017 Population Estimate, and 2012-2016 ACS 5-Year Estimates
- Figure 1.3: What Drives Health: Clinical Care and Other Non-Clinic Determinants of Health

### Part 1: Chapter 2: Frameworks – Key Concepts and Terminology

- Figure 2.1: Equality versus Equity Perspective
- Figure 2.2: The Social and Structural Determinants of Population Health

### Part 1: Chapter 3: Methodology

- Figure 3.1: Statistical (PNG) Neighborhood Reference Names
- Figure 3.2: Statistical (PNG) Neighborhood Reference Names and Numbers
- Figure 3.3: How to Read Report Maps

### Part 2: Chapter 4: Resident Demographics

- Figure 4.1: DC Total Population by Ward (2011-2015) ACS Estimates
- Figure 4.2: DC Population Density by Ward
- Figure 4.3: DC Population Pyramid Population by Age and Sex
- Figure 4.4: Household Types in the District 2011-2015
- Figure 4.5a: Percentage of Children Under Age 5, by Ward
- Figure 4.5b: Percentage of Adults Over Age 65, by Ward
- Figure 4.6: Percentage of Non-Hispanic White; Black; Hispanic and Asian Populations (%)
- Figure 4.7: Percentage Foreign Born Population (%)
- Figure 4.8: Language Other than English Spoken at Home (%)
- Figure 4.9: Population in Poverty (%)

### Part 2: Chapter 5: Population Health Status

- Figure 5.1: Selected Chronic Diseases US vs. DC
- Figure 5.2: Distribution of 10 Leading Causes of Death, District of Columbia, 2015
- Figure 5.3: Infant Mortality by Maternal Race and Ethnicity, District of Columbia 2005-2016
- Figure 5.4: Leading Causes of Death #1 HEART DISEASE
- Figure 5.5: Leading Causes of Death #2 CANCER
- Figure 5.6: Leading Causes of Death #3 ACCIDENTS
- Figure 5.7: Leading Causes of Death #4 STROKE
- Figure 5.8: Leading Cause of Death #5 DIABETES
- Figure 5.9: Leading Causes of Death #6 CHRONIC LOWER RESPIRATORY DISEASE
- Figure 5.10: Leading Causes of Death #7 ASSAULT/HOMICIDE
- Figure 5.11: Leading Causes of Death #8 ALZHEIMER'S DISEASE
- Figure 5.12a: Life Expectancy at Birth, By Ward 2009-2013 (Years)
- Figure 5.12b: Life Expectancy at Birth, By Ward 2010-2014 (Years)
- Figure 5.13: Life Expectancy at Birth by Ward (2011-2015)

### Part 2: Chapter 6: Ward Summaries

- Figure 6.1: Ward 1 Population Health Overview
- Figure 6.2: Ward 2 Population Health Overview
- Figure 6.3: Ward 3 Population Health Overview
- Figure 6.4: Ward 4 Population Health Overview
- Figure 6.5: Ward 5 Population Health Overview

- Figure 6.6: Ward 6 Population Health Overview
- Figure 6.7: Ward 7 Population Health Overview
- Figure 6.8: Ward 8 Population Health Overview

### Part 3: Chapter 7: Education

- Figure 7.1: Interrelated Pathway for Education and Health
- Figure 7.2: Graduation Rates DC Public Schools DCPS and PCS (2016)
- Figure 7.3: Adult Bachelor's Degree or Higher By Neighborhood Group
- Figure 7.4: Adult High School Graduate or Higher by Neighborhood Group
- Figure 7.5: Education and Selected Health Outcomes in the
- Figure 7.6: Adults Without a High School Diploma and Living in Poverty
- Figure 7.7: Education and Health Outcomes, DC 2015

### Part 3: Chapter 8: Employment

- Figure 8.1: DC Wage and Salary Employment by Industry 2017
- Figure 8.2: Adult Employed Population by Neighborhood Group
- Figure 8.3: Adult Unemployed Population by Neighborhood Group and Life Expectancy
- Figure 8.4: Self-Reported Fair or Poor Health by Employment Status

### Part 3: Chapter 9: Income

- Figure 9.1: Preventative Care Use by Income USA
- Figure 9.2: Mean Household Income by Neighborhood Group
- Figure 9.3: Average\* Median Household Income by Neighborhood Group
- Figure 9.4 : Trends in Family Wealth, 1989–2013 USA
- Figure 9.5: Median Family Wealth, by Education Group USA
- Figure: 9.6a: Wealth Inequality by Race and Ethnicity 2007-2013 USA
- Figure: 9.6b: Wealth Inequality by Race and Ethnicity Since 2007 USA
- Figure 9.7: Median Household Income by Race/Ethnicity in the District of Columbia
- Figure 9.8: Income Inequality: Distribution on the GINI scale
- Figure 9.9: Low Household Income (less than \$15,000/year) By Neighborhood Group and Life Expectancy
- Figure 9.10: Reported Fair or Poor Health by Income—DC 2015

#### Part 3: Chapter 10: Housing

- Figure 10.1: A Socioecological Model of Housing and Health
- Figure 10.2: Owners and Renters in the District of Columbia and U.S. Comparisons: 2008–2015
- Figure 10.3: Gross Rent at 35% or More of Household Income by Neighborhood Group
- Figure 10.4 Homelessness in the District of Columbia, 2009 to 2017

### Part 3: Chapter 11: Transportation

- Figure 11.1: Households Zero Car or Transit Dependent and Main Transit Lines
- Figure 11.2: Capital Bike Share Locations and Bike Lanes
- Figure 11.3: Zero-Car and Transit-Dependent Households by Neighborhood Group and Life Expectancy

#### Part 3: Chapter 12: Food Environment

- Figure 12.1: USDA Low Income and Low Access Areas (Half-and 1-Mile) Areas, District of Columbia, 2015
- Figure 12.2: Grocery Store Access (Distance Only), by 0.5 and 1.0 Mile Radii
- Figure 12.3: Grocery Stores, Farmers Markets, and Healthy Corner Stores
- Figure 12.4: Convenience Stores and Liquor Stores by Neighborhood, 2016
- Figure 12.5 Relative Healthy Food Availability By Neighborhood Group
- Figure 12.6a: Adults Overweight Percentage by Ward
- Figure 12.6b: Obese Percentage By Ward
- Figure 12.7: Physical Activity and Sedentary Behaviors, High School Students, 2017
- Figure 12.8: Households with Public Assistance of SNAP Benefits by Neighborhood Group

#### Part 3: Chapter 13: Medical Care

- Figure 13.1: Health Insurance Coverage for District Residents, 2011–2015
- Figure 13.2: Adult Fair and Poor Health by Race and Ethnicity, DC BRFSS 2015
- Figure 13.3: Adult Fair and Poor Health by Gender, DC BRFSS 2015
- Figure 13.4: Population WITH Health Insurance Coverage by Neighborhood Group
- Figure 13.5: Population WITHOUT Health Insurance Coverage by Neighborhood Group
- Figure 13.6: Population WITH PUBLIC HEALTH INSURANCE Coverage By Neighborhood Group
- Figure 13.7: Hospital Service Locations
- Figure 13.8: Primary and Specialty Care Locations

- Figure 13.9 : Mental Health Rehabilitation System Treatment Locations
- Figure 13.10: Substance Use Disorder Locations
- Figure 13.11: Adults' Health Literacy by Racial/Ethnic Groups: 2003 by Race and Ethnicity
- Figure 13.12: Speak English Less-than Very Well (Limited English Proficiency)
- Figure 13.13: Population WITH Health Insurance Coverage and Life Expectancy

### Part 3: Chapter 14: Outdoor Environment

- Figure 14.1: Positive Health Effects of The Natural Outdoor Environment
- Figure 14.2: Parks and Parkland Resources, Quality, and Availability
- Figure 14.3: Reported Physical Inactivity District and US Residents BRFSS 2015
- Figure 14.4: Adult Physical Inactivity, Last 30 Days BRFSS 2015
- Figure 14.5: Pediatric (ages 2-17) Asthma Emergency Room Visits, 2014-2016
- Figure 14.6: Adult Reported Asthma, by Ward, BRFSS 2015

#### Part 3: Chapter 15: Community Safety

- Figure 15.1: Injury Death Rates by Intent: US and DC, 2011–2015
- Figure 15.2: Rates for Leading Causes of Injury Death Mechanism: US and the District 2011–2015
- Figure 15.3: Opioid Epidemic in DC vs. National Experience Age Distribution 2016
- Figure 15.4: Opioid Epidemic in the District versus National Experience Race and Ethnicity 2016
- Figure 15.5: Violent Death Trends, District Residents (per 100,000, by Manner of Death), 2011–2015
- Figure 15.6: Male and Female Homicide Rates: by Race & Ethnicity, District of Columbia (2011-2015)
- Figure 15.7a: Homicide Rates by Gender, DC, 2011-2016
- Figure 15.7b: Suicide Rates by Gender, DC, 2011-2016
- Figure 15.8: Homicide and Suicide, 2011-2015, All Deaths, by Race and Ethnicity
- Figure 15.9: Violent Death Rates per 100,000 (Combined Homicide, Suicide)
- Figure 15.10: Incidents of Crime (1-year total, 2016)

### Part 4: Chapter 16: Conclusion

- Figure 16.1: Opportunities for Health-Interrelated Pathways
- Figure 16.2: Population in Poverty and Life Expectancy
- Figure 16.3: Collaborative Actions For Change/Multi-Sector Opportunity Levers

## **List of Tables**

### **Executive Summary**

• Table 1: Differential Opportunities for Health – Sample Indicator Summary

### Part 2: Chapter 4: Resident Demographics

• Table 4.1: District of Columbia Demographic Profile 2000 and 2015 Compared

### Part 2: Chapter 5: Population Health Status

- Table 5.1: 10 Leading Causes of Death, 2015 District of Columbia and US
- Table 5.2: Leading Causes of Death, by Race and Ethnicity District of Columbia, 2015

### Part 3: Chapter 7: Education

- Table 7.1: DC Public Schools Student Population, School Years 2014–2017
- Table 7.2: DC Public Schools, 2015, Grade 8 Mathematics Snapshot Report
- Table 7.3: DC 2016 Adjusted Cohort Four-Year Graduation Rate (SY 2015–2016)—Overview
- Table 7.4: DC 2016 Adjusted Cohort 4-Year Graduation Rate (SY 2015-2016)

### Part 3: Chapter 8: Employment

• Table 8.1: Employer Sponsored Benefits: Access, Participation and Take Up, US and Mid-Atlantic Rates, March 2017

### Part 3: Chapter 9: Income

• Table 9.1: Access to Selected Paid Benefits by Average Income USA (March 2017)

### Part 3: Chapter 10: Housing

- Table 10.1: Housing Tenure, Occupancy and Costs by Ward (ACS 2011–2015) OP State Data
- Table 10.2 Homelessness Adults, Selected Reported Disabling Conditions 2017

### Part 3: Chapter 11: Transportation

• Table 11.1: Vehicle Ownership and Commuting Patterns by Ward (ACS 2011–2015)

### Part 3: Chapter 12: Food Environment

• Table 12.1: USDA Estimate of Food Desert Impacts in the District of Columbia, 2010 and 2015

### Part 3: Chapter 14: Outdoor Environment

• Table 14.1: DC Parks and Recreation Facilities 2017

### Part 3: Chapter 15: Community Safety

- Table 15.1: Number of Resident Violent Deaths by Manner and Year, 2011–2015.
- Table 15.2: Community Violence Risks and Resilience Factors
- Table 15.3: Proactive Policing Landscape Summary, 2017

### Part 4: Chapter 16: Conclusion

• Table 16.1: Differential Opportunities for Health – Sample Indicator Summary

## **Executive Summary**

### Purpose

The Health Equity Report for the District of Columbia (DC HER) 2018<sup>1</sup> provides a baseline assessment of health equity and opportunities for health in Washington DC. Using a social and structural determinants of health approach, population health data on the leading causes of death and projected life expectancy at birth was employed in conjunction with social and economic data and geographic information systems (GIS) tools and methods to develop a snapshot of differential opportunities for health across the city. While a high-level summary for each of the eight wards is included in the main report, emphasis was placed on highlighting the health and socio-demographic profile for the city to 51-statistical neighborhoods around which the analysis focused.

### **Overarching Goals**

- Develop a baseline assessment of social determinants of health in the District of Columbia
- Inform the narrative regarding improving opportunities for health and achieving health equity
- Engage a broad spectrum of the community in essential multi-sectorial solution development

### What Drives Health?<sup>2</sup>



### Health Equity 101: Six (6) Key Insights

- Health is more than healthcare<sup>3</sup>
- Health inequities are neither natural nor inevitable<sup>3</sup>
- Your zip-code may be more important than your genetic code for health<sup>4</sup>
- The choices we make are shaped by the choices we have<sup>3</sup>
- Structural racism acts as a force in the distribution of opportunities for health<sup>5</sup>
- All policy is health policy<sup>6</sup>

### Social Determinants of Health

Evidence shows that overall, clinical care drives only 20% of population health outcomes, with the remaining 80% generated by non-clinical determinants. This inaugural **Health Equity Report for the District of Columbia (DC HER) 2018** utilized an overarching framework on the social determinants of health consistent with the County Health Rankings Model (2014)<sup>2</sup> upon which the diagram above is based. It is further informed by the six evidence-based Health Equity insights from public health literature and practice as shown.

## Opportunities for Health: Nine Key Drivers

Community health is explored within the **Health Equity Report for the District of Columbia (DC HER) 2018** through the lens of nine key drivers as listed, with a chapter devoted to each, as summarized below. The focus on these primary social determinants should not be construed as the only topics relevant to health equity in the District. In this **DC HER 2018 Executive Summary**, a high-level overview is presented for each driver, including one map, with the goal of crystalizing major issues and connecting branches that inform the health equity conversation. It is anticipated that over time the conversations surrounding these topic areas will be expanded in response to community priorities.

### Nine Key Drivers:

	1. Education		2. Employment
60	3. Income		4. Housing
	5. Transportation	<b>S</b>	6. Food Environment
	7. Medical Care		8. Outdoor Environment
	9. Community Safety		

**Population Data and Data Sources:** The report includes data from the US Census and District of Columbia Department of Health (DC Health), including Vital Statistics and the Behavioral Risk Factor Surveillance System (BRFSS), plus additional data from the DC Office of Planning State Data Center. Data are organized by social, economic, demographic, and health outcome factors

including race, ethnicity, education, and income to illustrate the relationship of social determinants and health outcomes. (See **Chapter 3** for methodology, and **Figure 3.3** for notes on reading maps).

**Data Organization and Visualization:** Proximal Neighborhood Groups (PNGs; also referred to as statistical neighborhoods or neighborhoods) are utilized for analytical reliability because they help connect US Census social determinants and population health outcome data to local places and people. Maps of the 51-statistical PNGs are used throughout the main report to display population-level data. Each has been assigned a number (1 through 51), but has also been named for convenience based on "proximity of place" (see **Figure 1** for map of all the PNGs used). It is important to know that the PNG names being used are distinguishing labels only, are not representative of official neighborhood boundaries, and do not capture the official or lived reality of how residents themselves define their neighborhoods.

### Community Health Drivers: Summary

Disaggregating and mapping the data to the 51-statistical neighborhood level reveals a patterning of outcomes to a more granular scale. For each of the nine drivers, the data present a picture of significant differences across the 51-statistical neighborhoods that align with disparities in health outcomes, including life expectancy, which differs by 21 years between the two ends of the spectrum (**Figure 2**). Life expectancy estimates are used as a key overarching health outcome, underscoring differential opportunities for health in the District.

**Proximal Neighborhood Groups & Ward Overlays: Names & Numbers** Figure 1: Statistical PNG Reference Names and Numbers (DC HER 2018)

### DISTRICT OF COLUMBIA (PROXIMAL) NEIGHBORHOOD GROUPS



### **POPULATION HEALTH OUTCOMES by Neighborhood Group** Figure 2: Life Expectancy at Birth (2011-2015) Years

### LIFE EXPECTANCY AT BIRTH (2011-2015)





## **Driver 1: Education**

High educational attainment is one of the positive attributes of the District, with 54.6% of residents having earned a bachelor's degree or higher, compared with a US rate of 29.8%. Visualization of educational attainment at the neighborhood level shows differences in the percentage and geographic distribution of residents with a bachelor's degree or higher (not shown). Differences in the percentage and geographic distribution of residents at the statistical neighborhood level (**Figure 3**), where the District rate (35%), is higher than the US rate of 27.5%. There is limited overlap in the residential proximity of these two groups of residents at either end of the educational attainment continuum, as well as differential life expectancy of the neighborhoods in which they are concentrated.

Data on student performance in District Public and Charter Schools also indicate a high degree of variability in performance of individual public and charter schools. There are persistent performance gaps by race and ethnicity (2000 to 2015), including a widening gap over the same period by gender, which negatively impacts male students. All underscore a picture of differential educational opportunities, depending on the high school attended. The 2016 adjusted cohort graduation rate data reveal racial and ethnic differences. White students had a 91.4% graduation rate, compared with African-American students (67.7%), and Latino students (69.2%) (OSSE, 2016b).<sup>7</sup>

Low educational attainment correlates with risk for living in poverty as well as with higher rates of fair or poor health, including higher prevalence and poorer outcomes for a range of health conditions including stroke, heart disease, and diabetes. Data for the District of Columbia in 2015 showed that of adults without a high school diploma, 35% were in fair/poor health (**Figure 3-inset**), a statistically significant difference compared to how those with higher educational attainment rate their health. For those who had graduated from high school, the proportion in fair/poor health was 15.4%, higher still than those with some college (13%) or for college graduates (4.7%). High school graduation is not only a prerequisite to college, but college graduates can expect to live at least five years longer than individuals who did not finish high school (RWJF, 2009).<sup>8</sup>

## **EDUCATION by Neighborhood Group and Life Expectancy** Figure 3: Adults Without High School Diploma and Living in Poverty

### PERCENTAGE OF ADULTS (25+) WITH LESS THAN HIGH SCHOOL DIPLOMA LIVING IN POVERTY





## **Driver 2: Employment**

A good job is more than just a paycheck. Job quality includes not only earned income, but also the availability of employer-supported or provided benefits, such as health insurance, paid leave, or retirement contributions. Data from the United States Department of Labor, Bureau of Labor Statistics (BLS) show that there is a close relationship between higher incomes and more benefits. The reverse is also true, with lower pay linked to fewer benefits as well as lower utilization rates. An estimated 7% of US workers are considered **working poor**, that is, they work at least 27 weeks in the year but still live in poverty. However, more than half of this group (4% of US workers) actually work full time (BLS, 2016).<sup>9</sup>

Visualization of adult employment and unemployment for the District at the statistical neighborhood level shows wide variation, with neighborhoods both well above and well below the local and national averages (**Figure 4**). The District's unemployment rate over the span of 2011–2015 was higher than the national rate (9.6% versus 8.3%, respectively). These averages, though, obscure the depth and concentrations across the District, where six neighborhoods in Wards 7 and 8 had unemployment rates in excess of 20%, and one neighborhood (Bellevue) had an unemployment rate of 30%. At the other end of the spectrum, unemployment in Wards 2 and 3 averaged just 3.7% for the same period—40% lower than the national average. Of residents reporting unemployment in the 2015 Behavioral Risk Factor Surveillance Survey (BRFSS), 18.6% reported their health status as fair/poor (**Figure 4-inset**). That number was 4.7% for those reporting that they were employed, greater than a threefold difference.

The importance of employment status to health is well documented. People who are employed have better health, and individuals and families supported by stable employment are better positioned to practice healthy behaviors consistently and use preventative medical services. The increased health risks of unemployment are well known, showing that people who are unemployed are 54% more likely to have fair/poor health, and 83% more likely to develop stress-related conditions and other diseases (RWJF, 2013).<sup>10</sup>

### **UNEMPLOYMENT by Neighborhood Group and Life Expectancy** Figure 4: Adult Unemployed Population

# PERCENTAGE OF UNEMPLOYED POPULATION (16 YEARS AND OVER OF CIVILIAN LABOR FORCE )



Health Equity Report: District of Columbia 2018



## **Driver 3: Income**

Despite having one of the highest median household incomes in the nation at \$70,848 for the District versus \$53,889 nationally (US Census, 2011–2015), the District of Columbia's poverty rate, at 18% in 2016, was also one of the highest in the United States. Consequently, the District is also one of a handful of states with rates of income inequality above the national average (US Census, 2017).<sup>11</sup> Mapping of household incomes to the 51-statistical neighborhoods show that the highest neighborhood median household income in 2015—Barnaby Woods, at \$200,031—was nearly eight times that of the lowest, St. Elizabeths, at \$25,311 (not shown). Overall, an estimated 14.4% of District residents lived at or below \$15,000 per year, higher than the national average of 12%, in 2015 inflation-adjusted dollars.

In 15 neighborhoods, there is a concentration of low incomes; their proportion make up more than one in five (20%) of all households, rising to a high of one in three (33%) in St. Elizabeths (**Figure 5**). This concentration of low incomes is correlated with the lowest life expectancy rates. Large gaps in household income by race and ethnicity are also evident, with the largest gaps between Black and White residents. In 2015, the median household income for Black households in the District was \$40,677, barely over a third of that of White households at \$115,890 (US Census, ACS 2015). The poverty rate for Black District residents, at 27% in 2015, was still above pre-recession levels seven years after the financial crisis (23% of Black residents lived in poverty in 2007). Within the District, 21% of adults earning \$15,000 or less reported only fair/poor health, compared with only 3.0% of those earning \$75,000 or more (**Figure 5-inset**).

These statistically significant differences in fair/poor health are not simply a rich-versus-poor dichotomy. In fact, at every step along the income scale, perceptible differences in reported health status are evident. These outcomes are consistent with evidence showing that higher incomes and social status are linked with better health. Research also shows that income inequality is linked with health, and that the greater the gap between the richest and poorest residents, the greater the differences in health outcomes. National data show significant gaps between low-income and high-income Americans on the likelihood of having a regular doctor's visit (64% versus 89%), and having a cholesterol check in the past five years (54% vs. 85%) (RWJF, 2013).<sup>12</sup> Other data show that for workers in the highest income quartile, 87% had access to paid sick leave, versus 41% in the lowest income quartile (BLS, 2017).<sup>13</sup>

## **INCOME by Neighborhood Group and Life Expectancy** Figure 5: Low Household Income (less than \$15,000/year)

### PERCENTAGE OF HOUSEHOLDS EARNING LESS THAN \$15,000 (IN 2015 INFLATION-ADJUSTED DOLLARS)





## **Driver 4: Housing**

A rule of thumb has it that across the United States, households spending more than 30% of gross income on housing are considered **cost-burdened**, and those spending more than 50% are considered severely cost-burdened. US Census selected housing characteristics for the District 2011–2015 show that 51% of households spent less than 30% on rent as a percentage of household income. Another 8.9% spent 30% to 34.9% of income on rent; and the remaining 39.8% spent 35% or more of household income on rent.<sup>14</sup> Mapping of housing cost-burden across the District's 51-statistical neighborhoods shows the percentage of households who spend gross rent as a percentage to household income (GRAPI) at or in excess of 35%. This visualization shows that while nearly 40% of District households meet this definition of cost burden; this is lower than the national average (42.7%) (**Figure 6**).

However, as shown (**Figure 6**), the occurrence of cost-burdened households (GRAPI equal to 35% or greater) differs in concentration across the District, ranging from 19.9% of households in Capitol Hill to a high of 59.6% in Historic Anacostia. The visualization shows generally higher concentrations to the south and east of the city, where, as shown earlier, incomes are lower. At the ward level, gross rents to household incomes were highest in Wards 7 and 8 at 49.0% and 52.8% of households respectively (2011–2015). These differentials are not inconsistent with national data, which show that while those in the bottom quartile of the income distribution spend in excess of 70% of household income on housing, those in the lower-middle quartile spend an average of 38%. In contrast, the percentages of US household income spent on housing fall to 20.8% and 9% for those in the upper-middle and upper quartile, respectively (RWJF, 2008).<sup>15</sup>

Housing affordability relative to income is critical to determining how much households have left over to meet other basic needs. Severely cost-burdened households endure frequent financial strain and must make difficult tradeoffs between essentials such as food, utilities, and medical bills. It is estimated that 14% of District households experience some level of food insecurity, and 10% worry about running out of food before getting enough money to purchase more (US Census (AHS, 2015), 2016T).<sup>16</sup> Additionally, while homelessness has declined nationally, it has risen in a number of major cities, including the District, which saw a 34.1% increase in homelessness between 2009 and 2016<sup>17, 18, 19</sup> (**Figure 6-inset**). These numbers have since gone down, but as shown, in 2017 there were 1,166 homeless families, including a total of 3,890 family members of parents and children, of which children make up nearly 60%. There were also 3,583 homeless single adult individuals in the District in January, 2017.<sup>19, 20</sup>

The overlay of life expectancy by neighborhood and the percentage of households spending more than 35% of income on housing in the District (**Figure 6**) underscore the correlation between high housing cost burden and its broader consequence, including links to health and life expectancy.

### **HOUSING COST by Neighborhood Group and Life Expectancy** Figure 6: Household Gross Rent 35% or More of Household Income

### GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) 35% PERCENT AND MORE





## **Driver 5: Transportation**

According to the US Department of Labor, Bureau of Labor Statistics, the average US resident spends 17% of annual income on transportation, the second-highest expenditure after housing, at 32% (BLS, 2017).<sup>21</sup> Poor access to public transportation is linked with decreased income and higher rates of unemployment, while decreased access to active transportation (e.g. walking and biking) is linked with decreased physical activity. Transportation is an economic necessity that should be planned with an eye to access, affordability, and active transportation alternatives. Transportation access is essential for connectivity to jobs, schools, daycare, and food, as well as medical care and health services essential to daily living and quality of life. Inadequate transportation limits opportunities available to individuals and to whole communities. The District is a relatively transit-rich environment, where a high proportion of households (36.4%), do not own a vehicle, compared with the national rate of 9.1% (ACS 2011–2015 Estimates).

While many households in the District may actively choose not to own a car, many simply cannot afford one. It is estimated that up to 60% of US households without a car are low-income and are highly reliant on public transportation. Despite the growth of new rideshare options, access gaps in public transportation remain in the District, especially further away from the center. Visualization of transportation options within the District, including Capital Bikeshare locations, bike lanes, and main transit lines (not shown), as well as the percentage of households with no vehicle to the 51-statistical neighborhood level (**Figure 7**) reveal geographic variability. Several neighborhoods, especially to the northwest, have very few households without a car. Toward the center of the city, there are relatively high concentrations of households without access to a car, but this is balanced by high levels of transit availability, including the highest rates of commuting by transit (47.8%) in Ward 1, as well as walking and other modes of commuting at their highest (38.6%) in Ward 2<sup>22</sup> (*See Figure 1 for ward overlay*). Capital Bikeshare and bike lanes are also much more concentrated towards the city center, with a paucity of biking options beyond (not shown).

High concentrations of zero-vehicle or transit-dependent households are most common in neighborhoods to the south and east of the city, where households without access to a car exceed the District average in most neighborhoods (**Figure 7**). In several neighborhoods, particularly some within Wards 7 and 8, up to half of all households have no access to a vehicle. Rates of transit commuting in these two wards are high, in combination with relatively high rates of car commuting. With economic mobility linked with geographic mobility, opportunities for social and economic success as well as health itself can be dependent on transportation access, opportunities, and cost. The visualized overlay of life expectancy with zero-car households and their concentrations show a correlation (**Figure 7**).

### **TRANSPORTATION by Neighborhood Group and Life Expectancy** Figure 7: Zero-Car and Transit-Dependent Households

### PERCENTAGE OF OCCUPIED HOUSING UNITS WITH NO VEHICLES





Food environments and opportunities for healthy food purchase differ across the District of Columbia. The mix of healthy options, from full-service grocery stores and supermarkets to farmers' markets, as well as healthy corner stores, varies at the neighborhood level. With a total of 45 full-service grocery stores in the District, the city has an overall grocery store density score of 0.069 (i.e. approx. 0.07 stores per 1,000 population), placing the District in the lowest quartile among states.<sup>23</sup> That said, because of the relatively small geographic size of the District, at 61 square miles, the large majority of residents live within one mile of a grocery store. Based on the USDA Food Environment Atlas, there have been some improvements in the District between 2010 and 2015. Overall, the number of residents living within **Low Income/Low Access (LILA)** areas, based on the one-mile or greater food desert threshold, declined by 25%, to a total of 12,688 (2.11% of the population) in 2015. Of these, about one-third are low-income; about 15% are seniors, and 10% are households without cars.<sup>24</sup>

The District's total food environment includes not only access to full-service grocery stores, but also widespread potentially less healthy "food swamp" options including a far greater number of convenience stores (252 total) and liquor stores (231 total), together with several hundred carryout restaurants within the city. A measure of Relative Healthy Food Availability (RHFA) shows the proportion of grocery stores to convenience stores, mapped to the 51-statistical neighborhood level (not shown). Based on this measure, six neighborhoods (12%) had neither grocery nor convenience stores. A total of 17 neighborhoods (33%) had convenience stores only, with no grocery stores within their boundaries. Of the 28 neighborhoods (55%) that had both types of food retailers available, the percentage considered healthy (i.e. grocery stores) ranged from less than 20% healthy in 12 neighborhoods to 20% to 39% healthy in 8 neighborhoods. Only 4 neighborhoods had 40% to 50% of food retail options in the healthy range.

Food insecurity remains a major barrier to healthy eating in the District, with 11.4% of residents classified as food insecure from 2011–2016 and 4.0% classified as very low food security.<sup>25</sup> Nearly 16% of District households received public assistance income and/or Supplemental Nutrition Assistance Program (SNAP) benefits (**Figure 8**), underscoring its critical role in bridging food gaps. Life expectancy overlays shows correlations between highest SNAP use and lowest life expectancy by neighborhood. This is not to suggest that benefits have a perverse effect on life expectancy. Rather, it illustrates the impact of multiple confounding factors that residents in some neighborhoods face. Starting with high housing-cost burden, resource scarcity is accentuated in combination with costly transportation options, where just a few remaining dollars are available for necessities such as food.

### **FOOD ENVIRONMENT by Neighborhood Group and Life Expectancy** Figure 8: Households with Public Assistance or SNAP Benefits

### PERCENTAGE OF HOUSEHOLDS WITH PUBLIC ASSISTANCE INCOME OR SNAP IN THE PAST 12 MONTHS





## **Driver 7: Medical Care**

The District of Columbia has long prioritized health insurance coverage to promote and protect the health of as many residents as possible, including the expansion of Medicaid, even prior to the introduction of the Affordable Care Act (ACA), and also introduced the DC Alliance program. Additional benefits of the ACA bolstered these efforts, bringing the estimate to 94.2% (ACS, 2011–2015) of District residents with insurance coverage. Data mapping shows differing distributions of populations with any type of health insurance, those with public coverage (35.1%), and those without any health insurance (5.8%). Although those living without health insurance are a small group, doing so impacts different racial/ethnic resident groups differently. Nearly 1 in 7 Hispanic residents (13.5%) have no health insurance compared with 1 in 15 (11.8%) Black residents, and 1 in 30 (3.5%) White residents.<sup>26</sup>

Major investments over the past decade mean that primary care service supply and availability has expanded across the District, sufficient for the resident population. Some gaps persist, however, particularly in specialty services and urgent care.<sup>27</sup> However, even with the same access to care, implicit bias can negatively impact the care received, especially by people of color, immigrants, linguistic minorities, women, LGBTQ communities, and other historically disadvantaged populations.<sup>28</sup> Infant mortality is an important indicator of the health and wellbeing of a population. While the long-term trends in infant mortality are positive overall, persistent differences remain, with mortality rates three times higher for babies born to Black mothers than for their White counterparts. Differential health outcomes also persist across the life course. In 2015, while 19.5% of Black residents reported fair/poor health, this was significantly higher than that for White residents (3.9%), and double the 9.1% rate for other races/ethnicities as a group (BRFSS, 2015).

Since 2006, national data has shown that health literacy is an issue for all Americans. Regardless of income, race or ethnicity, and even though some groups are more impacted than others, more than 1 in 3 adults have limited health literacy. Few adults (12 %) are considered "proficient." Only 9% scored in the highest numeracy levels. Nearly 9 in 10 adults may lack the skills to manage their health and prevent disease; with consequences for how individuals and communities understand their health risks, the benefits available to them, the ways in which they access medical care, including the health behaviors they exhibit.<sup>29, 30</sup> Recognition of health literacy as a systems issue acknowledges the complexity of health information and the health care system itself, requiring increased focus on system-level changes, from individual providers, through to insurance companies. DC's health insurance–rich environment is ripe for application of universal-precaution best practices that assumes that everyone may have difficulty understanding and seeks to create an environment where all literacy levels can thrive.<sup>31</sup>

### **MEDICAL CARE by Neighborhood Group and Life Expectancy** Figure 9: Population with Health Insurance Coverage

# PERCENTAGE OF POPULATION WITH HEALTH INSURANCE COVERAGE (CIVILIAN NONINSTITUTIONALIZED POPULATION)





A detailed review of the evidence suggests that proximity to green space provides a tangible health benefit, that this benefit is particularly apparent among low-income residents, and that it is more pronounced with closer proximity to that space (BMJ, 2014).<sup>32</sup> The District performs well overall, scoring the fourth-highest ParkScore of 100 cities sampled in 2017 (Trust for Public Land, 2017).<sup>33</sup> However, the data also show that residents who earn less than 75% of the median city income have reduced levels of park access. There are significant differences in physical activity levels by ward. In Ward 3, adults with no physical activity was lowest at 6%; compared with Wards 1 and 6 in the middle, with rates at 18% and 23%, respectively (**Figure 10**) (BRFSS, 2015). The highest rate of no physical activity was in Ward 8, at 38%. The District also lags behind the national average in percentage of residents reporting no physical activity—26.2% versus 19.4%, respectively (**Figure 10 inset**).

Asthma is a condition impacted by environmental pollutants from outdoor and indoor sources. Data available at the zip code–level show differences in rates of pediatric (age 2 to 17) asthma visits to hospital emergency departments (**Figure 11**). While this analysis is not available at the statistical neighborhood level, an overlay of PNG boundaries with life expectancies are shown for reference. Not shown are ward-level differences in adults reporting asthma, with the highest, at 23.4%, in Ward 8, followed by 15.3% for Ward 6, 11.7% for Ward 7, and 10.6% in Ward 3 (BRFSS, 2015).

Background work in developing the District's plan to adapt to climate change looked at the number of residents with higher vulnerability, using social and economic indicators, including age and rates of obesity and asthma. This analysis showed that vulnerability to climate change was not evenly distributed. Wards 7 and 8 had the highest concentrations of vulnerability, as well as a large elderly population. They were followed in order by Wards 5, 6, 1, and 4.<sup>34</sup>



## **Figure 10: District Adult Physical Activity By Ward± BRFSS 2015**

Source: DC Department of Health, Behavioral Risk Factor Surveillance System, 2015

### **OUTDOOR ENVIRONMENT by Zip Code and Life Expectancy** Figure 11: Pediatric (age 2 to 17) Asthma Emergency Room Visits, 2014-2016

### RATE PER 10,000 PEDIATRIC (AGE 2-17) ASTHMA EMERGENCY ROOM VISITS



**Data Source:** Hospital Discharge Data 2014 – 2016, DC Hospital Association **Data Analysis:** Center for Policy, Planning and Evaluation, DC Department of Health


# **Driver 9: Community Safety**

Community safety is a broad category of public health consideration, encompassing falls and injuries; transportation and motor vehicle accidents; unintentional poisoning and overdose; and violence, including both homicide and suicide. The District compares favorably to the national average in some of these areas, such as unintentional injuries, with the District's rate of transportation-related deaths half that of the national average. Of the 718 violent deaths in the District from 2011 to 2015, 74% were homicides and 26% were suicides. Between 2009 and 2013, the District ranked first in the nation in firearms deaths. In 2011–2015, the rate was 13.3 per 100,000 population for mortality due to injury in the District involving a firearm, compared with 10.7 for the nation as a whole. Mortality due to homicide was 16.0 per 100,000 in the District, three times the national rate of 5.2. Of all homicide deaths in the District, over 70% were people ages 16 to 39 years, and 81% were Black males (DOH CPPE, 2017).<sup>35</sup>

The opioid epidemic has resulted in a threefold increase in opioid-related deaths nationally, but it has manifested differently in the District. The age distribution of opioid overdose deaths in the District compared to nationally shows lower rates in the District across all age groups, with the exception of the 55-years-and-older age range. Nationally, only 19% of opioid deaths are in this age group, compared with 45% in the District. The population most affected by opioid overdose deaths in the District compared to that of the nation by race and ethnicity also contrasts sharply. Nationally, 84% deaths are to Non-Hispanic Whites; within the District, 84% of deaths are to Non-Hispanic Blacks/African Americans. In the District, Hispanics also make up a lower share of opioid overdose deaths, compared to the national average. This demographic age and race differential, in combination with gender differences, results in black men over 40 as the most highly impacted by the epidemic in the District (DOH CPPE, 2017).<sup>36</sup>

Mapping and visualization of crime incidence data (not shown) show higher concentrations of crime towards the center of the city. In contrast, the visualization of age-adjusted violent deaths (**Figure 12**), shows a different geographic distribution, more concentrated toward the south and east of the city. The overlay of life expectancy, and low life expectancy in particular, is more closely correlated with the violent deaths than with crime rates alone (as measured by the number of incidents). Research shows that factors such as lack of jobs, racial and economic segregation, and concentrated poverty negatively impact neighborhood quality, community safety, and quality of life.<sup>37</sup> Cumulatively, these increase the likelihood of violence, including the effects of community and historical trauma. In contrast, the evidence shows that healthy communities—those that have positive attributes and alternatives, such as quality schools, economic opportunities, clean and well-designed physical environments, and structured activities that young people find meaningful, have prosocial benefits that create conditions improving community safety and protecting against violence.<sup>38</sup>

#### **COMMUNITY SAFETY by Neighborhood Group and Life Expectancy** Figure 12: Violent Death Rates per 100,000, Combined Homicide and Suicide

# AGE-ADJUSTED VIOLENT DEATH RATE, 2011-2015 (DISTRICT RESIDENTS)





# **Opportunities for Health in DC: Interrelated Pathways**

#### Interrelated Pathways: Where You Live and How Long You Live

Data presented throughout the body of the **Health Equity Report for the District of Columbia (DC HER) 2018** show that while the overall health of District residents has improved during the past decade, health disparities and inequities—as measured by almost any indicator—are evident by race, income, and geography across the District of Columbia. Infant mortality, which is the death of a baby before his or her first birthday, is an important indicator of the health and well-being of a population. Infant mortality in the District has declined, with the rate per 1,000 live births falling overall, from 13.6 in 2005 to 7.1 in 2016. While all groups saw a decrease, the rate for babies born to Black mothers remains well above the District average, and is still three times that of their White peers (DOH, CPPE 2018).<sup>39</sup>

Differential health outcomes also persist across the life course, as evidenced by self-reported fair or poor health by race and gender. While 3.9% of White residents fall into this category, nearly 1 in 5 Black residents (19.5%) report fair/poor health, which is over twice that of all other races, at 9.1% (**Figure 13**, BRFSS, 2015). Data and mapping of resident demographics across multiple indicators have shown residential patterning by race and ethnicity as well as by socioeconomic status, creating racially/ethnically and economically segregated communities within the District (DC HER 2018).<sup>40</sup>







Figure 13: Adult Fair and Poor Health by Race, Ethnicity and Gender, DC BRFSS 2015

Source: DC Health, BRFSS Surveillance System

**Figure 14** shows race and ethnicity percentages by neighborhood group. Each of the four maps show the percentage of White, Black, Hispanic, and Asian population distributions across DC. As with this visual representation, the District's Racial Dissimilarity Index Score of 70.9 for the five-year period 2011 to 2015 confirms that the city continues to be highly segregated. Theoretically, 70% of White residents would have to move to achieve complete White/Black integration; or 59% would have to move to gain complete White/non-White integration by race and ethnicity.<sup>41</sup>

Differential life expectancy at birth across the 51statistical neighborhoods show a 21-year gap between the longest (89.4 years) and shortest (68.4 years) estimated length of life (**Figure 2**). Life expectancy was overlaid with outcome measures across the full range of nine key drivers, from education to community safety. Visualizing the correlation between the different sociodemographic levels of statistical neighborhoods with life expectancy, underscores the similarity of outcomes distributions, as well as large gaps, across all of the determinants.

Life expectancy data also aligns with income levels, poverty concentrations and racial segregation. This is consistent with the finding that racial segregation

explains 70% of observed difference in life expectancy. Racial segregation together with economic segregation explain 76% of the observed differences (CPPE, 2014).<sup>42</sup>

#### Racial and Economic Segregation:

In making the *Business Case for Racial Equity (2013)*, a group of health equity researchers, drawing on the ever expanding body of knowledge that demonstrates how racism in the US has left a legacy of inequities across the full spectrum of social determinants, identified impacts across education, employment, income, wealth, housing, as well as health. While noting that significant progress has been made in eliminating legal discrimination and its overt expressions, disparities by race and ethnicity remain imbedded in societal institutions that connect these structural barriers in contemporary context and "place" (Turner et al., 2013).<sup>43</sup>

### **RACE AND ETHNICITY by Neighborhood Group**

Figure 14: Percentage of Non-Hispanic White; Black; Hispanic and Asian Populations (Maps 1-4 Clockwise)



### **OPPORTUNITIES FOR HEALTH IN DC by Neighborhood Group** Figure 15: Population in Poverty and Life Expectancy

#### PERCENTAGE OF TOTAL POPULATION IN POVERTY



Connecting the dots are critical, lest the persistently inequitable outcomes be mistaken as either natural or inevitable; the result of the 'invisible hand' of the market, acting on a level opportunity playing field (see also, Smedley et al. 2002<sup>44</sup> and LaVeist et al. 2011<sup>45</sup>). To be clear, Turner et al. (2013) noted that: "Opportunities that were denied racial and ethnic minorities at critical points in the nation's history have led to the disadvantaged circumstances that too many children of color are born into today."(p.3)

This speaks not only to the relevance of race and ethnicity to the equity conversation, but more explicitly to the importance of paying attention to the intersections among the nine key drivers of opportunity to health. While poverty *per se* was not specifically examined as one of the key drivers, it provides a useful neighborhood context summary measure of social and economic segregation. The nine key drivers were explored individually as an important means of unpacking underlying root causes. They share interconnected pathways, however, with notable intersections and correlations. As a consequence, the lived reality for District residents, in the neighborhoods where they live, learn, work, play, and age, is one where the drivers work together in multiple ways with compounding effect, including those of economic segregation and the concentration of poverty (**Figure 15**).

The visualization of population in poverty to the 51-statistical neighborhood level overlaid with life expectancy levels (**Figure 15**) is illustrative of the close correlation of socio-demographic status and length of life in the District. It also shows the correlation between where you live (place), and how long you live (life expectancy). Where individuals and families live, however, is not a simple reflection of individual choice or preference. It is the complex outcome of social, economic, and market forces, which include less visible but real and persistent structural ramifications such as historic and contemporary racial, economic, and residential segregation. Because poverty is a common effect of cumulative disadvantage, with multiple inequities acting on the same people and communities at the same time, it serves in effect, as a useful proxy indicator and summary measure of differential opportunities for health.

#### Differential Opportunities for Health in DC

Illustrative of differential opportunities for health in the District is the Selected Indicator Summary (**Table 1**) below. It shows a sample of indicator data, including one for each of eight key drivers. Note that the outdoor environment is omitted, because a comparable metric is not available to the statistical neighborhood level. Organized by 45 statistical neighborhoods (*Six omitted, per Figure 2, have life expectancy data suppressed*), and ranked by life expectancy at birth, the percentage of residents living in poverty is also included for reference. Color-coding highlights indicators that scored in the top 10 in green; and those in the bottom 10 in red. At a glance, it is clear that green dominates the upper region of the table, where the key drivers of opportunities for health are highest and clustered, and life expectancy is highest. Similarly, red is clustered at the bottom, where the key drivers of opportunities for health are low and life expectancy is lowest. This demonstrates interconnected pathways and the strength of cumulative impacts of opportunities for health along a continuum—both positive and negative.

Notes: * Ranked by Life E for 45 Statistical Neighba available data (6 omitted Opportunity Measure Sel Score in Top 10	<i>xpectancy at Birt thoods with a suppressed dat eted Indicator:</i> core in Bottom 1	h Tabl	le 1: Dif Sele indount	ferentia cted Indic st	al Oppol ator Sum <sub>Housin</sub> t	rtunities mary* <sup>Alansork</sup>	s for Hea	lith in D	Continuitie	133JES A
<b>Statistical</b> Neighborhoods *Ranked by Life Expectancy at Birth	Life Expectancy at Birth (2011-2015)	Residents (25 years or older) with high school diploma or higher (2011-2015) (%)	Residents (16 years or older) Unemp- loyed (2011-2015) (%)	Median Household Income (2011-2015) (%)	Household Gross Rent 35% or more of Income (2011-2015) (%)	Household Without a Car/Transit Dependent (%)	Household Receiving Public Assistance Income or SNAP ( <i>past</i> 12 months) (%)	Population with Public Insurance Coverage (%)	Age- adjusted Violent Deaths Rate - per 100,000 population (2011-2015)	Residents Living in Poverty (2011-2015) (%)
<ol> <li>Woodley Park</li> </ol>	89.4 years	97.8%	2.5%	\$139,744	25.8%	26.1%	2.5%	16.4%	9.9	6.6%
2. Cathedral Heights	88.8 years	96.8%	3.9%	\$90,124	44.5%	22.8%	0.8%	15.8%	5.1	15.8%
3. Kent /Palisades	88.4 years	97.9%	%6'5	\$161,252	Data Supp.	9.3%	0.6%	17.4%	7.4	9.3%
4. Tenleytown	87.3 years	98.7%	2.4%	\$136,641	39.0%	19.3%	2.1%	18.5%	1.1	4.5%
5. Forest Hills	87.2 years	99.1%	3.5%	\$113,269	33.7%	33.7%	1.3%	17.9%	13.0	9.2%
6. Georgetown East	86.9 years	98.9%	3.1%	\$132,021	33.9%	39.5%	1.0%	13.2%	5.7	10.3%
7. Barnaby Woods	86.5 years	98.9%	2.8%	\$200,031	Data Supp.	Data Supp.	0.0%	16.0%	2.6	1.7%
8. Capitol Hill	86.2 years	98.1%	3.2%	\$121,668	19.0%	28.1%	1.6%	13.7%	10.5	5.7%
9. Adams Morgan	85.1 years	95.9%	5.0%	\$96,194	27.0%	45.9%	3.6%	15.2%	8.4	7.2%
10. Shepherd Park	83.4 years	93.2%	11.7%	\$102,053	Data Supp.	Data Supp.	7.8%	35.9%	5.4	11.0%
11. Chevy Chase	83.3 years	94.1%	3.9%	\$115,697	Data Supp.	Data Supp.	5.5%	18.7%	2.1	8.5%
12. U Street/Pleasant	81.9 years	88.9%	7.2%	\$94,614	32.6%	42.8%	10.9%	20.0%	9.6	12.0%
13. Michigan Park	81.6 years	85.8%	16.2%	\$57,943	44.5%	19.6%	17.4%	37.9%	3.2	12.3%
14. Lamond Riggs	81.0 years	89.2%	15.2%	\$67,745	Data Supp.	22.6%	11.7%	46.1%	29.2	8.9%
15. Logan Circle/Shaw	81.0 years	90.7%	3.5%	\$94,043	29.4%	51.4%	5.4%	18.5%	16.9	10.9%
16. Brightwood	80.6 years	84.3%	8.7%	\$66,395	40.7%	20.2%	11.3%	40.8%	10.1	12.7%
17. Columbia Heights	79.8 years	79.4%	6.7%	\$70,554	35.8%	48.2%	18.1%	38.8%	17.8	16.7%

Table 1: Differential Opportunities for Health – Sample Indicator Summary (1 of 2)

15.5%	na.	32.1%	13.9%	9.0%	42.7%	\$53,889	8.3%	86.7%	78.8 years	United States
18.0%	19.5	35.1%	15.6%	36.4%	39.8%	\$70,848	9.6%	89.3%	79.0 years	District of Columbia
40.2%	65.4	70.1%	Data Supp.	51.3%	43.8%	<b>\$25,311</b>	18.1%	Data Supp.	68.4 years	45. St. Elizabeth's
37.3%	52.4	61.7%	43.7%	48.0%	59.6%	\$28,790	14.9%	83.2%	70.2 years	44. Historic Anacostia
28.5%	47.6	50.9%	31.0%	46.7%	48.4%	<b>\$36,655</b>	18.0%	79.9%	70.8 years	43. Trinidad
										Heights/Shipley
39.4%	20.02	62.3%	41.3%	47.2%	55.2%	\$28,711	26.8%	82.4%	71.8 years	42. Congress
36.7%	48.6	67.4%	53.9%	49.8%	50.4%	\$31,319	22.6%	81.7%	71.8 years	41. Douglass
							Supp.			Highlands
38.7%	36.3	Data Supp.	Data Supp.	44.7%	Data Supp.	<b>\$28,468</b>	Data	Data Supp.	72.4 years	40. Washington
29.2%	46.8	58.7%	39.4%	40.9%	39.9%	\$43,043	19.6%	84.4%	72.4 years	39. Marshall Heights
34.5%	31.5	57.8%	32.7%	38.7%	44.4%	\$37,771	16.6%	84.1%	72.5 years	38. Naylor/Hillcrest
26.2%	58.5	63.5%	32.7%	41.6%	48.8%	\$36,577	20.6%	80.7%	72.6 years	37. Lincoln Heights
34.1%	40.6	66.0%	37.5%	45.6%	57.4%	\$31,333	21.3%	79.4%	73.4 years	36. Eastland Gardens
39.6%	33.1	67.7%	43.4%	54.4%	52.1%	\$32,562	30.0%	82.9%	74.4 years	35. Bellevue
20.9%	57.1	55.7%	30.3%	33.1%	52.4%	\$47,486	16.3%	87.8%	74.5 years	34. Twining
30.6%	48.1	64.6%	36.7%	49.2%	57.9%	\$35,545	23.8%	81.6%	75.0 years	33. Fort Dupont
12.3%	21.2	24.3%	12.9%	26.6%	35.7%	\$87,146	8.6%	%6.06	75.8 years	32. Bloomingdale
										Lincoln/Gateway
19.0%	23.8	52.4%	22.3%	22.5%	41.6%	\$51,454	13.6%	81.3%	75.9 years	31. Fort
18.7%	38.3	48.5%	25.4%	28.3%	37.5%	\$61,739	14.8%	86.9%	76.7 years	30. Brentwood
16.3%	15.0	41.5%	13.6%	31.2%	Data Supp.	\$61,476	10.3%	86.7%	76.8 years	29. Brightwood Park
12.2%	24.5	28.3%	13.7%	25.1%	35.4%	\$91,073	8.3%	91.7%	77.3 years	28. Kingman Park
13.6%	14.9	31.8%	15.0%	26.4%	32.2%	\$92,617	8.8%	91.7%	77.5 years	27. Hill East
18.3%	18.7	33.1%	13.0%	52.9%	32.6%	\$82,789	5.3%	88.8%	77.9 years	26. Chinatown
10.4%	11.7	14.6%	2.4%	28.3%	31.5%	\$110,907	5.3%	94.5%	78.3 years	25. Union Station
13.5%	27.1	29.0%	11.2%	38.3%	31.4%	\$76,429	6.7%	93.5%	78.4 years	24. SW/Waterfront
13.2%	21.8	36.4%	17.7%	24.3%	43.9%	\$77,020	11.9%	86.3%	79.0 years	23. Petworth
11.5%	7.8	23.5%	10.6%	47.5%	34.7%	\$71,837	5.3%	89.4%	79.3 years	22. Mt. Pleasant
13.5%	11.9	31.2%	14.2%	47.8%	35.6%	\$82,241	8.2%	80.8%	79.4 years	21. S. Columbia Hgts.
29.1%	25.0	47.0%	%8.62	45.9%	43.4%	\$41,171	19.7%	83.8%	79.4 years	20. Edgewood
10.5%	23.5	36.3%	%9'6	Data Supp.	Data Supp.	\$85,947	13.8%	92.7%	79.4 years	19. Woodbridge
12.9%	14.8	35.9%	34.9%	29.4%	40.7%	\$75,848	8.0%	82.8%	79.8 years	18. 16 <sup>th</sup> St. Heights

Table 1: Differential Opportunities for Health – Sample Indicator Summary (2 of 2)

# **CONCLUSION:** Leveraging the Key Drivers to Promote Opportunities for Health

Opportunities for health are created primarily outside of the health care and traditional public health systems. Differential opportunities for health are the result of a much broader spectrum of societal structural and institutional norms, laws, policies, and practices. None is permanent, nor set in stone. With political will, all are amenable to change.

Because of their individual impact, but especially given their interconnectedness, the nine key drivers provide the main framework that collectively engineer how health is created outside of traditional health care and public health. Together, they illustrate the importance of *social and structural determinants,* which, intentionally or otherwise, produce persistently inequitable health outcomes. Overall, as a result of the interplay of multiple socio-demographic contextual factors, including the District's historic and contemporary segregated residential geography, years of life expectancy vary across the District's 51-statistical neighborhoods by 21 years. As shown, this patterning is repeated across all the social determinants of health, underscoring differential opportunities for health by income and place, as well as by race, as a root cause of inequities.

Equitable community health improvements will not be achieved by the health care system or public health working in a vacuum. Because 80% of community health outcomes are created outside of the traditional health care system, a multifaceted Health-In-All-Policies approach (APHA, 2013)<sup>46</sup> (CDC, n.d.)<sup>47</sup> is essential to improving the health of all District residents, including achieving health equity. The data and visualizations presented show the interconnectedness of things. They underscore the importance of working within and across all sectors, in simultaneous and complementary ways, to improve opportunities for health and achieve health equity. This is consistent with the Social Determinants of Health Strategy (SDH-I) in the DC Healthy People 2020 Framework (2016)<sup>48</sup>, which recommends "Increase multi-sector public, private, and non-profit partnerships to further population health improvement through a coordinated focus on the social determinants of health and health equity."

Finally, it should be noted that this report is a conversation starter. It must lead to collaborative action for change. The compelling advantage of promoting health equity by tackling underlying socioeconomic inequities across the key drivers of opportunities for health is that the benefits of building a **healthy community**<sup>49</sup> extend well beyond health. As an example, one model describes a healthy community as follows:

A healthy community is one that strives to meet the basic needs of all residents; it is guided by health equity principles in decision making; it empowers organizations and individuals through collaboration,[and] civic and cultural engagement for the creation of safe and sustainable environments. Vibrant, livable, and inclusive communities provide ample choices and opportunities to thrive economically, environmentally and culturally, but must begin with health.<sup>49</sup>

# Leveraging the Key Drivers Towards Equitable Opportunities

Figure 16: Collaborative Actions For Change/Multi-Sector Opportunity Levers



#### Looking Ahead: Collaborative Actions for Change

Equity-informed collaborative actions for change must be cognizant of how historical and contemporary policies, programs, and practices, including laws, produce inequities in health outcomes. Proactive multi-sector solutions are essential to meaningful transformational change. A conceptual framework for leveraging the key drivers towards equitable opportunities for health is presented in **Figure 16**.

#### **We must break out of silos, deploying the following collaborative actions for change\*:** \*These actions are based on a subset selected from Prevention Institute (2016)<sup>50</sup>

- Recognize that eliminating inequities provides a huge opportunity to invest in community.
   Inequity is not acceptable, and everyone stands to gain by eliminating inequity.
- Develop a multifaceted Health-In-All-Policies approach, in order to improve the health of all District residents, including achieving health equity.
  - Work across multiple sectors of government and society to make necessary structural changes. Such work should be in partnership with the community in pursuit of a more equitable society.
  - Understand and account for the historical forces that have left a legacy of racism and segregation, as well as structural and institutional factors that perpetuate persistent inequities. The only way to truly discard this legacy is to craft a new one, built on a shared vision for equity.
  - Adopt an overall approach that recognizes the cumulative impact of multiple stressors and focuses on changing community conditions, not on blaming individuals or groups for their disadvantaged status.
  - Acknowledge the cumulative impact of stressful experiences and environments. For some families, poverty lasts a lifetime and even crosses generations, leaving family members with few opportunities to make healthful decisions. This includes continued exposure to racism and discrimination that may in and of itself exert a great toll both on physical and mental health.
- Develop equity goals and measure and monitor the impact of social policy on health to ensure goals and improved outcomes are being accomplished. Monitor changes in health equity over time and place to help identify the impact of adverse policies and practices.

# References

- 1. DC Health. (2018). "Health Equity Report: District of Columbia 2018 Social and Structural Determinants of Health"
- 2. County Health Rankings. (2014). *Our approach: county health rankings model-2014.* University of Wisconsin. Retrieved from <u>http://www.countyhealthrankings.org/our-approach</u>
- 3. <u>California Newsreel. (2008). Unnatural causes:...is inequality making us sick? discussion guide.</u> <u>https://www.unnaturalcauses.org/assets/uploads/file/UC\_DiscussionGuide\_All.pdf</u>
- RWJF (Robert Wood Johnson Foundation). (n.d.). *Does where you live affect how long you live?* Retrieved from <u>https://www.rwjf.org/en/library/interactives/whereyouliveaffectshowlongyoulive.html</u>
- Jones, C.P., & Kumanyika, S. (2015). Racism and health: Naming and addressing racism—a primer. American Public Health Association. [Webinar] <u>https://www.apha.org/events-and-meetings/webinars/racism-and-health</u>
- Williams, D.R. and Jackson, P.B. (2005). Social sources of racial disparities in health. *Health Affairs* 24, no2, (2005):323-334. Retrieved from <u>file:///C:/Users/arnoa/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/HHP03N2K/</u> <u>Health%20Afairs%20-%20David%20Williams%20MarApr05.pdf</u>
- OSSE (DC Office of the State Superintendent of Education). (2016b). DC 2016 four-year cohort graduation rate, by subgroup. Retrieved from <u>https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/Adjusted%20Cohort%</u> <u>20Graduation%20Rate%20by%20Subgroup%202015-16.pdf</u>
- 8. RWJF. (2009). *Education matters of health*. Commission to Build a Healthier America. Retrieved from <u>http://www.commissiononhealth.org/PDF/c270deb3-ba42-4fbd-baeb-</u> 2cd65956f00e/Issue%20Brief%206%20Sept%2009%20-%20Education%20and%20Health.pdf
- 9. US Bureau of Labor Statistics (BLS). (2016, April). *A profile of the working poor, 2014*. US Department of Labor. Retrieved from <u>https://www.bls.gov/opub/reports/working-poor/2014/home.htm</u>
- 10. RWJF. (2013, January). *Stable jobs = healthier lives infographic.* Retrieved from <u>https://www.rwjf.org/en/library/infographics/infographic--stable-jobs---healthier-lives.html</u>
- 11. US Census Bureau. (2017). New american community survey statistics for income, poverty and health insurance available for states and local areas. [Press Release (CB17-157)]. Retrieved from. https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html
- 12. RWJF. (2013, January). *Stable jobs = healthier lives infographic*. Retrieved from <u>https://www.rwjf.org/en/library/infographics/infographic--stable-jobs---healthier-lives.html</u>
- 13. BLS. (2017, March). *Employee benefits in the United States*. Retrieved from <u>http://www.bls.gov/news.release/pdf/ebs2.pdf</u>

- 14. US Census Bureau. (2011-2015). *American community survey 5-year estimates*. Retrieved from <u>https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF</u>
- 15. RWJF. (2008, September). Where we live matters for our health: The links between housing and health. Retrieved from <u>http://www.commissiononhealth.org/PDF/e6244e9e-f630-4285-9ad7-16016dd7e493/Issue%20Brief%202%20Sept%2008%20-%20Housing%20and%20Health.pdf</u>
- 16. US Census Bureau. (2016T). *American housing survey* (AHS). US Department of Commerce. Retrieved from <u>https://www.census.gov/programs-surveys/ahs/data.html</u>
- 17. Lowe, E.T., Poubelle, A., Thomas, G., Batko, S., & Layton, J. (2016). *The US conference of mayors' report on hunger and homelessness*. U.S. Conference of Mayors: Washington, D.C.. Retrieved from <u>https://endhomelessness.atavist.com/mayorsreport2016</u>
- The Homeless Services Planning and Coordinating Committee. (2009). The 2009 count of homeless persons in shelters and on the streets in Metropolitan Washington. Metropolitan Washington Council of Governments. Retrieved from <u>www.mwcog.org/asset.aspx?id=pub-</u> <u>documents/zVZeVw20090513103355.pdf</u>
- Chapman, H. (2017, May). Homelessness in Metropolitan Washington: Results and analysis from the annual Point-in-Time (PIT) Count of persons experiencing homelessness. Metropolitan Washington Council of Governments. Retrieved from <u>https://www.mwcog.org/file.aspx?D=D8jiV5of6AkbJV%2Fjbhu792YnLGqUpAqhimeK8q5oSQY%3Dan</u> <u>dA=0%2BGsGWAyRiT8ngsv8pt1rq4YcUfPQ50gNKk%2Fc8K%2BPu4%</u>
- 20. The Community Partnership for the Prevention of Homelessness. (2017, May). *District of Columbia* 2017 Point-in-Time enumeration. Retrieved from <u>http://www.community-partnership.org/LiteratureRetrieve.aspx?ID=136856</u>
- 21. BLS. (2017). Consumer expenditures in 2015, April 2017, report 1066 https://www.bls.gov/cex/research\_papers/pdf/consumer-expenditures-in-2015.pdf
- 22. DC Office of Planning. (2016). Key demographic indicators: District of Columbia and the United States: American community survey 5-year estimates 2011–2015. <u>https://planning.dc.gov/sites/default/files/dc/sites/op/page\_content/attachments/Key%20Indicator</u> <u>s%202011-2015\_0.pdf</u>
- 23. Be Well Placer Community Dashboard. (2017, October). *Grocery store density.* Conduent Health Communities Institute. <u>http://www.placerdashboard.org/index.php?module=indicatorsandcontroller=indexandaction=view</u> <u>andindicatorId=250andlocaleId=268</u>
- 24. Economic Research Service (ERS), US Department of Agriculture (USDA). (n.d.). *Food access research atlas —District of Columbia*. Retrieved from <u>https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx</u>
- 25. Coleman-Jensen, A. Rabbitt, M.P., Gregory, C.A., and Singh, A. (2017, September). *Household food security in the United States in 2016* [Economic Research Report No. (ERR-237) 44 pp]. Retrieved <a href="https://www.ers.usda.gov/webdocs/publications/84973/err-237.pdf?v=42979">https://www.ers.usda.gov/webdocs/publications/84973/err-237.pdf?v=42979</a>

- US Census Bureau. (2011-2015). American community survey (ACS) 2011-2015, 5-year estimates (S2701), selected characteristics of health insurance coverage in the United States: Retrieved: 7.20.18
- 27. District of Columbia Health Systems Plan (2017) <u>https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20Health%20Systems%</u> <u>20Plan%202017\_0.pdf</u>
- Chapman, E.N., Kaatz, A., and Carnes, M. (2013). Physicians and implicit bias: how doctors may unwittingly perpetuate health care disparities. *Journal of General Internal Medicine*, 28(11), 1504-1510. <u>http://doi.org/10.1007/s11606-013-2441-1</u>
- Kutner, M., Greenberg, E., Jin, Y., and Paulsen, C. (2006). The health literacy of America's Adults: Results from the 2003 national assessment of adult literacy (NCES 2006–483). US Department of Education. Washington, DC: National Center for Education Statistics. <u>https://nces.ed.gov/pubs2006/2006483.pdf</u>
- Rikard, R., et al. (2016). Examining health literacy disparities in the United States: A third look at the National Assessment of Adult Literacy (NAAL). Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5022195/
- 31. Agency for Health Care Research and Quality (AHRQ). (2010). *Health literacy universal precautions toolkit*. <u>https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/healthliteracytoolkit.pdf</u>
- Nieuwenhuijsen, M. J., Kruize, H., Gidlow, C., Andrusaityte, S., Antó, J. M., Basagaña, X., ... & Garcia, J. (2014). Positive health effects of the natural outdoor environment in typical populations in different regions in Europe (PHENOTYPE): a study programme protocol. *BMJ open*, 4(4), e004951.
- 33. The Trust for Public Land. (2017). *ParkScore*. Retrieved from <u>http://parkscore.tpl.org/map.php?city=Washington,%20D.C.#sm.0000a0hjfi16jddsxt5654yqz5npi</u>
- 34. DC Department of Energy and Environment (DOEE). (n.d.) *Climate Ready DC –DRAFT* <u>https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service\_content/attachments/CRDC%20Draft</u> <u>%20for%20Public%20Comment--Web%20(Reduced)\_0.pdf</u>
- 35. DOH Center for Policy, Planning and Evaluation. (2017). *Violent deaths, District of Columbia, 2011–2015*. District of Columbia Department of Health. [Unpublished internal data source].
- 36. DOH Center for Policy, Planning and Evaluation. (2017). *Violent deaths, District of Columbia, 2011–2015*. District of Columbia Department of Health. [Unpublished internal data source].
- 37. Satcher, D. (1995). *Violence as a public health issue.* Retrieved from <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2359417/pdf/bullnyacadmed01034-0051.pdf</u>
- Prevention Institute. (2015). Adverse community experiences and resilience: A framework for addressing and preventing community trauma. <u>https://www.preventioninstitute.org/publications/adverse-community-experiences-and-resilience-framework-addressing-and-preventing</u>

- 39. DOH Center for Policy, Planning and Evaluation. (2017). *Infant mortality rates by maternal race and ethnicity, District of Columbia, 2005–2016*. District of Columbia Department of Health. [Unpublished internal data source].
- 40. DC Health. (2018 Unpublished). "Health Equity Report: District of Columbia 2018 Social and Structural Determinants of Health"
- 41. The Racial Dissimilarity Index (RDI) for the District of Columbia (2011-2015) was calculated using US Census data (2011-2015 ACS Estimates) applying the RDI formula from Iceland et al (2002) Racial and Ethnic Residential Segregation in the United States: 1980-2000: Census 2000 Special Reports. Retrieved from https://www.census.gov/prod/2002pubs/censr-3.pdf
- 42. Putzer, E., Samala, R., Little, D., Johnson-Clarke, F. (2014). The predictive power of place: effects of racial and economic segregation on differences in life expectancy at the neighborhood level-District of Columbia, 2009–2013. [Poster Presentation.] CSTE Annual Conference, Anchorage, AK. Retrieved from <u>http://www.cste.org/blogpost/1084057/260143/THE-PREDICTIVE-POWER-OF-PLACE-EFFECTS-OF-RACIAL-AND-ECONOMIC-SEGREGATION-ON-DIFFERENCES-IN-LIFE-EXPECTANCY-ESTIMATES-AT-THE-NEIGHBORHOOD-LEVEL--District-of-Columbia-2009-2013</u>
- 43. Turner et al. (2013). *The business case for racial equity*. <u>https://scholar.harvard.edu/files/davidrwilliams/files/the\_business\_case\_for\_racial\_equity\_10-23-</u> <u>13\_1\_0.pdf</u>
- 44. Smedley et al. (2002). Unequal treatment: Confronting racial and ethnic disparities in health care. Journal of the National Medical Association, 94(8), 666. Retrieved from <a href="http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2003/Unequal-Treatment-Confronting-Racial-and-Ethnic-Disparities-in-Health-Care/PatientversionFINAL.pdf">http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2003/Unequal-Treatment-Confronting-Racial-and-Ethnic-Disparities-in-Health-Care/PatientversionFINAL.pdf</a>
- 45. LaVeist et al. (2011). "Estimating the economic burden of health inequalities in the United States" https://www.ncbi.nlm.nih.gov/pubmed/21563622
- 46. APHA (Rudolph, L., Caplan, J., Ben-Moshe, K., and Dillon, L.). (2013). *Health in all policies: A guide for state and local governments.* Washington, DC and Oakland, CA: American Public Health Association and Public Health Institute. <u>https://www.apha.org/-/media/files/pdf/factsheets/health\_inall\_policies\_guide\_169pages.ashx?la=enandhash=641B94AF6\_24D7440F836238F0551A5FF0DE4872A</u>
- 47. CDC. (n.d.). Health in all policies. Retrieved from https://www.cdc.gov/policy/hiap/index.html
- 48. DC Health. (2016). *DC Healthy People 2020 framework*. <u>https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/FINAL%20DC%20HP20</u> <u>20%20Framework%20Report%205-23-16.pdf</u>
- 49. American Planning Association. (n.d.). *Healthy communities defined: The social determinants of health*. <u>https://www.planning.org/blog/blogpost/9124625/</u>
- 50. Prevention Institute. (2016). Countering the production of health inequities. Based on a subset of the selection from Prevention Institute (2016), page 54. <u>https://www.preventioninstitute.org/publications/countering-production-health-inequities-extended-summary</u>

# Introduction



Health Equity means that every person has an opportunity to achieve optimal health regardless of:	<ul> <li>Color of their Skin</li> <li>Level of Education</li> <li>Gender Identity</li> <li>Sexual Orientation</li> <li>Job They Have</li> <li>Neighborhood They Live In</li> <li>Whether They Have a Disability</li> <li>Language They Speak</li> </ul>

Figure 1.1: The Health Equity Ideal— Adapted from CDC 2013<sup>1</sup>

# **Chapter 1: Place Matters, and Context Counts**

"We may have come on different ships, but we are in the same boat now."

#### -Dr. Martin Luther King, Jr.

Washington, DC, is a World City, Our Nation's Capital, and a diverse community, one that approximately 700,000 residents call home (2018). This is an increase of nearly 20,000 since 2015, when the city's population of 681,170 included a third (37%) of residents born in the District of Columbia. About 86% are native residents of the United States; and 14% are foreign born.<sup>2</sup> The District is also at the center of the Washington DC Metropolitan Area, which by 2016 had the second-highest median income in the nation, at \$95,843, exceed only by the San Francisco Metropolitan Area, at \$96,667.<sup>3</sup>

Many indicators confirm that the District has bounced back faster than other US cities from the Great Recession, but a closer look indicates that in reality, we have experienced mixed results. American Community Survey data (ACS 2015; ACS 2016) for income, poverty, and health insurance underscore an uneven recovery. The US Census Bureau's September 2016 press release (CB 16-159) noted that the median income in the District was among the highest in the nation for 2015, but also that "five states and the District of Columbia had GINI indices (standard economic measure of income inequality), higher than the national average.<sup>4</sup> High income inequality continues in updated estimates for 2016.<sup>3</sup>

Research shows that income inequality is linked with opportunities to be healthy. The greater the gap between the richest and poorest residents, the greater the difference in population health outcomes. These and other differential opportunities are essentially gaps in health equity that directly impede the ability of District residents to attain optimal health (Figure 1.1). Health inequities are not inevitable, however, and the evidence also shows that everyone would gain if inequities were eliminated.

The Census Bureau noted in 2016 that the District registered a lower percentage of adults 18 to 34 years old living in their parents' homes (16.6%) of any state except North Dakota (14.1%). While taken in isolation this may suggest a very high standard of living and quality of life, it masks the relatively high cost of living and housing affordability challenges that District residents face as a community. The District's unique position as a national magnet to young professionals, for example, drives demand pressures on housing and rental markets. Nearly half (48.7%) of District households pay more than 30% of their income on housing costs (ACS 2011–2015); a number that has remained about the same through updated estimates (ACS 2012-2016).5

As shown in **Figure 1.2**, close to one in five (18%) of District residents live in poverty, which is higher than the national average (15.1%). Higher-than-national rates of poverty also impact vulnerable groups such as children, 25.8% (21.2% US average), and older adults, 13.6% (9.3% US average).<sup>6</sup>

High educational attainment is one of the points of pride for the District. Overall, 90% of adult residents are high school graduates or higher (87.0% US average).<sup>7</sup> Of adults 25 years or older, 55% had a bachelor's degree or above, compared with the national average of 30.3%. However, beyond these citywide averages, analysis to the neighborhood level (2011–2015) completed for this report, shows that comparable numbers of adults with bachelor's degrees or higher stood close to 90% for some statistical neighborhoods such as Capitol Hill, versus just 10% or lower for others, such as Benning.

#### Figure 1.2: DISTRICT OF COLUMBIA ACS 2017 Population Estimate, and 2012-2016 ACS 5-Year Estimates<sup>6, 7</sup> **Population: 2017 Population Estimate** 693, 973 • 2012-2016 ACS 5-Year Population Estimate 659,009 • Median Age (ACS 2012-15) **33.8** Years • Educational Attainment: ACS 2012-2016 **High School Graduate or Higher** 90.0% (US= 87.0%) • **Bachelor's Degree** • 23.4% **Graduate or Professional Degree** 32.0% • Income and Earnings: ACS 2012-2016 Median Household Income • \$72,935 (US = \$55,322)Mean Earnings (All) • \$90,345 **Mean Female Earnings** • \$81,022 **Mean Male Earnings** \$99,324 Employment Status: ACS 2012-2016 **Pop. In Labor Force** (16 Years and Over) • 69.4% (US = 63.5%)Pop. Unemployed (16 Years and Over) 6.0% (US = 4.7%)Health Insurance Coverage: ACS 2012-2016 **All Residents With Health Insurance** • 94.8% (US= 88.3%) **Black Residents** 94.4% (US= 86.3%) • White Residents 97.1% (US= 89.6%) • **Hispanic Residents** • 87.1% (US= 88.3%) Poverty: ACS 2012-2016 Individuals in Poverty • 17.9% (US= 15.1%) **Families in Poverty** • 14.1% **Children in Poverty** • 25.8% (US= 21.2%) Adults 65 Years and older in Poverty • 14.4% (US= 9.3%)

These data illustrate wide gaps across the city that are related to health. Simply put: Place matters, and context counts in determining opportunities for health and wellness and, therefore, achieving health equity. Where you live is a strong predictor of both the quality and quantity of your life. It is not simply a function of education and income or what housing and neighborhood options are available and affordable. Place *(where* you live) impacts total life expectancy, healthy years of life, and the opportunity to attain optimal health and sustain wellness. Research shows that your zip code may be more important than your genetic code for health.<sup>8</sup>

#### Purpose

Based primarily on US Census (ACS 2011–2015) data, this report provides a baseline assessment of health equity and opportunities for health in the District of Columbia. Using a social and structural determinants of health approach, population health data on the leading causes of death, and projected life expectancy at birth is combined with social and economic data and Geographic Information Systems (GIS) tools and methods, to develop a snapshot of differential opportunities for health across DC. While a high-level summary for each of the eight wards is included, emphasis in this report has been placed on highlighting health outcomes, and the socioeconomic and demographic contexts for health at the statistical neighborhood level across the District.

#### What Drives Health?

Within the District's densely populated 61 square miles, across relatively short distances, differences in social and economic circumstances drive similar differences in population health outcomes. This demonstrates that even though an estimated 95% of District residents have health insurance (tied for second-highest in the nation in 2016), access to health care alone, while necessary, is not sufficient to promote health and assure health equity. The evidence shows that overall, clinical care drives only 20% of population health outcomes, as shown in **Figure 1.3** below.<sup>9</sup> By one measure of population health across the District, estimated life expectancy at birth across the 51-statistical neighborhoods used in this report shows a difference of nearly 21 years between the highest and lowest. These health outcomes differences start from a high of 89.4 years through a low of just 68.4 years.



80%

of what influences your life expectancy happens outside of the healthcare system

#### Figure 1.3: What Drives Health: Clinical Care and Other Non-Clinic Determinants of Health

#### Social Determinants of Health:

This inaugural **Health Equity Report for the District of Columbia (DC HER) 2018** uses an overarching framework on social determinants of health consistent with the County Health Rankings Model <sup>9</sup> upon which the diagram above is based. It is further informed by the following six evidence-based Health Equity insights from public health literature and practice:

#### Health Equity 101: Six (6) Key Insights

- Health is more than health care<sup>10</sup>
- Health inequities are neither natural nor inevitable<sup>10</sup>
- Your zip code may be more important than your genetic code for health<sup>8</sup>
- The choices we make are shaped by the choices we have<sup>10</sup>
- Structural racism acts as a force in the distribution of opportunities for health<sup>11</sup>
- All policy is health policy<sup>12</sup>

# References

- Centers for Disease Control and Prevention (CDC). (2013). A practitioner's guide to advancing health equity: Community strategies for preventing chronic disease. <u>https://www.cdc.gov/nccdphp/dch/pdf/HealthEquityGuide.pdf</u>
- Phillips, J. (2017). District of Columbia population and housing profile: 2011–2015 ACS –year estimates. Office of Planning: DC State Data Center. <u>https://planning.dc.gov/sites/default/files/dc/sites/op/page\_content/attachments/DC%20Popul</u> <u>ation%20and%20Housing%20Profile%202015.pdf</u>
- 3. US Census Bureau. (2017). *New American community survey statistics for income, poverty and health insurance available for states and local areas.* [Press Release (CB17-157)]. Retrieved from <a href="https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html">https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html</a>
- 4. US Census Bureau. (2016). *New American community survey statistics for income, poverty and health insurance available for states and local areas.* [Press Release (CB16-159)]. Retrieved September 2016 (*no longer available*)
- 5. US Census Bureau. (2011-2015). *American community survey, American fact finder, selected housing characteristics.* (Table DPO4). Retrieved July 2018
- 6. U.S. Census Bureau. (2012-2016). *American community survey, American fact finder, selected economic characteristics.* (Table DPO3). Retrieved July 2018
- 7. US Census Bureau. (2012-2016). *American community survey, American fact finder, selected characteristics, health insurance coverage.* (Table S2701) Retrieved July 2018
- RWJF (Robert Wood Johnson Foundation). (n.d.). *Does where you live affect how long you live?* Retrieved form <u>https://www.rwjf.org/en/library/interactives/whereyouliveaffectshowlongyoulive.html</u>
- Remington, P.L., Catlin, B.B., & Gennuso, K.P. (2015). The county health rankings: rationale and methods. University of Wisconsin, Population Health Institute. <u>https://www.ncbi.nlm.nih.gov/pubmed/25931988</u>
- 10. <u>California Newsreel. (2008)</u>. <u>Unnatural causes:...is inequality making us sick? discussion guide</u>. <u>https://www.unnaturalcauses.org/assets/uploads/file/UC\_DiscussionGuide\_All.pdf</u>
- 11. Jones, C.P., & Kumanyika, S. (2015). *Racism and health: Naming and addressing Racism—a primer.* American Public Health Association. [Webinar.] <u>https://www.apha.org/events-and-meetings/webinars/racism-and-health</u>
- Williams, D.R., & Jackson, P.B. (2005). Social sources of racial disparities in health. Health Affairs 24, no2, (2005):323-334. Retrieved from <u>file:///C:/Users/arnoa/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/HHP03</u> <u>N2K/Health%20Afairs%20-%20David%20Williams%20MarApr05.pdf</u>



# Part 1: Frameworks and Background

Achieving health equity requires a deep appreciation of **how health itself is created**. More specifically, a clear understanding of why despite the best efforts of public health and the healthcare system health and other inequities persist and are continually reproduced. Understanding how **social, economic, and structural factors** drive community health requires unpacking to clarify linkages. Key concepts and terminology help connect the dots between health equity, the social determinants of health, and opportunities to be healthy in the District.

# **Chapter 2: Frameworks—Key Concepts and Terminology**

# Connecting the Dots: Health Equity, Social Determinants, and Opportunities for Health

Achieving health equity requires a deep appreciation of how health itself is created. More specifically, a clear understanding of why—despite the best efforts of healthcare and public health to date—health and other inequities not only exist, but also persist, and are continually reproduced. This report uses an evidence-based approach to health equity, social determinants, and the creation of opportunities for health. Understanding these key relationships requires clarity on terminology and technical definitions.

#### Health and Health Equity

The World Health Organization (WHO) in 2006<sup>1</sup> defined **health** as, "a state of complete physical, mental and social well-being and not merely the absence of disease



"Health inequities

are neither natural

nor inevitable."

or infirmity." This is the gold standard. It informs the theory and practice of public health and drives the contemporary vision for health equity. The WHO conceptualization of health informs our focus on social and emotional wellness in addition to physical illness, medical models, and health care-centric solutions.

The definition of **health equity** in the U.S. is described as "the attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities" (CDC, 2010).<sup>2</sup> The deliberate reference to those that are reflective of past wrongs and injustices recognizes the importance of history in contemporary context. In order to assure that everyone is able to achieve their optimal level of health, communities must proactively address avoidable

inequalities, especially those that are not only unfair, but also unjust. This definition, incorporated into the Department of Health and Human Services "Healthy People 2020" (CDC, 2010),<sup>2</sup> established health equity as a national strategic goal and priority.

Achieving health equity requires a focus on promoting

equitable outcomes, rather than simply providing equality of opportunity. This important difference in perspective is illustrated in **Figure 2.1**.

The national pivot to health equity has been informed by a mounting body of evidence, which shows that despite decades of emphasis on measuring and documenting health disparities in and of itself, has done little to stem their persistence. The landmark Institute of Medicine "Unequal Treatment" (Smedley et al., 2002)<sup>3</sup> report showed that even with the same health insurance status, while correcting for age, income, and severity of condition at diagnosis, and other factors, racial and ethnic minorities consistently received inferior treatment, lower standards, and lesser quality of healthcare.



Figure 2.1: Equality versus Equity Perspective

**Health disparities,** defined as "differences in health outcomes and their determinants between segments of the population as defined by social, demographic, environmental, and geographic attributes," are primarily a measure of difference in health outcomes by socio-demographic group, without necessarily speaking to either their root causes or their potential solutions (Truman et al., 2011).<sup>4</sup> Similarly, the term **health inequalities**, used interchangeably with health disparities, is more often used in the scientific and economic literature to refer to summary measures of population health associated with individual or group-specific attributes (e.g. income, education, or race/ethnicity) (Truman et al., 2011).

**Health inequities** are "a subset of health inequalities that are modifiable, associated with social disadvantages, and considered ethically unfair"—and are therefore unjust (Truman et al., 2011). It recognizes structural, institutional, and implicit bias within the healthcare system and across wider society—including structural racism (based on the social construct of "race"<sup>1</sup>)—as the root causes of health and health care disparities.

<sup>&</sup>lt;sup>1</sup> Longstanding but persistent false assumption that skin color and other visible physical characteristics associated with "race" are evidence of real genetic differences, in a biological taxonomic sense, and the root cause of health and other disparities. The scientific evidence is clear, however, not only that humans are genetically homogeneous, but also that observable human phenotypic expressions are superficial external traits that are no more important than eye color or eye shape.

"The choices we make are shaped by the choices we have." Powell (2007) defined **structural racism** as the macro-level systems, social forces, institutions, ideologies, and processes that interact with one another to generate and reinforce inequities among racial and ethnic groups.<sup>5</sup> Structural racism examines racial and ethnic impacts that stem from a history of disenfranchisement and

policies that favored those in power. This emphasizes the importance of socio-ecological levels at which racism may affect racial and ethnic minorities and people of color and do not require the actions or intent of individuals (Gee and Ford, 2011).<sup>6</sup> An example is the history of federal housing policies, including redlining, that not only denied home ownership to African Americans, but physically destroyed many black neighborhoods under the policies of urban renewal (Corburn, 2009).<sup>7</sup>

"Structural racism acts as a force in the distribution of opportunities for health." More recently, APHA Past President Camara Jones, MD, PhD, MPH, has built on this concept related to racism and health as follows:

"Racism is a system of structuring opportunity and assigning value based on the social interpretation of how one looks (which is what we call "race"), that unfairly

disadvantages some individuals and communities, unfairly advantages other individuals and communities, and saps the strength of the whole society through the waste of human resources."<sup>8</sup>

Therefore, although "race" has no basis in modern biology, it maintains an important social reality, with consequences in contemporary contexts—globally, nationally, and across the nation's capital.

#### Population Health: Social and Structural Determinants

At the community level, social conditions such as education, income, employment, housing, transportation, safety, and access to nutritious food have a larger impact on population health than do genetic endowment, lifestyle choices, or access to health care services. These attributes are known as the social determinants of health. The **social determinants of health** refer to the "conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Conditions (e.g., social, economic, and physical) in the various environments and settings (e.g. school, church, workplace, and neighborhood) have been referred to as 'place.'"

(US Department of Health and Human Services, n.d.).<sup>9</sup> Notably, this definition deliberately identifies "living environments" and "place" with reference to population health outcomes. Absent this detail, the term is often misconstrued as referencing the socio-demographic characteristics of individuals as explanatory causes of individual health status.

The University of Wisconsin "County Health Rankings Model" (2014),<sup>10</sup> identified a total of four major **determinants of population health** categories for the United States (incorporated into **Figure 2.2**). As shown within this evidence-based model, clinical care, which accounts for 20% of the determinants of health, has an impact primarily in terms of access to health care and the quality of care provided. An estimated 30% is attributed to health behaviors which, as noted earlier, is impacted by other social determinants. Social and economic factors account for the largest share, at 40%. Some examples highlighted include education, employment, income, family and social support, and community safety. The remaining 10% is attributable to the physical environment, including environmental quality (e.g. air and water) and the built environment (e.g. housing and transportation).

The connection of the social determinants to the health of populations is best understood through geographic or community-based outcomes. **Population health** is defined as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group. These groups are geographic populations such as a nation, (cities), or communities, but can also be other groups such as employees, ethnic groups, disabled persons, prisoners, or

other defined groups. The health outcomes of such groups are of relevance to policy makers in both the public and private sectors." (Kindig and Stoddart, 2003).<sup>11</sup>

At the population health level, the evidence shows that social and economic factors work both individually and in combination to influence health behaviors, such as smoking, drinking and exercise (Pampel et al., 2011).<sup>12</sup> Health "Your zip code may be more important than your genetic code for health."

behaviors, therefore, are not truly independent variables devoid of social and economic context. They include the entirety of the living environments where we live, learn, work, and play as critical contexts for health. In sum, half of population health outcomes have nothing to do with either clinical care or health behaviors (**Figure 2.2** below).

The overwhelming majority—80% of what drives population health outcomes—happens outside of the health care system.

POPU	History		
Clinical Care	<ul><li>Access to care</li><li>Quality of Care</li></ul>	20%	Values S
Health Behaviors	<ul> <li>Tobacco Use</li> <li>Diet &amp; Exercise</li> <li>Alcohol &amp; Drug Use</li> <li>Sexual Activity</li> </ul>	30%	Public RUCTURAL
Social & Economic Factors	<ul> <li>Education</li> <li>Employment</li> <li>Income</li> <li>Family &amp; Social Support</li> <li>Community Safety</li> </ul>	40%	Governance Social Policy
Physical Environment	<ul> <li>Environmental Quality</li> <li>Built Environment</li> <li>Housing &amp; Transport</li> </ul>	10%	Economic System

Figure 2.2: The Social and Structural Determinants of Population Health

Social determinants such as income, car and home ownership, or health insurance rates are useful tools, serving as indicators of relative material circumstances or quality of life outcomes. However, these indicators are to be understood as symptoms and not the root causes of health inequity. From this vantage point, the underlying drivers of the social determinants themselves, or "the causes of the causes," are the broader structural determinants, which are embedded both in the historical and contemporary "social and economic arrangements of society" (Marmot, 2011).<sup>13</sup> It is these structural determinants—including history, laws, public policy, culture, economic system and social conditions—that really drive the distribution of opportunities for health between more and less advantaged groups (World Health Organization, 2007).<sup>14</sup>

The **structural determinants of health** are the combination of broad political, economic, and social systems—spatial and temporal—including historical and contemporary culture, ideologies and laws, and social and economic policies, norms, and practices. These overarching structural frameworks, or macro systems, collectively and cumulatively create the contemporary living contexts for population health. They are largely beyond individual control (World Health Organization, 2007).

The underlying structural determinants drive contemporary policy and practice and, therefore, opportunities for health, including health inequities and the disparate outcomes that result. Seen from this vantage point, it is more clear that all policy that affects health is health policy; and that inequalities in health are created by inequalities in society. Ultimately, policies, programs, and practices have both intended and unintended impacts on health opportunities

# "All Policy is health policy."

and outcomes, such that all policies are health policies. As recommended by Williams et al., (2005),<sup>15</sup> there is a need to rethink what constitutes health policy; because of the breadth of social determinants of health, policies in social domains far removed from traditional health policy have decisive consequences for individual and population health.

# References

- 1. World Health Organization (WHO). (2006, October). *Constitution of the World Health Organization*. Retrieved from <u>http://www.who.int/governance/eb/who\_constitution\_en.pdf</u>
- U.S. Centers for Disease Control and Prevention (CDC). (2010). *Healthy people 2020.* Last updated, October 14, 2011. Retrieved from <a href="https://www.cdc.gov/nchs/healthy\_people/hp2020.htm">https://www.cdc.gov/nchs/healthy\_people/hp2020.htm</a>
- Smedley et al. (2002). Unequal treatment: confronting racial and ethnic disparities in health care. Journal of the National Medical Association, 94(8), 666. Retrieved from <u>http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2003/Unequal-</u> <u>Treatment-Confronting-Racial-and-Ethnic-Disparities-in-Health-Care/PatientversionFINAL.pdf</u>
- Truman, B. I., Smith, K. C., Roy, K., Chen, Z., Moonesinghe, R., Zhu, J., ... & Centers for Disease Control and Prevention (CDC). (2011). Rationale for regular reporting on health disparities and inequalities—United States. *MMWR Surveill Summ*, 60(Suppl 01), 3-10. Retrieved from <u>https://www.cdc.gov/mmwr/preview/mmwrhtml/su6001a2.htm</u>
- Powell, John A. (2007). "Structural Racism: Building upon the insights of John Calmore." 86 N.C. L. Rev. 791 <u>https://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=2637andcontext=facpubs</u>
- Gee, G. C., & Ford, C. L. (2011). Structural racism and health inequities: old issues, new directions. *Du Bois Review : Social Science Research on Race, 8*(1), 115–132. http://doi.org/10.1017/S1742058X11000130
- Corburn, J. (2009). Toward the healthy city: People, places and the politics of urban planning. Boston. The MIT Press. Retrieved from <u>https://mitpress.mit.edu/sites/default/files/titles/content/9780262513074\_sch\_0001.pdf</u>
- Jones, C.P., and Kumanyika, S. (2015). the impact of racism on health and well-being of the nation- racism and health: Naming and addressing racism—a primer. American Public Health Association. [Webinar.] <u>https://www.apha.org/events-and-meetings/webinars/racism-andhealth</u>
- US Department of Health and Human Services (HHS). (n.d.). Social determinants of health. Office of Disease Prevention and Health Promotion. <u>https://www.healthypeople.gov/2020/topicsobjectives/topic/social-determinants-of-health</u>
- 10. University of Wisconsin. (2014). *Our approach: County health rankings model-2014.* University of Wisconsin. Retrieved from <u>http://www.countyhealthrankings.org/our-approach</u>
- 11. Kindig, D., and Stoddart, G. (2003). What is population health? *American Journal of Public Health*, *93*(3), 380-383. DOI:10.2105/AJPH.93.3.380
- 12. Pampel, Fred C., et al. (2011). *Socioeconomic disparities and health behaviors*. <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3169799/</u>

- Marmot, M. (2011). Social determinants of health: What doctors can do. British Medical Association (BMA). Retrieved from <u>https://www.bma.org.uk/-</u> /media/.../improving%20health/socialdeterminantshealth.pdf
- 14. World Health Organization (WHO). (2007). A conceptual framework for action on the social determinants of health. Commission on Social Determinants of Health. Retrieved from <a href="http://www.who.int/social\_determinants/resources/csdh\_framework\_action\_05\_07.pdf">http://www.who.int/social\_determinants/resources/csdh\_framework\_action\_05\_07.pdf</a>
- Williams, D.R. & Jackson, P.B. (2005). Social sources of racial disparities in health. Health Affairs 24, no2, (2005):323-334. Retrieved from <u>file:///C:/Users/arnoa/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/HHP03</u> <u>N2K/Health%20Afairs%20-%20David%20Williams%20MarApr05.pdf</u>

## **Chapter 3: Methodology**

The data and framework presented in the **Introduction** and **Chapter 2**, underscore the importance of place and context. With this lens, health equity can be better understood and dissected by framing social and structural determinants of health in relation to geographic areas. Throughout this **Health Equity Report for the District of Columbia (DC HER) 2018**, data are presented in various geographic configurations and formats to highlight local differences in population health outcomes.

#### Population Data and Data Sources

This report includes data from the US Census Bureau American Community Survey (ACS), as well as District of Columbia Department of Health (DC Health) data, including Vital Statistics and Behavioral Risk Factors Surveillance System (BRFSS). Additional supporting data were also utilized from the District of Columbia Office of Planning State Data Center and the Office of the Chief Technology Officer (OCTO). Data are organized by social, economic, demographic, and health outcome factors including race, ethnicity, education, and income to illustrate the relationship of social determinants and health outcomes.

#### Data Organization and Visualization

Proximal Neighborhood Groups (PNGs; also referred to as statistical neighborhoods or neighborhoods) are utilized here for analytical reliability because they help connect US Census social determinants and population health outcome data to local places and people. The DC Office of Planning (OP) has identified in excess of 100 discrete District neighborhoods and has divided them into 46 neighborhood clusters. Distinct from traditional neighborhood clusters, the statistical PNGs used in this report were created by combining whole census tracts with boundaries that fall along census tract lines, an important delineation when displaying data based on the Census and other health driver data. Analyzing data at smaller levels also helps to elucidate the nuance of local outcomes and inform community-level decision-making. The report organizes data primarily by the 51-statistical neighborhoods (PNGs) referenced above, but also uses and references District of Columbia wards (8). Data is visualized using maps as well as spatial analyses.<sup>2</sup> Chapter 6 of the report provides high-level ward summaries and quick notes for reference.

#### Statistical Neighborhood Groups and Names

Maps of the 51-statistical PNGs are used throughout the report to display population level data. Each has been assigned a number (1 through 51), but has also been named, for convenience, based on "proximity of place." This provides readers with a general sense of where the statistical neighborhoods are located, which is considered easier than using numerical references only. The names were devised based on nearest neighborhoods to the center point of each PNG. In reading the report, it is important to keep in mind that the names being used are distinguishing labels only, are not representative of official neighborhood boundaries, and do not capture the official or lived reality of how residents themselves define their neighborhoods or communities. **Figure 3.1** and **3.2** provide maps of the PNGs<sup>1</sup> with reference numbers and names; the latter map includes wards,<sup>2</sup> numbered 1 through 8. Notes on how to read the maps throughout the body of the report are provided in **Figure 3.3**.

<sup>&</sup>lt;sup>2</sup> Thematic maps are not analyzed for differences of statistical significance and provide visually comparisons only. Caution should be applied with interpretation of thematic maps. Data has been suppressed due to high margin of error values (greater than .10)

#### Proximal Neighborhood Groups (PNG): Reference Names

Figure 3.1: Statistical (PNG) Neighborhood Reference Names





#### Proximal Neighborhood Groups (PNG) and Ward Overlays: Names and Numbers

Figure 3.2: Statistical (PNG) Neighborhood Reference Names and Numbers

### DISTRICT OF COLUMBIA WARDS AND (PROXIMAL) NEIGHBORHOOD GROUPS


rates or

there is

### Guide to Reading the Health Equity Report Maps Figure 3.3: How to Read Report Maps

The following is a brief description of the different components of the maps appearing in this volume.

Note: Thematic maps are not analyzed for differences of statistical significance, and provide visually comparisons only. Caution should be applied with interpretation of thematic maps. Data has been suppressed due to high margin of error values (greater than .10)



map is detailed here.

## References

- Putzer, E., Samala, R., Little, D., & Johson-Clarke, F. (2014). The predictive power of place: effects of racial and economic segregation on differences in life expectancy at the neighborhood level-District of Columbia, 2009–2013. [Poster presentation.] CSTE Annual Conference, Anchorage, AK. Retrieved from <u>http://www.cste.org/blogpost/1084057/260143/THE-PREDICTIVE-POWER-OF-PLACE-EFFECTS-OF-RACIAL-AND-ECONOMIC-SEGREGATION-ON-DIFFERENCES-IN-LIFE-EXPECTANCY-ESTIMATES-AT-THE-NEIGHBORHOOD-LEVEL--District-of-Columbia-2009-2013
  </u>
- 2. Office of the Chief Technology Officer (OCTO). (2012). *Wards from 2012.* DC Geographic Information System (DC GIS). Retrieved from <u>http://opendata.dc.gov/datasets/capital-bike-share-locations</u>



# **Part 2: Demographics and Population Health**

The District's demographic and community health outcomes answer two questions for Washingtonians: **Who are we?** and **How healthy is our city?** In this section the demographic makeup of the District's population is presented, including population health outcomes. These key reference points will inform the discussion of the broad context for residents' collective opportunities for health.

# **Chapter 4: Resident Demographics**

#### Introduction:

With its growing population, the District of Columbia is home to a diverse populace. This chapter provides an overview of the total population of the District dissected by key demographic characteristics and their geographic distribution and concentrations by both ward and neighborhood group.

District of Columbia Demographic Profile 2000 and 2015						
Characteristics	2000	2015	Percent Change (%)			
Total Population	572,059 (100%)	647,484 (100%)	13.2%			
Gender						
Female	302,693 (52.9%)	340,810 (52.6%)	12.6%			
Male	269,366 (47.1%)	306,674 (47.4%)	13.9%			
Race						
Black or African American Alone	305,427 (52.3%)	310,678 (48.0%)	1.7%			
White Alone	194,910 (33.4%)	230,489 (35.6%)	18.3%			
Asian Alone	20,160 (3.4%)	23,494 (3.6%)	16.5%			
American Indian Alone	1,269 (0.2%)	1,265 (0.2%)	3%			
Native Hawaiian and Pacific Islander Alone	362 (0.1%)	218 (<0.1%)	-39.8%			
Other Race	1,722 (0.3%)	1,790 (0.3%)	3.9%			
Two or More Races	9,249 (1.6%)	13,747 (2.1%) 48.6%				
Ethnicity						
Hispanic or Latino	51,301 (8.8%)	65,803 (10.2%)	22.1%			
Place of Birth						
Foreign Born	73,561 (12.9%)	91,588 (14.1%)	24.5%			

Table 4 1. District of	Columbia	Demographic Pr	ofile 2000	and 2015	Compared
Table 4.1. District Of	Culuinnia	Demographic Pi	01116 2000		Compared

**Data Sources:** US Census Bureau. (2001). *Nativity, Citizenship, Year of Entry, and Region of Birth: 2000- Census 2000 Summary File 4;* US Census Bureau. (2016). *2011-2015 American Community Survey 5-Year estimates.* 

### Population Profile: Numbers and Distribution, 2011–2015 (5-Year) Estimates

#### **GROWTH AND CHANGE:**

As **Table 4.1** illustrates, the District's population grew by 13.2% between 2000 and 2015, to a total of 647,484 residents. In 2015, nearly 70% of new residents of all races and income ranges were millennials. Most had relocated from other states, and 42% had a bachelor's degree or higher.<sup>1</sup>

Since then, the District's population growth has continued apace, with 680,000 residents as of July 2016 (ACS 1- year estimate). This high net growth rate averages an additional 1,000 new residents per month, reaching 700,000 in early 2018.

Notable among the demographic shifts between 2000 and 2015, is the District's Black/ African-American population falling below 50% from a high of 70% in the 1970s and 1980s.<sup>1</sup>

Although the Black population continues to grow (1.7% net), other racial groups have grown at a greater rate such that Black residents are still the largest demographic group in DC, but no longer comprise the majority. Notable, too, is the growing foreignborn population, the majority of whom



Figure 4.1: DC Total Population by Ward (2011-2015) ACS Estimates

Source: US Census Bureau (2016) American Community Survey 2011-2015, 5 Year Estimates.



**Figure 4.2: DC Population Density by Ward** Source: US Census Bureau (2016) American Community Survey 2011-2015, 5 Year Estimates.

are from Latin America (43%), followed by Asia (19.5%), Europe (18.5%) and Africa (15.5%).

The most recent data shows that, regardless of race, just over a third (37%) of District residents were born in the city (DC Office of Planning, State Data Center, 2017).<sup>2</sup>

As shown in **Figures 4.1** and **4.2**, both total population and population density vary across the eight wards. Ward 6 has the largest populace, while Ward 7 has the fewest residents. Ward 1 is by far the most densely populated. Ward 8 has the lowest population density.

### Age and Sex: 2011–2015 (5-Year) Estimates

The median age of District residents is 33.7 years, about four years younger than the US average of 37.6 years. A large majority, about two-thirds (66.8%) of residents, are adults in prime working age (18 to 64 years). Children and young people under the age of 18 years make up 17.2%, and adults over 65 years represent 11.3%. Young children under age 5 make up 6.2%, nearly equal to the



Figure 4.3: DC Population Pyramid – Population by Age and Sex

national average (6.3%). However, as shown in the two age distribution maps below (**Figures 4.5a** and **4.5b**), children under 5 are not evenly distributed across the eight wards, nor are adults over age 65 years. Young children are especially concentrated towards the east and south while older adults are concentrated mostly in the north and northwest.

### Households and Family Structure, 2011-2015 (5-Year) Estimates<sup>2</sup>

The most recent census data show that there are a total of 273,400 resident households in the District of Columbia. A plurality (43%) are people living alone. Married couple families make up 23%, while other families make up 19.5%. Other non-family households make up the remaining 12.7%, as shown in **Figure 4.4**.

An estimated 8% of families are headed by a woman (with no partner/husband present) and a child or children under 18. These families are included as other family households in the chart below.

Together, households made up of people living alone (43%), and other non-family households (12.7%), which includes people who are not related to the householder, represent the majority (57%) of all households in the District.

Additional factors about the District's household and family structures, from the Census information:

- 22% of all households had one or more people under the age of 18
- 20% of all households had one or more people age 65 or older
- Among those 15 years and older, 30% of men and 25% of women were married
- Over 55% of all people in the District have never been married (57.7% for men and 55.4% for women)
- Women in the District are more likely to be divorced, or widowed, than are men
- 11,300 grandparents lived with their grandchildren age 18 or younger. Of these, 38% had financial responsibility for their grandchildren.



Figure 4.4: Household Types in the District – 2011-2015 Source: 2011–2015 American Community Survey (ACS) 5-Year Estimates DC State Data Center (May 2017) Briefing Report

### Race and Ethnicity: Concentrations and Distribution, 2011-2015 (5-Year) Estimates

The racial and ethnic makeup of Washington, DC, has steadily changed over the years. As noted earlier, while the Non-Hispanic Black population grew by 1.7% from 2000 to 2015, other populations grew at a faster rate. Significant growth in the Non-Hispanic White population (18.3%) was exceeded by growth in the Hispanic population (22.1%). Additionally, the foreign-born population has increased by 24.5% since 2000. This population is heavily concentrated in Ward 4 (23%), Ward 1 (22.2%), Ward 2 (21.3%), and Ward 3 (19.4%). This trend is not reflected in Wards 7 and Ward 8. (US Census Bureau 2001, and DC Office of Planning, State Data Center, (Phillips, J) 2017).

### **Resident Demographics: Age and Place, by Ward**

Figure 4.5: Population Age Under 5 and Over 65



Figure 4.5a: Percentage of Children Under Age 5, by Ward



Figure 4.5b: Percentage of Adults Over Age 65, by Ward

**Figure 4.6** shows the geographic distribution by race and ethnicity for the four largest groups— Non-Hispanic White; Non-Hispanic Black; Hispanic; and Non-Hispanic Asian populations by neighborhood group. Collectively, the maps illustrate geographic patterning by race and ethnicity across the District. In 2015, Non-Hispanic whites made up 35% of District residents. However, as shown in Map 1, they are concentrated to the north and west of the city, where the racial composition of many neighborhoods indicate 61% to 78% white residents. In many northeast neighborhoods, Whites make up about a third of residents, with the number falling to less than 5% of the population of neighborhoods to the south and southeast.

Black or African-American residents made up the largest group in the District in 2015 (48%). As presented in Map 2, the Non-Hispanic Black population shows a reverse mirror image of Map 1. More pronounced concentrations are shown in Map 2, with Black racial composition rising as high as 93% to 98% in many neighborhoods to the south and southeast. The lowest concentrations of Non-Hispanic Blacks are in neighborhoods to the north and west, where Black residents make up only 3% to 11% of the population. In many neighborhoods in the northeast of the city, Blacks or African Americans make up 40% to 50% of the population.

Hispanic/Latino residents make up 10% of the District's population. As shown in Map 3, they are more widely distributed, with a handful of neighborhoods showing major concentrations of Hispanic/Latino residents, where they make up 20% to 30% of the population. These neighborhoods are located primarily in the north of the city, straddling the line dividing the northwest and northeast quadrants.

Only a small percentage (3.6%) of District residents identify as Non-Hispanic Asian. The Asian geographic distribution by neighborhood group is presented in Map 4. There are several neighborhoods (primarily to the south and east) where less than 0.1% of residents are Asian. The greatest concentrations of Asian residents fall in the center of the city and northwest (8% to 12%), with representation falling to about 1% in neighborhoods to the northeast and southeast.

The racial and ethnic diversity of the District is further enriched by the foreign-born population, which make up 14% of residents. This is slightly higher than the national average (13%), and includes all major racial groups as discussed above. The foreign-born population by statistical neighborhood is presented in **Figure 4.7**, where the geographic variation across neighborhoods is clearly visible. Only a handful of statistical neighborhoods have concentrations around the 13% District average, with most significantly above or below that mark. The highest concentration shown is 32.7% in Brightwood. Several other statistical neighborhoods, including Columbia Heights, Brightwood Park, Mount Pleasant and Georgetown East, have foreign-born populations of 25% or higher. In contrast, more than 10 statistical neighborhoods to the south and southeast have foreign-born populations of 5% of less, with the lowest at just 1.5%.

**Figure 4.8** shows by neighborhood the percentage of residents over 5 years old who speak a language other than English at home. The distribution of this population mirrors that of the foreign-born. Brightwood and Columbia Heights have the highest concentrations, respectively, of both groups. However, the District has a lower overall concentration of this group at 17% (the national average is 21%).

### **RACE and ETHNICITY by Neighborhood Group**

Figure 4.6: Percentage of Non-Hispanic White; Black; Hispanic and Asian Populations (%) (Maps 1-4 Clockwise)



DATA SOURCE: 2011-2015 ACS ESTIMATES

DATA SOURCE: 2011-2015 ACS ESTIMATES

# FOREIGN BORN POPULATION by Neighborhood Group

Figure 4.7: Percentage Foreign Born Population (%)

#### PERCENTAGE OF FOREIGN BORN POPULATION



### **FOREIGN BORN POPULATION by Neighborhood Group** Figure 4.8: Language Other than English Spoken at Home (%)

# PERCENTAGE OF LANGUAGE OTHER THAN ENGLISH SPOKEN AT HOME (POPULATION 5 YEARS AND OVER)



### **SOCIOECONOMIC CONTEXT by Neighborhood Group** Figure 4.9: Population in Poverty (%)

### PERCENTAGE OF POPULATION IN POVERTY (OF POPULATION FOR WHOM POVERTY STATUS IS DETERMINED)

	42.3% St. Elizabeth's
	40.2% Congress Hgts/Shipley
	39.9% Bellevue
	39.2% Washington Highlands
	37.4% Historic Anacostia
	36.7% Douglass
	36.2% Navlor/Hillcrest
	34.3% Eastland Gardens
	30.7% Edgewood
	30.7% Fort Dupont
	30.2% Trinidad
	29.5% Marshall Hgts
2	.6% Lincoln Hets
24	GWU/National Man
23	Georgetown
21.0	Twining
19.5%	Fort Lincoln/Gateway
19.0%	Chinatown 3
18.9%	Brentwood
16.7%	Columbia Hets 14
16.3%	Brightwood Park
15.8%	Cathedral Hgts
15.6%	Il Street / Pleasant
14.7%	Michigan Park 38
14.7%	South Columbia Hat
13.8%	SW/Waterfront 40 13 17 21 10
13.0%	Hill East
13.7%	Patworth 6 24
12.0%	16th 6t Holph
13.0%	Brightwood
12.7%	Bloomingdale
12.3%	Kingman Park
11 70/	26 11 28 37
11.770	Shenherd Park
11.3%	Vent/Delisedes
10.0%	Logan Cir/Shaw
10.5%	Woodbridge
10.6%	Union Station
10.5%	Georgetown East
0.3%	Georget Wills
9.3%	amond Biggs
0.5%	
7 3%	dams Morgan
6.70/	/oodley Park
6.7%	anital Hill
4.6% To	
2 00/ 11-	neytown Miles Miles
1.7% LIF	aby Woode Data DATA SOURCE: 2011-2015 ACS ESTIMATES;
1.7%Bar	2011-2015 LIFE EXPECTANCY (CPPE)

#### Context Indicators: Racial Segregation and Concentrated Poverty

Overall, the District of Columbia's geographic distribution by race and ethnicity can be summed up by its racial dissimilarity. The Racial Dissimilarity Index (RDI) is the most commonly used measure of segregation between two groups, reflecting their relative distribution across a geographic area, such as a city. A score of zero would mean complete integration, while a score of 100 would indicate complete segregation. Covering a five-year average from 2011 to 2015, the District of Columbia has a "White/Black" score of 70.9, and a "White/Non-White" score of 59.9, confirming that the city continues to be highly segregated. These data imply theoretically that 70.9% of White residents would have to move to achieve complete White/Black integration; or that 59% would have to move to gain complete White/non-White integration by race and ethnicity. These scores were calculated using US Census data (ACS 2011–2015 Estimates), using the RDI formula from Iceland et al. (2002).<sup>3</sup> The scores represent a significant change since 2000, when the relative scores were estimated at 81% and 46%, respectively.

### Racial Dissimilarly Index: DC 5-Year Average (2011–15) SCORE = 70.9 (White/Black)

The District of Columbia is not only highly segregated, but the racial/ethnic composition of each of the District's 51-statistical neighborhoods also vary significantly. Within predominantly Black, White, or Hispanic neighborhoods, all groups—individual Black, White and Hispanic residents— have different levels of exposure to and experience with members of their own racial/ethnic group and groups other than their own.<sup>4</sup>

Evidence of concentrated poverty at the statistical neighborhood level is also an important contextual indicator. **Figure 4.9** illustrates by statistical neighborhood the percentage of District residents living in poverty. Overall, 18% of District residents live in poverty, which is higher than the national average (15.5%), but there is wide variation on this indicator when broken down by statistical neighborhood. Poverty is widespread, with at least 10% of residents in poverty in 42 (82%) neighborhoods. However, poverty is also concentrated in only 19 statistical neighborhoods, where poverty rates are above the District average. In seven statistical neighborhoods, the percentage of residents in poverty are more than twice the District average, with the highest rates at close-to or above 40% in four statistical neighborhoods. All of these neighborhoods are in the south and east of the city.

The geographic intersection of these two context indicators—race/ethnicity and poverty, underscore the segregated patterning by race, ethnicity, and socioeconomic status across the District. Racial segregation and concentrated poverty at the neighborhood level are important realities for District residents, wherein place matters and context counts in opportunities for health.

## References

- DC Office of Planning. (n.d.). 2015 DC Movement: Who moved in and who moved out of the District. Retrieved from <u>https://planning.dc.gov/sites/default/files/dc/sites/op/page\_content/attachments/Mov</u> ing%20In%20and%20Out%20DC 0.pdf
- DC Office of Planning: State Data Center (Phillips, J). (2017). District of Columbia population and housing profile: 2011-2015 ACS Year Estimates. <u>https://planning.dc.gov/sites/default/files/dc/sites/op/page\_content/attachments/DC%</u> <u>20Population%20and%20Housing%20Profile%202015.pdf</u>
- 3. Iceland, J, Weinberg, D.H., and Steinmetz, E. (2002). *Racial and ethnic residential segregation in the United States: 1980-2000: Census 2000 special reports.* Retrieved from <u>https://www.census.gov/prod/2002pubs/censr-3.pdf</u>
- Frey, W.H., and Myers, D. (n.d.). *District of Columbia: Segregation: dissimilarity indices*. Census Scope: Science Data Analysis Network. Retrieved from <u>http://www.censusscope.org/us/s11/rank\_dissimilarity\_white\_black.html</u>
- US Census Bureau. (2017). Annual estimates of the resident population: April 1, 2010 to July 1, 2016(PEPANNRES). Population Division. Retrieved from <u>https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP</u> <u>2016 PEPANNRESandprodType=table</u>
- US Census Bureau. (2016). Demographics and housing estimates: 2011-2015 American community survey 5-year estimates (DP05). Retrieved from <u>https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS</u> <u>15 5YR DP05andprodType=table</u>
- 7. US Census Bureau. (2001a). Profile of general demographic characteristics:2000; Census 2000 summary file (SF1) 100-percent data (Table: QT PL)
- 8. US Census Bureau. (2001b). Nativity, citizenship, year of entry, and region of birth: 2000-Census 2000 summary file 4 (SF4)-Sample Data (Table: QT-p14)
- 9. US Census Bureau. (2016i). *Demographics and housing estimates: 2011-2015 American community survey 5-year estimates (Table:DP 05)*
- 10. US Census Bureau. (2016(h). *Selected economic characteristics: 2011-2015 American community survey 5-year estimates(Table: DP03)*.
- Frey, W.H., & Myers, D. (n.d.). Segregation: neighborhood exposure by race. Census Scope: Science Data Analysis Network. Retrieved from <u>http://www.censusscope.org/us/s11/p50000/chart\_exposure.html</u>
- 12. Hudson, S. (2017). DC's black population is growing, but there's more to the story than that. Greater Greater Washington. Retrieved <u>https://ggwash.org/view/62108/dcs-black-population-is-growing-but-this-doesn-tell-the-whole-story</u>

# **Chapter 5: Population Health Status**

This section provides an overview of population health status for the residents of the District of Columbia, including the prevalence of chronic diseases and the leading causes of death. **Life expectancy at birth** is the average number of years that a newborn is expected to live if current mortality rates continue to apply (CDC, 2017).<sup>1</sup> Neighborhood-level maps of life expectancy at birth, an important indicator of differential opportunities for health, are included.

**Morbidity**<sup>2</sup> refers to having a disease or a symptom of disease, or to the amount of disease within a population.<sup>2</sup> Nationally, heart disease and cancer have remained the two leading causes of death for the past 40 years. Greater declines in heart disease rates than cancer has narrowed the gap between these two causes of death (CDC, 2017).<sup>1</sup> Because of their high prevalence, many Americans, including District residents, live with the challenges of these and other diseases. The charts to the right show reported rates for three chronic diseases hypertension, diabetes, and memory/concentration difficulties. Each indicates a rate for the District on par or below the US in 2015 (**Figure 5.1**).

However, as shown in the section below on the leading causes of death, actual death rates are higher in DC than the US for five of the ten leading causes; better for three; and about the same for one (Table 5.1).

While deaths due to Alzheimer's disease are significantly lower in DC than the US as a whole, this rate is on the rise in the city. As shown, 8.4% of District adults reported difficulties with memory and concentration in 2015.

#### Adult Report of Hypertension 2015 DC and CDC BRFSS



Figure 5.1: Selected Chronic Diseases – US vs. DC

Detailed maps of the rates by neighborhood for selected leading causes of death for the District of Columbia are presented in **Figure 5.4** through **Figure 5.11**. Each demonstrates differential rates at the neighborhood level for each cause. Also shown are DC and US averages, for comparison.

#### Leading Causes of Death 2015

Mortality refers to the number of deaths in a certain group of people in a certain period of time, as well as the cause.<sup>1</sup> Below are the 10 leading causes of death for the District of Columbia in 2015, including comparisons with the leading causes for the US. Maps of those ranked 1 through 8 (**Figure 5.4** through **Figure 5.11**) below, show the distribution across the 51 neighborhood groups.

10 Leading Causes of Death District of Columbia and US 2015 (Age-adjusted deaths per 100,00)					
DC Rank	Causes of Death	No. of Deaths	DC Rate (2015)	US Rate (2015)	US Rank
1	Heart Disease	1,208	186.2	168.5	1
2	Cancer	1,066	166.3	158.5	2
3	Accident/Injury	260	39.4	43.2	4
4	Stroke	239	37.9	37.6	5
5	Diabetes	161	25.6	21.3	7
6	Chronic Lower Respiratory Disease	145	23.1	41.6	3
7	Assault/Homicide	136	17.5	5.7	
8	Alzheimer's Disease	129	19.2	29.4	6
9	Influenza and Pneumonia	104	16.2	15.2	8
10	Septicemia	86	13.4	11.0	11
10	Hypertension/Hypert. Renal Disease	86	13.2	8.5	13

#### Table 5.1: 10 Leading Causes of Death, 2015 – District of Columbia and US

Note: Rank based on total number of deaths. Source: 2015 DC Mortality Data. Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; and Centers for Disease Control and Prevention, 2016.



Distribution of Leading Causes of Death (%) District of Columbia 2015

**Figure 5.2: Distribution of 10 Leading Causes of Death, District of Columbia, 2015** Note: Rank based on total number of deaths; "All other causes" are not ranked: Source: 2015 DC Mortality Data. Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; and Centers for Disease Control and Prevention, 2016.

#### Leading Causes of Death by Race and Ethnicity

As shown in **Figure 5.2**, the proportion by percent of deaths overall for each of the major causes varies substantially. For 2015, heart disease and cancer together account for almost half of all deaths. All other causes make up much smaller proportions. The data are presented broken out by race and ethnicity in **Table 5.2**. Racial and ethnic differences are notable for several causes. Lower proportions of deaths due to chronic lower respiratory disease and heart disease are shown for Hispanic residents, but higher rates are shown for accident and injury and for cancer. Higher proportions of deaths from Alzheimer's and influenza/pneumonia are evident for Whites. Both Blacks/African Americans and Hispanics/Latinos have much higher proportions of deaths due to assaults/homicides.

Leading Causes of Death by Race and Ethnicity (%) District of Columbia 2015 (Age-adjusted deaths per 100,000)					
DC Rank	Causes of Death	All (%)	White Non- Hispanic	Black Non- Hispanic	Hispanic
	Total # of Deaths	<b>4, 870</b> (100%)	<b>930</b> (100%)	<b>3,640</b> (100%)	<b>125</b> (100%)
1	Heart Disease	24.80	22.58	25.27	16.00
2	Cancer	21.89	22.90	21.57	26.40
3	Accident/Injury	5.34	4.84	5.25	7.20
4	Stroke	4.91	5.81	4.62	5.60
5	Diabetes	3.31	1.40	3.39	3.20
6	Chronic Lower Respiratory Disease	2.98	3.33	2.94	0
7	Assault/Homicide	2.79	0.75	3.38	3.20
8	Alzheimer's Disease	2.65	4.52	2.31	1.60
9	Influenza or Pneumonia	2.14	2.47	2.06	3.20
10	Septicemia	1.17	1.18	1.95	2.40
10	Hypertension/Hypert. Renal Disease	1.17	1.72	1.79	1.60
*	All other causes	25.67	28.49	24.97	29.60

#### Table 5.2: Leading Causes of Death, by Race and Ethnicity - District of Columbia, 2015

Note: Rank based on total number of deaths; \* Not Ranked = "All other causes"; Source: 2015 DC Mortality Data. Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; and Centers for Disease Control and Prevention, 2016.

#### Leading Causes of Death by Neighborhood Group

Data for the top eight leading causes of death (heart disease through Alzheimer's disease) are mapped to the statistical neighborhood level in **Figures 5.4** to **5.11**. The results show differential rates for each of the causes, both above and below the District and US averages at this level of analysis. The distributions by statistical neighborhood vary from one cause to another. Most striking is the range of difference between the lowest and highest rates across most of the causes. This is especially so for heart disease and cancer. The highest rate of heart disease is in Douglass, at 543 per 100,000 population, versus the lowest, in Woodley Park, at 45 per 100,000 population. Interestingly, Douglass has the lowest rate (60 per 100,000) for cancer, while Historic Anacostia, immediately adjacent, has the highest cancer rate (386 per 100,000).

#### Infant Mortality

Infant mortality, the death of a baby before his or her first birthday, is an important indicator of the health and well being of a population. It is an indicator not only of maternal health, but of community health status more generally, including the availability of quality health services and medical technology. Data for the District of Columbia show that infant mortality has declined over the last decade, with the rate per 1,000 live births falling overall, from 13.6 in 2005 to 7.1 in 2016. However, as shown in **Figure 5.3**, while the long-term trends in infant mortality are positive overall, persistent differences remain by race/ethnicity. All groups saw a decrease, with the rate for White mothers going down overall, from 3.8 per 1,000 in 2005 to 2.3 in 2016, which is lower than the national rate of 5.87 per 1,000. Rates for Hispanic mothers have declined most sharply, down from 10.6 per 1,000 in 2005 to 3.7 in 2016. Rates for Black mothers have declined significantly as well, although not as much—down from 18.4 per 1,000 live births in 2005 to 11.3 per 1,000 in 2016. However, the rate for Black mothers remains more than three times that of their White peers.



**Figure 5.3: Infant Mortality by Maternal Race and Ethnicity, District of Columbia 2005-2016** Source: DOH CPPE 2016.

### **POPULATION Health Status by Neighborhood Group** Figure 5.4: Leading Causes of Death #1 – **HEART DISEASE**



### POPULATION Health Status by Neighborhood Group Figure 5.5: Leading Causes of Death #2 – CANCER (AGE ADJUSTED RATE PER 100,000 POPULATION)



### **POPULATION HEALTH STATUS by Neighborhood Group** Figure 5.6: Leading Causes of Death #3 – **ACCIDENTS**



### **POPULATION HEALTH STATUS by Neighborhood Group** Figure 5.7: Leading Causes of Death #4 – **STROKE**



### **POPULATION HEALTH STATUS by Neighborhood Group** Figure 5.8: Leading Cause of Death #5 – **DIABETES**



### **POPULATION HEALTH STATUS by Neighborhood Group** Figure 5.9: Leading Causes of Death #6 – **CHRONIC LOWER RESPIRATORY DISEASE**



### **POPULATION HEALTH STATUS by Neighborhood Group** Figure 5.10: Leading Causes of Death #7 – **ASSAULT/HOMICIDE**

#### (AGE ADJUSTED RATE PER 100,000 POPULATION)



Health Equity Report: District of Columbia 2018

### **POPULATION HEALTH STATUS by Neighborhood Group** Figure 5.11: Leading Causes of Death #8 – **ALZHEIMER'S DISEASE**



### **POPULATION HEALTH OUTCOMES by** Ward

#### Figure 5.12: Life Expectancy at Birth – All Wards, 2009-2014

In the District of Columbia, as across the nation, average life expectancy has trended upward over the last several decades. Life expectancy across the District overall was 78.4 years (2010–2014). This was a slight improvement over the previous fiveyear average of 78.0 years (2009–2013). However, as shown in Figure 5.12a and 5.12b, life expectancy varied significantly across wards during both fiveyear periods. Residents in Ward 3 had the highest life expectancy, increasing to 87 years, 2010–2014. During the same period, Ward 8 life expectancy also increased, but had the lowest average, at 71.7 years—a difference of 15.3 years.

Overall, the difference in life expectancy across the eight wards diminished slightly between the 2009-2013 and the 2010–2014 periods (15.8 years to 15.3). Some wards improved, others did not, and two wards (Wards 7 and 2) declined slightly. Ward 1 improved the most, gaining 1.5 years of life expectancy (78.3 years to 79.8).

As shown in Figure 5.13, differences in life expectancy by ward have continued in the most recent five-year average (2011–2015). All wards have had some increase, contributing to an overall life expectancy increase to 79.0 years overall for the District as a whole. However, there has been an increase, though small, in the gap across the eight wards, to 15.6 years.

Neighborhood-level data, as shown in Figure 5.13 for 2011–2015, show even wider gaps. Between Woodley Park, where life expectancy is 89.4 years, and St. Elizabeths, where life expectancy was just 68 Figure 5.12b: Life Expectancy at Birth, years, there is a gap of 21.0 years across the District. 2010-2014 (Years)

Ward 2 Ward 6 85 78.2 Ward 8 71.7









### **POPULATION HEALTH OUTCOMES by Neighborhood Group** Figure 5.13: Life Expectancy at Birth (2011-2015)

#### LIFE EXPECTANCY AT BIRTH (2011-2015)



#### Part 2 Conclusion: Demographic and Population Health

The purpose of this section of the report is to provide information on both the demographic and socioeconomic composition of District of Columbia residents (**Chapter 4**), as well as data on population health status and outcomes (**Chapter 5**), at a more granular scale. It serves as an important building block for the remainder of the report. (*See Chapter 6 for a reference summary of key data at the ward level.*)

Data and maps on the leading causes of death, including their distribution at the statistical neighborhood level, show that the health status of District residents differs in different parts of the city. The data and mapping of resident demographics reveal differential residential distributions by race and ethnicity, as well as by socioeconomic status, which is operationalized here as the percentage of residents living in poverty (Figure 4.9). Mapping of life expectancy at birth shows similar distributions and large gaps. From a socio-demographic perspective, racial segregation and concentrated poverty provide important context for unpacking the stark differences in life expectancy across the District. An analysis of the contributing factors to differences in life expectancy by statistical neighborhood shows that racial and economic segregation explain 76% of the observed differences in life expectancy estimates. Racial segregation alone explains 70% of the observed differences.<sup>3</sup>

The segregated patterning by race and ethnicity, socioeconomic status, and life expectancy underscore the importance of place to health status and health outcomes at the statistical neighborhood level across the District. These differences originate in, and are undergirded by, the complex interplay of social and structural determinants that is the focus of the remainder of this report. The geographic patterning of life expectancy, especially at the statistical neighborhood level **(Figure 5.13)**, will also be used as a lens or context indicator to gauge the overall health of the community.

## References

- Centers for Disease Control and Prevention (CDC). (2017). *Health, United States, 2016: with chartbook on long-term trends in health.* Retrieved from <a href="https://www.cdc.gov/nchs/data/hus/hus16.pdf#019">https://www.cdc.gov/nchs/data/hus/hus16.pdf#019</a>
- National Cancer Institute. (n.d.). NCI dictionary of cancer terms: morbidity. National Institutes of Health. Retrieved from <u>https://www.cancer.gov/publications/dictionaries/cancerterms?cdrid=44514</u>
- Putzer, E., Samala, R., Little, D., Johnson-Clarke, F. (2014). The predictive power of place: effects of racial and economic segregation on differences in life expectancy at the neighborhood level-District of Columbia, 2009–2013. Poster presentation at the CSTE Annual Conference, Anchorage, AK. Retrieved from <u>http://www.cste.org/blogpost/1084057/260143/THE-</u> <u>PREDICTIVE-POWER-OF-PLACE-EFFECTS-OF-RACIAL-AND-ECONOMIC-SEGREGATION-ON-</u> <u>DIFFERENCES-IN-LIFE-EXPECTANCY-ESTIMATES-AT-THE-NEIGHBORHOOD-LEVEL--District-of-</u> <u>Columbia-2009-2013</u>



# Washington DC Ward Summaries

Summaries presented in this section provide a **high-level overview of the demographic characteristics or health outcomes** for each of the District of Columbia's eight wards. Total population numbers, including median age and related population pyramids, provide insight into the demographic composition of ward residents by age, gender, race, and ethnicity. **Median income and life expectancy** for each ward is also provided. Leading causes of death for each ward are included as well.

Data for this section comes from the Center for Policy, Planning and Evaluation's 2017 report, *Age-Adjusted Rates of Leading Cause of Death, 2015*, and from the US Census Bureau's *2011–2015 American Community Survey 5-Year Estimates*.
# DC Ward 1 SUMMARY

Figure 6.1: Ward 1 Population Health Overview

Population<sup>1</sup>: 82,859 Median Age<sup>1</sup>: 31.3 Median Income<sup>1</sup>: \$82,159 Life Expectancy<sup>2</sup>: 80.7





#### Life Expectancy Rank: #3

- Highest population density
- Most diverse ward by race and ethnicity
- Highest Hispanic/Latino population



#### Top 10 Leading Causes of Death<sup>3</sup> Ward 1, 2015



# **DC Ward 2 SUMMARY**

Figure 6.2: Ward 2 Population Health Overview

Population by Age and Sex,

Population<sup>1</sup>: 77,645 Median Age<sup>1</sup>: 30.9 Median Income<sup>1</sup>: \$100,388 Life Expectancy<sup>2</sup>: 85.2





## Top 10 Leading Causes of Death<sup>3</sup> Ward 2, 2015



#### Age-Adjusted Rate Per 100,000 Population

# DC Ward 3 SUMMARY

Figure 6.3: Ward 3 Population Health Overview

Population<sup>1</sup>: 83,152 Median Age<sup>1</sup>: 37





#### Top 10 Leading Causes of Death<sup>3</sup> Ward 3, 2015



#### Age-Adjusted Rate Per 100,000 Population

# **DC Ward 4 SUMMARY**

Figure 6.4: Ward 4 Population Health Overview

Population<sup>1</sup>: 83,066 Median Age<sup>1</sup>: 39.3 Median Income<sup>1</sup>: \$74,600 Life Expectancy<sup>2</sup>: 79.1



#### WARD QUICK NOTES

#### Life Expectancy Rank: #4

- 3<sup>rd</sup> Largest Population
- Highest median age
- Life expectancy close to district average



#### Top 10 Leading Causes of Death<sup>3</sup> Ward 4, 2015



#### Age-Adjusted Rate Per 100,000 Population

# **DC Ward 5 SUMMARY**

Figure 6.5: Ward 5 Population Health Overview

Population<sup>1</sup>: 82,049 Median Age<sup>1</sup>: 35.4 Median Income<sup>1</sup>: \$57,554 Life Expectancy<sup>2</sup>: 75.8





## Top 10 Leading Causes of Death<sup>3</sup> Ward 5, 2015



# **DC Ward 6 SUMMARY**

Figure 6.6: Ward 6 Population Health Overview

Population<sup>1</sup>: 84,290 Median Age<sup>1</sup>: 33.9 Median Income<sup>1</sup>: \$94,343 Life Expectancy<sup>2</sup>: 78.4

## WARD QUICK NOTES

#### Life Expectancy Rank: #5

- Largest population
- 3<sup>rd</sup> Highest median household income
- Highest suicide rate (not shown)



#### Top 10 Leading Causes of Death<sup>3</sup> Ward 6, 2015



#### Age-Adjusted Rate Per 100,000 Population

# **DC Ward 7 SUMMARY**

Figure 6.7: Ward 7 Population Health Overview

Population<sup>1</sup>: 73,290 Median Age<sup>1</sup>: 37 Median Income<sup>1</sup>: \$39,165 Life Expectancy<sup>2</sup>: 71.7

## WARD QUICK NOTES

#### Life Expectancy Rank: #7

- Smallest population
- Highest Non-Hispanic Black population
- Highest Alzheimer's death rate



#### Top 10 Leading Causes of Death<sup>3</sup> Ward 7, 2015



Age-Adjusted Rate Per 100,000 Population

# **DC Ward 8 SUMMARY**

Figure 6.8: Ward 8 Population Health Overview

Population<sup>1</sup>: **81,133** Median Age<sup>1</sup>: **29.3** Median Income<sup>1</sup>: **\$30,910** Life Expectancy<sup>2</sup>: **69** 

#### WARD QUICK NOTES

#### Life Expectancy Rank: #8

- Lowest median age and median income
- Highest rates for most leading causes of death
- HIV is the 10<sup>th</sup> leading cause of death



#### Top 10 Leading Causes of Death<sup>3</sup> Ward 8, 2015





# **Part 3: Community Health Drivers**

The conditions in the environments in which people are born, live, learn, work, play, and age affect a wide range of health, functioning, and quality of life outcomes and risks. These **social determinants of health** are presented as nine key drivers: Education; Employment; Income; Housing; Transportation; Food Environment; Medical Care; Outdoor Environment; and Community Safety. The following chapters look at each of these key drivers of community health outcomes.



"Education is one of the key filtering mechanisms that situate individuals within particular ecological contexts. Education is a driving force at each ecological level, from our choice of partner to our social position in the status hierarchy. The ecological model can therefore provide a context for the numerous ways in which education is linked with our life experiences, including health outcomes."

#### -Agency for Healthcare Research and Quality<sup>1</sup>

Among the social determinants of health, educational attainment is arguably the most critical. It has a profound impact on almost all other factors—most intuitively, employment and income opportunities—and contributes to associated health-promoting resources and psychological benefits. A large body of evidence links education to health, even when other factors such as income are taken into account (Zimmerman et al., n.d.).<sup>1</sup> A critical interrelated pathway as shown in **Figure 7.1** demonstrates that greater educational attainment leads to better employment opportunities and higher income, and ultimately better health (Robert Wood Johnson Foundation, 2009). More education is typically linked with higher-paying jobs that provide the necessary income to live in neighborhoods that are less stressful, have stores with affordable healthy foods, and provide access to recreational facilities. Bottom line: People with more education are more likely to live in health-promoting environments that encourage and enable them to adopt and maintain healthy behaviors (RWJF, 2009).<sup>2</sup>





Higher-paying jobs also support greater economic security and improved opportunities for wealth accumulation. Improved job quality has an impact beyond increased income and material well-being. Higher-status jobs are associated with positive social and physiological benefits, including improved social standing and a greater sense of control, both of which positively impact stress reduction and management. These health-protective factors boost **resilience**, defined as the ability to rebound or persevere in the face of stressful events. At the

other end of the spectrum, lower-paid workers experience greater stress even beyond the workplace because they have fewer financial resources and social supports to deal with everyday life challenges. Higher educational attainment is also linked with improved health knowledge and health literacy, both of which promote and sustain positive health behaviors. Overall, research shows that for both men and women, more educational attainment have life. Across the United States, differences in health outcomes by educational attainment have increased over the past several decades. While among the most educated, death rates are declining, they are steadily increasing amongst the least educated.<sup>1</sup> Various studies show, for example, that:

- Between 1990 and 2009, among Whites with less than 12 years of education, life expectancy at age 25 fell by more than three years for men and by more than three years for women.<sup>1</sup>
- By 2011, the prevalence of diabetes had reached 15% for adults without a high school education, compared with 7% for college graduates.<sup>1</sup>
- At age 25, US adults without a high school diploma can expect to die nine years sooner than can college graduates.<sup>1</sup>
- College graduates can expect to live at least five years longer than individuals who have not finished high school.<sup>2</sup>

## DC Public and Charter Schools Student Profile, 2014–2017

Within the District of Columbia, all resident school-age children, kindergarten through 12<sup>th</sup> grade, may attend a neighborhood public school based on their home address, or choose another public school in the District via lottery, where space is available. However, despite some flexibility and choice, residential address—that is, where you live—is the greatest determinant of the school a student attends.

District of Columbia Public Schools Student Population, School Years (SY) 2014–2017							
		2014–15	2015–16	2016–17			
То	tal Student Enrollment	47,548	48,439	48,555			
Sti	udent Demographics						
•	Black	67%	64%	62%			
•	Hispanic	17%	18%	20%			
•	Other Ethnicity	4%	4%	4%			
•	White	12%	13%	14%			
•	Special Education	16%	15%	14%			
•	English Language Learner	10%	11%	12%			
•	Economically Disadvantaged	N/A	78%	77%			

Table 7.1: DC Public Schools Student Population, School Years 2014–2017Source: District of Columbia Public Schools (DCPS) (2014–2017)

During the 2016–2017 school year, there were over 90,000 students enrolled in more than 260 schools (kindergarten through 12<sup>th</sup> grade) in the District.<sup>3</sup> More than 48,000 students attended traditional District of Columbia Public Schools (DCPS). Another 40,000 attended Public Charter Schools (PCS). The student body included 68% Black, 18% Hispanic, 10% White, and 1.6% Asian. During this school year, there were 115 DCPS schools, including 63 elementary; 13 middle; and 14 high schools.<sup>4</sup>

Enrollment and demographic data for DCPS schools is presented in **Table 7.1**. While over the three school years shown total enrollment has remained about the same, the makeup of the student body is shifting. The proportion of Black students is trending downwards, while the percentages of Hispanic and White students are increasing. In the 2011–2012 school year (not shown), total enrolment was lower, at 45,191, and Black students represented 71% of the student population.<sup>4</sup>

## Student Performance Trends

In 2015, a US Department of Education report showed that the District led the nation in percentage of 4-year-olds enrolled in preschool, at 94%. The national average was 28%. In the District, 6% were enrolled in federal Head Start programs, compared with the national average of 10% (US Department of Education, 2015).<sup>5</sup> However, the 2015 performance of District students in 4<sup>th</sup>- and 8<sup>th</sup>- grade ranked lower in math and reading than that of public school students in the nation (US Department of Education, 2016).<sup>6</sup> While several scores were improved over 2000 and 2013 data, the differences were not always statistically significant. Additionally, because other states' averages also rose, DC's relative position remained about the same. The Grade 8 Mathematics snapshot is shown in **Table 7.2**.

DC Public Schools, 2015, Grade 8 Mathematics Snapshot Report U.S. Department of Education, National Center for Education Statistics									
Reporting Groups	Group %	Average Score	% at or above Basic	% at or above Proficient	% at Advanced				
Black	76	257	46	13	1				
Hispanic	14	265	54	19	4				
White	7	316	92	74	32				
Asian	1								
Female	51	266	55	21	4				
Male	49	260	47	18	4				

 Table 7.2: DC Public Schools, 2015, Grade 8 Mathematics Snapshot Report

 Source: National Conter for Education Statistics (2015)

Source: National Center for Education Statistics (2015)

## High School Graduation Rates, 2016

One of the important measures of educational attainment and the efficacy of educational systems in the United States are high school graduation rates. Available data from District of Columbia Office of the State Superintendent of Education (OSSE) indicate that based on the DCPS and PCS high schools on which they report, the graduation rate for the 4,811 students in the DC 2016 Adjusted Cohort was an average of 70.9% (D.C. Office of the State Superintendent of Education, 2016a).<sup>7</sup> The rate across the PCS high schools was 72.9%, while that for DCPS high schools was lower, at 69.0%, as shown in **Table 7.3**.

Overall, about 30% of high school freshmen failed to graduate in four years; although about 2 in 5 of these re-enrolled for the following academic year (SY2016–17), increasing their chances of successful high school completion. However, an additional 14%—a total of 773 young people who did not graduate on time, nor re-enroll—were counted amongst the "currently educationally disengaged," putting them at risk for poorer health outcomes and shorter lives than their graduating peers.

DC 2016 Adjusted Cohort Four-Year Graduation Rate (9th grade class entering for first time in 2012–2013 school year)								
Total Num Students	iber of	4-Year Graduates	S					
Adjusted Cohort (AC) Number of Graduates Enrolled in DC Schools Other Credential or attending College					Educationally Disengaged			
DCPS	3343	2306 (69.0%)	435 (13.0%)	36 (1.10%)	566 (16.9%)			
PCS	1468	1070 (72.9%)	173 (11.8%)	11 (1.20%)	207 (11.10%)			
TOTAL	4811	3376 (70.9%)	608 (12.4%)	47 (1.15%)	773 (14.0%)			

 Table 7.3: DC 2016 Adjusted Cohort Four-Year Graduation Rate (SY 2015–2016)
 Overview

 Source: DC Office of the State Superintendent of Education (OSSE) (2016a)

The data presented in **Table 7.4** disaggregates 2016 graduates by gender, race, and economic disadvantage subgroups (OSSE, 2016b).<sup>8</sup> Based on this data, it is clear that a majority of graduates (69.3%) qualify as Economically Disadvantaged. The graduation rate for this group is similar to the District average at 71.1%, but is higher for the PCS (75%) than for DCPS (67%).

Disaggregation by race and ethnicity, as with the economic disadvantage designation, shows that the overwhelming majority of graduating students in 2016 were African American, at

78.7%. Their graduation rate overall, at 69.7%, is below the District-wide average, with lower rates for DCPS high schools (66.8%), compared with PCS at 72.6%. Overall, African-American students are doing least well in comparison to other racial subgroups. Latino students made up approximately 12.3% of the 2016 graduating class, with an overall graduation rate of 72.1%; ranging from 67.0% in DCPS to 77.2% in PSCs.

The remaining 9% of the Class of 2016, made up of White, Asian, and Multi-Ethnic students, were too few in number, such that numerical details are omitted from reporting data. Their graduation rates from DCPS high schools, at 91%, 85%, and 96%, respectively, indicate better outcomes relative to their African-American and Latino peers. Notably, the majority of the 18 PCS are smaller schools with smaller cohort/graduating classes relative to DCPS high schools. Sixteen of eighteen (88.8%) had fewer than 100 students in the 2016 Adjusted Cohort. A notable exception is Friendship PCS Collegiate, one of just two large charters, with a 2016 adjusted cohort count of 214, and a 91% graduation rate. Six of the PCSs had graduation rates below 70%. Four had rates 70% to 79%; and eight had graduation rates at 80% or above.

DC 2016 Adjusted Cohort Four-Year Graduation Rate, by Subgroup (9 <sup>th</sup> -Grade class entering for first time in 2012–2013 school year)									
Gender Race							Economic Disadvantage		
2016 Graduates (n= 3,376)		Female	Male	African American	Latino	White	Asian	Multi-Ethnic	All Grads
Total	69.2%	76.1%	62.5%	67.7%	69.2%	91.4%	85.2%	95.8%	69.3%
DCPS	69.0%	75.8%	62.5%	66.8%	67.0%	92.5%	95.5%	95.5%	67.4%
PCS	72.9%	79.2%	66.4%	72.6%	77.2%	n/a	n/a	n/a	74.9%

## Table 7.4: DC 2016 Adjusted Cohort 4-Year Graduation Rate (SY 2015-2016)

- by Subgroup: Source: D.C. Office of the State Superintendent of Education (OSSE) (2016b)

In comparison, 75% (15 of 20) of DCPS schools had more than 100 students in the 2016 Adjusted Cohort. Of these, 9 had over 100, but less than 200; another 5 had between 200 and 300. The outlier in this group is Wilson High School, with a total of 424 in the cohort, and a high graduation rate of 88.2%. Columbia Heights EC, with 222 in the cohort, and Eastern, with 278, had graduation rates at 86% and 79% respectively, above the District-wide average. Half of DCPS schools (10 of 20) had graduation rates below the District average. This includes three high schools with large cohort numbers: Anacostia (n= 224); Ballou (n= 267) and Cardozo EC (n= 201) with low graduation rates at 42%; 57%; and 59% respectively.

**Figure 7.2** shows the 2016 4-year adjusted cohort graduation rates for DC Public High Schools; and DC Public Charter Schools. The approximate location of individuals schools are shown, along with their graduation rates. The boundaries for the District's eight wards are also shown.



**Figure 7.2: Graduation Rates - DC Public Schools – DCPS and PCS (2016)** Source: Office of the State Superintendent of Education (OSSE)

# **EDUCATIONAL ATTAINMENT by Neighborhood Group**

Figure 7.3: Adults with Bachelor's Degree or Higher

## PERCENTAGE WITH BACHELOR'S DEGREE AND HIGHER (POPULATION 25 YEARS AND OVER)



# **EDUCATIONAL ATTAINMENT by Neighborhood Group** Figure 7.4: Adults High School Graduate or Higher

## PERCENTAGE WITH HIGH SCHOOL DIPLOMA AND HIGHER (POPULATION 25 YEARS AND OVER)



## Neighborhoods and Educational Attainment in the District

The distribution of educational achievement by statistical neighborhood, presented in **Figures 7.3** and **7.4**, underscore geographic variation by level of education. More District residents (54%) have a bachelor's degrees or higher (**Figure 7.3**) than US residents as a whole (29%). Highly educated residents are overwhelmingly concentrated in neighborhoods in the northwest quadrant, where the percentages are at or above 80% in 13 neighborhoods. An estimated 89% of District residents have a high school diploma or higher educational attainment (**Figure 7.4**), which is higher than the US rate of 86.7%. Geographic variation by neighborhood is still evident, however, with 18 statistical neighborhoods below the national average. Three neighborhoods have fewer than 80% of residents having attained a high school diploma. A majority of these neighborhoods lie in the south and east of the city.

The prevalence of high educational attainment in the District contributes to a highly competitive job market. Combined with the city's cost of living being among the highest in the country, the challenge for residents with limited education becomes all the more daunting. The District has a relatively high percentage of residents age 25 and over without a high school diploma and living in poverty (35%) compared with the national average (27%). As shown in **Figure 7.6**, there are higher concentrations of residents without high school diplomas living in poverty in several neighborhoods to the south and east of the city. Eleven neighborhoods have percentages with this dual disadvantage at or above 45%. For four, the level is greater than 50%, reaching 59% in Historic Anacostia. These outcomes are consistent with the evidence base, which shows important relationships between neighborhoods, school quality, poverty, and educational outcomes. Good neighborhoods often mean good schools, and both are needed to break the poverty cycle (Chetty et al., 2016).<sup>9</sup>

## Education and Health Outcomes in the District

As shown in **Figure 7.5**, there is a close relationship between educational attainment and health outcomes in the District. Differential outcomes by educational attainment are shown, cutting across multiple chronic diseases and health behaviors, including stroke, heart disease, asthma, and diabetes, as well as physical activity and smoking. Regardless of disease prevalence or reported health behavior, District of Columbia residents without a high school diploma had the highest rates of problems across the six metrics. College graduates, at the other end of the spectrum, had the lowest rates. The stepped relationship across the educational spectrum is noteworthy, with improved outcomes at each additional level of education.

The percentage of District adult residents (25 years and over) without a high school diploma and living in poverty by neighborhood is presented in **Figure 7.6.** The highest concentrations of these residents are to the south and east of the city. The overlay of life expectancy shows the geographic correlation of low educational attainment, living in poverty, and shorter lives. Similarly, the correlated and stepped relationship between educational attainment and health outcomes is further underscored by overall rates of reported fair and poor health, as shown in **Figure 7.7.** 



#### Figure 7.5: Education and Selected Health Outcomes in the District

Source: DC 2015 BRFSS Data, DC Health, Center for Policy, Planning and Evaluation (CPPE)

# EDUCATIONAL ATTAINMENT by Neighborhood Group and Life Expectancy

Figure 7.6: Adults Without a High School Diploma and Living in Poverty

# PERCENTAGE OF ADULTS (25+) WITH LESS THAN HIGH SCHOOL DIPLOMA LIVING IN POVERTY

62.5% Naylor/Hillcrest	
59.2% Historic Anacostia	
56.1% SW/Waterfront	
55.6% Congress Hgts/Shipley	
55.2% Fort Lincoln/Gateway	
51.5% Chinatown	
51.3% St. Elizabeth's	~
48.7% Marshall Hgts	
47.6% Douglass	R <b>e</b>
46.1% Washington Highlands	Jour Contraction of the second s
45.1% Fort Dupont	
44.8% Bellevue	
44.2% Edgewood	
39.2% Trinidad	
39.0% U Street/Pleasant	
38.4% Eastland Gardens	
36.6% Lincoln Hgts	
35.2% Twining	
33.5% Union Station	Illino ito • II
32.0% Mt. Pleasant	
31.0% Kingman Park	
31.0% Adams Morgan	
28.9% Brentwood	-
28.7% Bloomingdale	
27.1% Hill East	
26.5% Columbia Hgts	
25.9% Michigan Park 68.4 - 70.8	
25.7% South Columbia Hgt 0 70.9 - 74.5	
25.3% Petworth	
23.2% Logan Cir/Shaw 977.6 - 79.8	N
20.1% 16th St Heights 979.9 - 81.9	A
18.6% Brightwood 82.0 - 85.1	
16.0% Woodbridge 85.2 - 89.4	DATA SOURCE: 2011-2015 ACS ESTIMATES:
12.3% Brightwood Park Suppressed Data	2011-2015 LIFE EXPECTANCY (CPPE)

#### **Self Reported Fair or Poor Health By Education,** 2015 DC BRFSS



#### Fig: 7.7: Education and Health Outcomes, DC 2015

Source: DC 2015 BRFSS Data, DC Health, Center for Policy Planning and Evaluation (CPPE)

## Conclusion

Data on student performance in DC Public and Charter Schools indicate a high degree of variability across individual public and charter high schools. Persistent performance gaps by race and ethnicity (2000 to 2015), as well as a widening gender gap, is evident over the same period, negatively impacting male students. All underscore a picture of differential educational opportunities, depending on the high school attended.

Low high school graduation rates have both immediate and lifelong health effects, as well as lasting intergenerational impacts. Educational attainment below high school graduation severely limits opportunities for healthier, longer lives. High school graduation is essential to post-secondary readiness for either the job market or college or both. Graduating from high school is not only a prerequisite for college, but a health indicator; college graduates can expect to live several years longer than individuals who did not finish high school.

The important relationships between neighborhoods, school quality, poverty, educational outcomes, and health are well documented. Good schools are essential ingredients to healthy neighborhoods, and both are needed to break the poverty cycle and to support improved health outcomes.

Finally, it should be noted that the data collection upon which this section of the report is based predates the November 2017 review of practices pertaining to graduating chronically absent students in many District of Columbia high schools. This suggests that the real graduation rates may be lower than the official rates as originally reported.

# References

- Zimmerman, Emily, B., Woolf., Steven H.; and Amber Haley. (n.d.). "Understanding the relationship between education and health." Retrieved from <u>https://www.ahrq.gov/professionals/education/curriculum-tools/populationhealth/zimmerman.html</u>
- Robert Wood Johnson Foundation. (2009). Education Matters of Health. Commission to Build a Healthier America. Retrieved from http://www.commissiononhealth.org/PDF/c270deb3-ba42-4fbd-baeb-2cd65956f00e/Issue%20Brief%206%20Sept%2009%20-%20Education%20and%20Health.pdf
- D.C. Office of the State Superintendent of Education (OSSE). (2016–2017). Student enrollment audit report. Retrieved from <u>https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/2016-</u> <u>17%20School%20Year%20Enrollment%20Audit%20Report\_0.pdf</u>
- 4. District of Columbia Public Schools. (n.d.). DCPS at a glance: enrollment. Retrieved from https://dcps.dc.gov/page/dcps-glance-enrollment
- 5. U.S. Department of Education. (2015). *A matter of equity: preschool in america*. Retrieved from https://www2.ed.gov/documents/early-learning/matter-equity-preschool-america.pdf
- U.S. Department of Education. (2016). *The nation's report card: 2015 mathematics state snapshot report.* Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress. Retrieved from https://nces.ed.gov/nationsreportcard/subject/publications/stt2015/pdf/2016009DC8.pdf
- D.C. Office of the State Superintendent of Education. (2016a). DC 2016 adjusted cohort fouryear graduation rate overview. Retrieved from <u>https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/Adjusted%20Coh</u> <u>ort%20Graduation%20Rate%20Overview%202015-16.pdf</u>
- D.C. Office of the State Superintendent of Education.(2016b). DC 2016 four-year cohort graduation rate, by subgroup. Retrieved from <u>https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/Adjusted%20Coh</u> <u>ort%20Graduation%20Rate%20by%20Subgroup%202015-16.pdf</u>
- Chetty, R. (2016). Raj Chetty on inequality, social mobility, and breaking the cycle of poverty. Stanford Institute for Economic Policy Research. Retrieved from <u>https://siepr.stanford.edu/highlights/chetty-poverty-inequality-social-mobility</u>



"A good job is more than just a paycheck. A good job fosters independence and discipline, and contributes to the health of the community. A good job is a means to provide for the health and welfare of your family, to own a home, and save for retirement."

#### -James H. Douglas, Jr.<sup>1</sup>

Employment is, and will continue to be, the primary source of income for most Americans. An estimated 83% of Americans state that their employment impacts their overall well-being (Rodin, 2015).<sup>2</sup> Increasingly, however, more multidisciplinary, collaborative work and reliance on technology mark a shift away from manufacturing toward service jobs, including growing demand for knowledge-based work requiring relatively high levels of education and technical training. Global, national, and local economies are changing not only the definition of what would be considered a *good* job, but also who will have access to such jobs.

A workforce that is multigenerational, as well as more racially, ethnically, and genderrepresentative is a potential plus for equity and opportunity. It is also more responsive to the changing perspectives and expectations of both employees and employers. The 21st-century workforce is predicted to face greater uncertainty, have multiple employers, and require ongoing enhancements of skills over the course of their working careers (Robert Wood Johnson Foundation, 2011).<sup>3</sup>

A 2015 Rockefeller Foundation study focused on defining a contemporary *good job* noted that some 20% of participants lacked basic benefits such as employer-based health insurance, dental and vision care, paid vacation, paid sick leave, or paid parental leave. Workers themselves reported the four characteristics of a *good job* as stability, flexibility, opportunity, and pride (Rodin, 2015).

## The Working Poor

National data reveal inconsistent access to quality jobs for workers across the US, as defined by earned income and availability of benefits. While the focus of this section of the report is on employment as a key driver of health outcomes across the District of Columbia, insight into the unique position of the working poor is informative, as employment in and of itself is not the only measure of job quality or economic stability. With nearly 7% of workers falling within the **working poor** category *(see definition below),* the data are instructive with respect to the importance of well-paying jobs as part of the employment opportunity equation.

The US Department of Labor, Bureau of Labor Statistics (BLS),<sup>4</sup> Profile of the Working Poor, 2014, shows that an estimated 14% of Americans live below the federal poverty level, including the **working poor**, defined as workers who have been employed at least 27 weeks and live below the federal poverty level. The national working poor rate in 2014 (*i.e.* ratio of the working poor to all individuals in the labor force at least 27 weeks) was 6.6%—down by 0.7 percentage points over the prior year. Full-time workers are less likely to be among the working poor than part-time workers. Of the working poor, 4.1% were usually employed full time, compared with 13.5% of part-time workers. Women were more likely than men to be among the working poor. In addition, Blacks and Hispanics continued to be more than twice as likely as Whites and Asians to be among the working poor.

The likelihood of being working poor diminishes as workers attain higher levels of education. Among those with less than a high school diploma, 18.3% were working poor, compared with 2.0% of college graduates. Those in service occupations were more likely to be among the working poor than those in other major occupational groups. Among families with at least one member in the labor force who was working poor, those with children under 18 years old were more than four times as likely as those without children to live in poverty. Families maintained by women were more likely than families maintained by men to be living below the poverty level.

## Employment and Access to Benefits

The US Bureau of Labor Statistics data (BLS, 2017)<sup>5</sup> on access and utilization of selected benefits inform this discussion on employment, as well as the next section on income, not only with respect to national and regional benefits gaps that prevail, but also in the close relationship between higher incomes and more benefits. The reverse is also true—lower pay is also linked to fewer benefits.

Selected Employer-Sponsored Benefits: Access, Participation, and Take-Up* US March 2017 Rates in % (Mid-Atlantic)										
	(Privo	All Civilian ate, state, and	l local)	I	Private Industry			State and Local Government		
	Access	Participation	Take-up rate*	Access	Participation	Take-up rate*	Access	Participation	Take-up rate*	
Medical care	70 (71)	50 (53)	74 (75)	67 (69)	49 (51)	72 (74)	89 (87)	71 (69)	80 (80)	
Retirement	70 (71)	54 (59)	77 (83)	66 (67)	50 (54)	75 (81)	91 <b>(93)</b>	80 (84)	88 <b>(90)</b>	
Life insurance	59 (59)	58 (59)	98 (99)	55 (56)	54 (55)	98 (99)	81 (82)	79 (82)	98 (99)	

Table 8.1: Employer Sponsored Benefits: Access, Participation and Take Up, US and Mid-Atlantic Rates,March 2017

Source: US Bureau of Labor Statistics, July 2017

Notes:

1. (%) Green - shows data for the Mid-Atlantic geographic region (Delaware, District of Columbia, Florida, Maryland, Pennsylvania, Virginia, and West Virginia (Tables 1, 2 and 5).

2. \*Take-up Rate is an estimate of the percentage of workers with access to a plan who receive a service using that plan

National data (BLS, 2017) related to employer-sponsored benefits are presented in **Table 8.1**. Also provided for reference (in parentheses), is comparable data for the Mid-Atlantic geographic region (BLS 2017, Tables 1, 2 and 5). By most measures, the Mid-Atlantic region, which includes the District of Columbia, shows similar results to national averages. The following summary is based on broad-based trends across the United States as a whole.

**Employer-Sponsored Medical Benefits:** Across the US, on average, 70% of all civilian workers have access to employer-sponsored medical care benefits. However, employee participation was 52% in 2017—49% for private industry workers, and 71% for state and local government.

In 2017, full-time worker access to medical care benefits was 88% versus just 19% for part-time workers. Employer contributions covered 80% of the premiums for individual plans and 68% of premiums for family coverage.

**Employer-Sponsored Retirement Benefits:** Nationally, in 2017, 70% of civilian workers had access to employer-sponsored retirement benefits, with an average of 54% of civilian workers participating—50% for private industry workers to 80% for state and local government workers. Full-time workers have greater access to retirement benefits at 81%, versus 38% for part-time workers.

**Employer-Sponsored Life Insurance Benefits:** Nationally, in 2017, about 59% of all civilian workers had access to employer-sponsored life insurance benefits, in which an estimated 58% participated; 54% in private industry and 79% for state and local government employees.

# The District's Jobs and Employment Context

As the nation's capital, the federal government is the District's largest employer. The District is at the heart of the Washington-Arlington-Alexandria Metropolitan Statistical Area (MSA), one of the 12 largest in the country. Data on Washington Area Employment (US BLS Oct 2017)<sup>6</sup> confirms that the metropolitan area's rate of employment growth matches the national average, although six peer metros exceeded the US average. Total non-farm employment in the Washington MSA was 3.3 million, up 46,000 or 1.4% over the same time in 2016. This was the 43rd consecutive over-the-year employment gain, underscoring a consistent long-term trend for the



Figure 8.1: DC Wage and Salary Employment by Industry 2017

region as a whole. However, while government jobs grew 0.3% nationally over the previous year, the growth rate for the Washington MSA was totally flat (0.0%).<sup>7</sup>

Within the District, the government sector (federal and state combined) constitutes about 30% of total employment, with 80% of those individuals in federal jobs. However, more than two-thirds (70%) of the city's jobs are in the private sector.<sup>8</sup> With only 2% of jobs in manufacturing, the overwhelming majority of jobs in the District are in the services sector, including government jobs, as shown in **Figure 8.1**.

# **EMPLOYMENT by Neighborhood Group** Figure 8.2: Adult Employed Population

#### PERCENTAGE OF EMPLOYED POPULATION (16 YEARS AND OVER) OF CIVILIAN LABOR FORCE



# **UNEMPLOYMENT by Neighorhood Group and Life Expectancy**

Figure 8.3: Adult Unemployed Population

## PERCENTAGE OF UNEMPLOYED POPULATION (16 YEARS AND OVER OF CIVILIAN LABOR FORCE)



## Employment Status in the District

Data presented in **Figures 8.2** and **8.3** show the employment status for District of Columbia adult residents ages 16 years and over, by statistical neighborhood group. **Figure 8.2** shows the employment-to-population ratio, or the percentage of the adult population over 16 years of age in the civilian labor force employed (ACS 2011-2015 estimates).<sup>9</sup>

Within the District, there is wide variation across statistical neighborhood groups. The distribution of employment rate for the adult population across the 51-statistical neighborhood groups ranges from a low of 70% to a high of 97.6%. Wards 2, 3, and 6, those with the highest employment rates, are where there are high concentrations of residents of prime working age, and smaller percentages of young children and older adults.

## Unemployment Status in the District

Unemployment rates for the District by statistical neighborhood group and life expectancy are shown in **Figure 8.3.** The unemployment rate measures the percentage of unemployed people within the labor force. The **labor force** consists of people in paid employment, including the self-employed, as well as the unemployed. Unemployed people are those who report that they are without work; that they are available for work; and that they have taken active steps to find work. It is well known that when unemployment is high, some people become discouraged and may stop looking for work. When this occurs, these individuals are excluded from the labor force count. As a consequence, while the unemployment rate may stop rising, or even fall, this does not necessarily signal economic nor employment opportunity improvement. (OECD, 2016).<sup>10</sup>

For the period 2011–2015, the five-year unemployment estimate for the District was 9.6%. However, nearly half (21 of 51) of statistical neighborhood groups had greater unemployment, with 12 at 18% or above. Ten had at least double the District-wide estimate. Overall, unemployment rates were higher in the east and south, with the highest unemployment rates in Wards 7 and 8, at 19.1% and 22.9% respectively. These rates are higher than in Wards 2 and 3, where the unemployment rate was 3.7% in both, at 40% lower than the national average.

## Conclusion

The employment status maps presented in **Figures 8.2** and **8.3** show significant differences across the District in unemployment rates. Recent data for the District of Columbia, presented in **Figure 8.4**, show that people who are unemployed are more than three times as likely as those who are in the workforce (18%.6 vs. 4.7%), to self-report being only in fair or poor health.

The importance of employment status to health is well documented. People who are employed have better health, and individuals and families supported by stable employment are better positioned to use preventative services and consistently practice healthy behaviors. The increased health risks of unemployment are also well known; people who are unemployed are

54% more likely to have fair or poor health and 83% more likely to develop stress-related conditions and other diseases (Robert Wood Johnson Foundation, 2013).<sup>11</sup> Unemployment is linked not only with loss of health insurance, but increased stress, increased blood pressure, increases in unhealthy coping behaviors, and depression.



# Self Reported Fair or Poor Health By Employment Status, 2015 DC BRFSS

**Figure 8.4: Self-Reported Fair or Poor Health by Employment Status** Source: DC 2015 BRFSS Data, DC Health, Center for Policy Planning & Evaluation (CPPE)

The superimposed life expectancy rates on concentrations in unemployment at the neighborhood level, shown in **Figure 8.3**, reveal that neighborhoods with the highest concentrations of unemployment are in the southern and eastern parts of the District correlated with where the lowest levels of life expectancy prevail.

# References

- 1. Douglas Jr., J.H. (n.d.). James H. Douglass, Jr., quotes. Retrieved from https://www.brainyquote.com/quotes/james\_h\_douglas\_jr\_168534
- 2. Rodin, J.(2015). What exactly is a good job? The Rockefeller Foundation. Retrieved from https://www.rockefellerfoundation.org/blog/what-exactly-is-a-good-job/
- Robert Wood Johnson Foundation. (2011, May). Exploring the social determinants of health: work, workplaces and health. Retrieved from <u>https://www.rwjf.org/content/dam/farm/reports/issue\_briefs/2011/rwjf70459</u>
- 4. Bureau of Labor Statistics. (2016, April). *A profile of the working poor, 2014*. U.S. Department of Labor. Retrieved from <u>https://www.bls.gov/opub/reports/working-poor/2014/home.htm</u>
- 5. Bureau of Labor Statistics.(2017, July). Employee benefits in the United States. Retrieved from <u>http://www.bls.gov/news.release/pdf/ebs2.pdf</u>
- 6. Bureau of Labor Statistics. (2017, October). Washington area employment– October 2017. https://www.bls.gov/regions/mid-atlantic/news-release/areaemployment\_washingtondc.htm
- Bureau of Labor Statistics. (2017, November). Washington area employment—October 2017. US Department of Labor. Retrieved from <u>https://www.bls.gov/regions/mid-atlantic/news-</u>release/areaemployment\_washingtondc.htm
- Office of Labor Market Research. (2017). District of Columbia: wage and salary employment by industry and place of work. District of Columbia Department of Employment Services. Retrieved from <u>https://does.dc.gov/sites/default/files/dc/sites/does/release\_content/attachments/CESdcJune17.p</u> df
- U.S. Census Bureau. (2016). Selected economic characteristics: 2011–2015 American community survey 5-year estimates (Table: DP03). Retrieved from <u>https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\_15\_5YR\_D</u> <u>P03andprodType=table</u>
- 10. OECD. (2015). *In it together: why less inequality benefits all*. OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264235120-en
- Robert Wood Johnson Foundation. (2013, January). Stable jobs = healthier lives infographic. Retrieved from <u>https://www.rwjf.org/en/library/infographics/infographic--stable-jobs---healthier-lives.html</u>



"Though it is easy to imagine how health is tied to income for the very poor or the very rich, the relationship between income and health is a gradient: Discrepancies exist at every level of the economic ladder. Middle-class Americans are healthier than those living in or near poverty, but they are less healthy than the upper class."

#### — Urban Institute<sup>1</sup>

Job-related earned income and benefits make up the lion's share of overall individual and family income in the United States. An estimated 83% of tax filers in 2013 reported income from an employer (Pew Charitable Trust, 2016).<sup>2</sup> In addition to their pay package (wages, salary, allowances, bonuses, and commissions), most people in the United States who have health insurance and retirement savings plans get them through their employers, as part of job-related indirect benefits (insurance, pension plans, and paid leave) that make up their total compensation package. As shown in the US Bureau of Labor Statistics (BLS) data below, jobs with higher pay typically provide more benefits.

All Civilian Workers	Benefit Types						
Income Category	Sick Leave	Paid Vacation	Paid Holidays				
All Private Industry	68%	76%	77%				
• Lowest 10%	30%	42%	41%				
• Lowest 25%	43%	50%	51%				
<ul> <li>Second 25%</li> </ul>	69%	82%	82%				
• Third 25%	81%	89%	90%				
• Highest 25%	89%	91%	92%				
• Highest 10%	92%	92%	93%				
All State and Local Govt.	91%	60%	68%				
• Lowest 10%	65%	44%	51%				
• Lowest 25%	78%	58%	64%				
• Second 25%	95%	85%	88%				
• Third 25%	97%	63%	70%				
Highest 25%	96%	41%	52%				
• Highest 10%	94%	37%	49%				

## Earned Income and Benefits

 Table 9.1: Access to Selected Paid Benefits by Average Income (March 2017) USA

 Source: US Bureau of Labor Statistics, 2017

By one recent estimate, each additional dollar of average hourly pay is associated with another 67 cents per hour in employer spending on benefits. Because indirect employer benefits vary significantly in terms of options, choices, and cost, there is wide variation in the cash value of benefits. As a result, there is substantial variation in total compensation among workers who, theoretically, may earn the same base pay. As an example, the Pew 2016 study found that one-quarter of workers making about \$15 per hour receive less than \$4.02 in benefits; while another quarter of those with the same salary range get more than \$8.00 in benefits (Pew Charitable Trust, 2016).

As detailed in **Table 9.1** above, access to paid benefits varies significantly. For workers with incomes in the lowest income quartile, 41% had access to paid leave; 51% had access to paid vacation; and 53% had access to paid holidays. For workers in the highest income quartile, 87% had access to paid sick leave; 79% had access to paid vacation, and 83% had access to paid holidays (BLS, 2017).<sup>3</sup>

Overall job quality, including the total compensation package, has a direct impact on use of preventative care services. The evidence shows that workers at lower incomes are less likely to get preventive care that can keep them healthy. People with middle and higher incomes with increased access use preventative care services much more frequently; from having a regular doctor's visit to receiving blood pressure and cholesterol checks (Figure 9.1) (Robert Wood Johnson Foundation, 2013).<sup>4</sup>



Figure 9.1: Preventative Care Use by Income — USA

Source: Robert Wood Johnson Foundation, 2013

#### Household Income: Mean and Median

The US Census Bureau defines **household income** as the combined income of all people 15 years and older living in the household. A **household** includes related family members and all unrelated people living in the same residence.

**Mean household income** is the average income earned by all households in a group: that is, a particular demographic segment or a whole geographic area such as a neighborhood, city, or nation. Mean income is the total income of all households divided by the total number of households. It is the simple average. In contrast, the **median income** is the amount that divides the income distribution of the group into two equal parts; half having income above the middle point amount, and half having income below.

Because of these differential calculation methods, mean income is more affected by the spread, or distribution, of income in a group. The more unequal the income distribution, such as when skewed by a relatively small number of high income households, the mean will be significantly higher than the median. Both measures of household income by statistical neighborhood are provided in **Figures 9.2** and **9.3**.

Mean household income: As shown in Figure 9.2, the mean household income by neighborhood covers a very wide range, from just over \$35,800 to nearly \$270,000 per year, using 2015 inflation-adjusted dollars (US Census Bureau, 2016).<sup>5</sup> The District mean household income, at \$107,594, is significantly above the US national mean of \$75,558.

**Median household income:** The median household income for the United States as a whole was \$56,516 in 2015, an increase in real terms of 5.2% from the 2014 median of \$53,718. This was the first annual increase in median household income since 2007, the year before the most recent recession (US Census Bureau, September 2016).<sup>6</sup> As the economy has continued to improve, the national poverty rate decreased, from 14.8% in 2014 to 13.5% in 2015—still 1.0% higher than the pre-recession number in 2007.

In 2016, across all metropolitan statistical areas, the median household income was \$60,542, a 2.7% increase from 2015, at \$58,938. Also in 2016, the regional median income of the Washington DC Metropolitan Area was \$95,843, exceeded only by the San Francisco Metropolitan Area, at \$96,667, which is among the 25 most populous metro areas in the country (US Census 2017).<sup>7</sup>

The income data for the District of Columba provided in **Figure 9.3** shows the five-year average median household income by statistical neighborhood (ACS 2011-2015 estimates). Based on this measure, the five-year average median for the District was \$70,848 (2011–2015), compared with the US average of \$52,889, in 2015 dollars. Median income of District statistical neighborhoods range from \$25,311 to \$200,031, an eightfold difference.

# **INCOME by Neighborhood Group**

Figure 9.2: Mean Household Income

#### MEAN HOUSEHOLD INCOME (IN 2015 INFLATION-ADJUSTED DOLLARS)


# INCOME by Neighborhood Group

# Figure 9.3: Average\* Median Household Income

\*Note: not the true median; it is the average median, because data was aggregated from census tract– level data

#### AVERAGE MEDIAN HOUSEHOLD INCOME (IN 2015 INFLATION-ADJUSTED DOLLARS)



### Income Inequality: National Trends

Rising rates of income inequality across the United States are well documented. The 2016 Congressional Budget Office (CBO) study of 35 years of inequality (1979 to 2013) notes that cumulative growth differed significantly across the income spectrum. In 2013, the household income of the top 1% of households was 188% higher than it was in 1979. Household incomes in the bottom four income quintiles rose only 18% over the same period. Indeed, "all three measures of income examined ... market income, before-tax income, and after-tax income, became less equally distributed, based on a standard measure of inequality known as the GINI Index" (CBO, 2016a).<sup>8</sup>

The 2016 CBO report showed that in 2013, the US average household market-income<sup>3</sup> was \$86,000 but was highly skewed towards households at the top of the income distribution. Households in the lowest one-fifth (quintile) earned \$8,300; households in the middle quintile \$58,600; and those in the top quintile earned \$259,900. The top 1% (1.2 million households) earned an average of about \$1.6 million per household.

The CBO study also showed that, across the 35-year period of 1979–2013, government transfers were critical to reducing income inequality—far more so than the federal tax system. While the effects of federal taxes have been mostly stable since the 1990s, the effects of government transfers have generally fluctuated with the business cycle. It concluded: "The equalizing effects of government transfers increased significantly during the recession that began in 2007. Unlike [as in] previous economic cycles, government transfers have had a sustained effect on reducing income inequality during the subsequent slow recovery" (Congressional Budget Office, 2016a).

#### Wealth Inequality: National Trends

The CBO August 2016 report, "Trends in Family Wealth 1989–2013,"<sup>9</sup> also showed increasing inequality in the distribution of wealth. Between 1989 and 2013, family wealth grew at significantly different rates for different segments of the US population, and the distribution among American families was more unequal in 2013 than it had been in 1989. The trends from 1989 through 2013 are shown in **Figure 9.4.** In 2013, the families in the top 10% of the wealth distribution held 76% of all US family wealth. Those in the 51<sup>st</sup> through 90<sup>th</sup> percentiles held 23%, and those in the bottom 50% held just 1% of US family wealth.

For the top 10% of American families, average wealth was \$4 million. The average falls to just \$316,000 for families in the 51<sup>st</sup> through 90<sup>th</sup> percentiles, and further still to \$36,000 for those

<sup>&</sup>lt;sup>3</sup> Note: All CBO estimates based on "average household market income," a comprehensive income measure that consists of labor income, business income, capital income (including capital gains), and retirement income.

in the 26<sup>th</sup> through 50<sup>th</sup> percentiles. Families at or below the 25<sup>th</sup> percentile were on average \$13,000 in debt.

Significant differences in wealth among age and education groups were also evident in 2013. The median wealth of families headed by someone age 65 or older, at \$211,000, was more than 3½ times that of those of a family headed by someone ages 35 to 49. The median wealth of families headed by someone with a college degree, at \$202,000, was almost four times the median wealth of families headed by someone with a high school diploma (Figure 9.5).



# **Holdings of Family Wealth**







# INCOME AND WEALTH GAPS by Race and Gender

meatan weattn ratios



Note: Blacks and whites include only non-Hispanics. Hispanics are of any race. Source: Pew Research Center tabulations of Survey of Consumer Finances public-use data

PEW RESEARCH CENTER

# Fig: 9.6a: Wealth Inequality by Race and Ethnicity - 2007-2013 (USA)



Median net worth of households, in 2013 dollars



PEW RESEARCH CENTER

Fig: 9.6b: Wealth Inequality by Race and Ethnicity – Since 2007 (USA)

Race: Figs. 9.6 a and b reveal how the Great Recession impacted the wealth of all American households, but unevenly. For many, gains made during the 1990s were wiped out, and the postrecession rebound has been slow and uneven. The median net worth of all households fell, from \$135,700 to \$82,300 between 2007 and 2010, and fell again to \$81,400 in 2013. Taken alone, though, national averages mask critical racial differences, both in pre-recession baselines and the increase in inequality created by a recovery experienced very differently by different racial groups.

In 1989, White household wealth was greater than that of Black households by a ratio of 17:1. By the eve of the Great Recession, in 2007, that ratio had improved to 10:1. **Figures 9.6 a** and **b** chart the disproportionate reductions and recovery in wealth for Whites, Blacks and Hispanics. In 2007, White median wealth was 8.2 times that of Hispanics and 10 times that of Blacks. By 2013, the gap had widened further: White-to-Black median wealth had grown to a factor of 12.9 times, and 10.3 times for White-to-Hispanic wealth (Kochhar and Fry, 2014).<sup>10, 11</sup>

**Gender:** A Pew Research Center study shows persistent gender pay gaps that have narrowed somewhat since 1980. In 2015, American women earned 83 cents for every dollar earned by men, counting both full-time and part-time workers. Women would have to work an additional 44 days per year to equal a man's earnings. For workers ages 24 to 34 that year, the gender wage gap was smaller, with women earning 90 cents for every dollar earned by men. The underlying causes of these gaps continue to relate to career breaks—impacting primarily women/mothers, as compared with men/fathers—to take care of children or other family members (39% of women take such breaks versus 24% of men). Some 42% of mothers (versus 28% of

men) reduced their work hours; 27% of women (10% of men) quit their jobs; and 13% of women (10% of men) turned down a promotion. Gender discrimination was also cited by 42% of women (versus 22% of men) as a contributing factor (Brown and Patten, 2017).<sup>12</sup>

### Income Inequality in the District of Columbia

Income inequality by census tract for the District of Columbia in 2011–2015 is presented in **Figure 9.8.** The five-year average GINI Index score for the District as a whole, at 0.532, was above the US score of 0.479. In 2016, the District was one of just five states/territories with a GINI score higher than the national score of 0.482.<sup>13</sup> The District was also one of just five states with poverty rates at or above 18%. While the average GINI score places the city as a whole among the most unequal in the nation, it is clear that even higher scores above the national average are present at the census tract level all across the city, including all wards *(see areas marked teal to navy blue)*.

Inequality is not new for the District; but it has grown in the post-recession period, and for nearly a decade, gaps have been among the widest of large US cities. One study looking at 2007 to 2014 showed that the average household income of the top 5% of District residents was 52 times the income of the bottom 20% by 2014—the fifth-highest gap among the 50 largest US cities. This has remained statistically unchanged since 2007 (Tuths, 2016).<sup>14</sup>

#### Racial and Ethnic Income Inequality

Within the District, there are large gaps in household income by race and ethnicity (Figure 9.7), with the largest gap occurring between Black and White residents. In 2015, the median household income for White District residents was \$115,890, compared with \$40,677 for Black residents. Black residents are impacted most by income disparities and are the only racial or ethnic group to experience an increase in the poverty rate since 2007. In 2015, about 27% of Black residents in the District lived in poverty, up from 23% in 2007 (Tuths, 2016). Also in 2015, the Black poverty rate was nearly 10% higher than the District-wide rate of 18%. Overall, nearly three-quarters of all District residents who live in poverty are black.



Figure 9.7: Median Household Income by Race/Ethnicity in the District of Columbia

# INCOME INEQUALITY by Census Tract (PNG Neighborhood Overlay)

Figure 9.8: Distribution on the GINI scale

### **GINI INDEX**

Inequality on the GINI scale is a measure between "Zero" and "One"

- A Score of zero (or, 0%) = perfect **EQUALITY**: very **EVEN Income Distribution**
- A Score of one (or, 100%) = perfect INEQUALITY: very UNEVEN Income Distribution



The District is one of just seven

# **INCOME by Neighborhood Group and Life Expectancy** Figure 9.9: Low Household Income (less than \$15,000/year)

#### PERCENTAGE OF HOUSEHOLDS EARNING LESS THAN \$15,000 (IN 2015 INFLATION-ADJUSTED DOLLARS)



### Racial and Ethnic Wealth Inequality

An in-depth and widely publicized study of wealth inequality in the District of Columbia, using survey data from 2013–2014, looked at assets, debts, and net worth of racial and ethnic groups. It showed that the average net worth of a typical White household was \$284,000; 81 times that of Black American households, which averaged \$3,500. The \$250,000 average home value for Black families was two-thirds of that of White and Latino families. Inequities referred to as 'blocked wealth' were linked to two centuries of structural barriers to wealth building, including some of the highest barriers embedded in law. One of the study's conclusions includes the following:

More distressing, homeownership disparities are not a function of education. Higher education is closely tied to higher incomes, which should make homeownership more attainable. But in DC, 80% of Whites with a high school diploma or less are homeowners, while fewer than 45% of all Blacks in the District are homeowners. Fifty-eight percent of Black households do not own homes. (Kijakazi et al., 2016)<sup>15</sup>

#### Conclusion: Putting the Numbers Together

Despite having one of the highest median household incomes, the District's poverty rate—at 18% in 2016—is also among the highest in the nation. As consequence of this combination, the District is also one of a handful of states with rates of income inequality above the national average (US Census 2017b).

An estimated 14.4% of District residents live at or below \$15,000 per year, higher than the national average of 12.5% (Figure 9.9). A total of 17 statistical neighborhoods exceeded the District average. In four neighborhoods, the percentage of families living at or below \$15,000 a year is at least double the District average, peaking at nearly 34% of such households in the St. Elizabeths statistical neighborhood.



Self Reported Fair or Poor Health

Source: DC 2015 BRFSS Data, DC Health, Center for Policy Planning and Evaluation (CPPE)

Figure 9.10: Reported Fair or Poor Health by Income—DC 2015

**Figure 9.10** shows reported rates of fair or poor health, by income. Across the District of Columbia, people with the lowest incomes are more than seven times more likely to report being only in fair or poor health than are those with the highest incomes. These statistically significant differences manifest at every step along the income scale, with a perceptible trend line of poorer perceived health for those with progressively lower incomes.

The superimposed measures of life expectancy, represented by the red dots, overlaying household income, as shown in **Figure 9.9**, help to visualize income as a health driver as it plays out at the statistical neighborhood level across the District. The shortest life expectancy correlates with neighborhoods with the highest concentrations of residents living at \$15,000 per year or less.

These outcomes are consistent with evidence showing that higher incomes and social status are linked with better health. Research also shows that income inequality is linked with health. The greater the gap between the richest and the poorest residents, the greater the differences in health. The data on income inequality and concentrated poverty, including disparate outcomes by race and ethnicity in the District of Columbia, are important indicators of differential opportunities for health across the city.

# References

- Woolf, S.H., Aron, L.Y., Lisa Dubay, L., Simon, S.M., Zimmerman, E., and Luk, K. (2015, April). How are income and wealth linked to health and longevity. Urban Institute. Retrieved from <u>https://www.urban.org/research/publication/how-are-income-and-wealth-linked-health-and-longevity</u>
- The Pew Charitable Trusts. (2016, July). Worker benefits—and their costs—vary widely across US industries. Retrieved from <u>http://www.pewtrusts.org/en/research-and-analysis/issuebriefs/2016/07/worker-benefits-and-their-costs-vary-widely-across-us-industries</u>
- 3. Bureau of Labor Statistics. (2017, March). *Employee Benefits in the United States*. Retrieved from <u>http://www.bls.gov/news.release/pdf/ebs2.pdf</u>
- Robert Wood Johnson Foundation. (2013, January). Stable jobs = healthier lives infographic. Retrieved from <u>https://www.rwjf.org/en/library/infographics/infographic--stable-jobs---healthier-lives.html</u>
- US Census Bureau. (September 2016). Income and poverty in the United States: 2015 (Report Number P60-256). Retrieved from https://www.census.gov/library/publications/2016/demo/p60-256.html
- 6. US Census Bureau. (2016h). *Selected economic characteristics: 2011–2015 American community survey 5-year estimates (Table: DP03)*. Retrieved from <u>http://cdrpc.org/wp-</u> <u>content/uploads/2016/12/Village-of-Colonie\_DP03.pdf</u>
- US Census Bureau. (2017). New American community survey statistics for income, poverty and health insurance available for states and local areas. [Press Release (CB17-157)]. Retrieved from. <u>https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html</u>
- Congressional Budget Office. (2016a, June). *The distribution of household income and federal taxes, 2013.* Retrieved from <u>https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51361-householdincomefedtaxesonecol.pdf</u>
- 9. Congressional Budget Office. (2016b, August). *Trends in family wealth, 1989 to 2013.* Retrieved <u>https://www.cbo.gov/publication/51846</u>
- Kochhar, R., and Fry, R. (2014, December). Wealth inequality has widened along racial, ethnic lines since end of Great Recession. Pew Research Center. Retrieved from <u>http://www.pewresearch.org/fact-tank/2014/12/12/racial-wealth-gaps-great-recession/</u>
- 11. Fry, R., and Kochhar, R. (2014, December). America's wealth gap between middle-income and upper-income families is widest on record. Pew Research Center. Retrieved from <a href="http://www.pewresearch.org/fact-tank/2014/12/17/wealth-gap-upper-middle-income/">http://www.pewresearch.org/fact-tank/2014/12/17/wealth-gap-upper-middle-income/</a>
- 12. Brown, A., and Patten, E. (2017, April). The narrowing, but persistent, gender gap in pay. Pew Research Center. Retrieved from <u>http://www.pewresearch.org/fact-tank/2017/04/03/gender-pay-gap-facts/</u>

- 13. US Census Bureau. (2017). New American community survey statistics for income, poverty and health insurance available for states and local areas. [Press Release (CB17-157)]. Retrieved from <a href="https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html">https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html</a>
- Tuths, P. (2016, February). A city breaking apart: the incomes of DC's poorest residents are falling, while economic growth is benefiting better-off residents. DC Fiscal Policy Institute. Retrieved from <u>https://www.dcfpi.org/wp-content/uploads/2016/02/2-24-16-Income-Inequality-Paper1.pdf</u>
- 15. Kijakazi, K., Atkins, R.M.D., Paul, M., Price, A., Hamilton, D., and Darity Jr., W.A. (2016, October). *The color of wealth in the nation's capital.* Urban Institute. Retrieved from <u>https://www.urban.org/research/publication/color-wealth-nations-capital</u>



"The availability of affordable housing shapes families' choices about where they live, often relegating lower-income families to substandard housing in neighborhoods with higher rates of poverty and crime and fewer health-promoting resources."

- Robert Wood Johnson Foundation<sup>1</sup>

It is estimated that Americans spend up to 90% of their time indoors; and of that time, twothirds is within their homes.<sup>1</sup> Health is affected not only by the physical characteristics of homes and housing units, but also by neighborhood conditions and the broader socioeconomic factors that underlie housing statistics, including cost and affordability, tenure, ownership and wealth-building, location, neighborhood stability, and community safety. These factors also influence social networks, such as neighbors and community engagement, and are consequential to social, emotional, and physical health outcomes. In sum, housing and location influence where and how we live, learn, work, play, and age.



Figure 10.1: A Socioecological Model of Housing and Health\* Source: Robert Wood Johnson Foundation, 2008

The contextual framework for understanding housing as it relates to health is based on a socioecological approach, as presented in **Figure 10.1** above. It emphasizes three interrelated aspects of residential housing:

- 1. Home conditions, including physical conditions and indoor environments
- 2. Housing cost and affordability
- 3. Neighborhood conditions surrounding the home.

In this section, a general summary of housing in the District of Columbia is provided as a key driver of health. It will focus on the first two levels of the model above, including physical conditions of homes and housing cost, with an emphasis on the latter. Neighborhood conditions are the sum of the physical, social, and economic opportunities that create the circumstances surrounding homes and neighborhoods. Collectively, all are important to building healthy communities and the equitable distribution of health opportunities.

### Housing in the District of Columbia: Comparison with the US

The cost of housing in the District is among the highest in the nation. The District rental market is not only one of the most expensive in the country, it is also one of the most expensive in the world. A 2017 report suggests that the typical cost of renting an apartment in the District is approximately \$3.33 per square foot, the fourth highest in the United States, and the sixth most-expensive rental cost worldwide.<sup>2</sup> Based on these numbers, it was estimated that renters in the city would need an income of at least \$57,670 to pay the average rent, or \$1,398 for a 420-square-foot unit, or for a family of four, a minimum income of \$109,756, to pay the average rent of \$2,654.<sup>3</sup>



# Owners and Renters in the District and Nationally, 2008-2015

Figure 10.2: Owners and Renters in the District of Columbia and U.S. Comparisons: 2008–2015

Source: US Census Bureau American Survey 2008- 2015 1-Year Estimates Percentage of occupied housing units.

Notably, the housing tenure pattern in the District contrasts sharply with the national picture, where emphasis on the renter-occupied markets verses the owner-occupied markets are reversed. According to the US Census, national homeownership rates dropped to an all-time low of 63.7% in 2015, down from 69% in 2005.<sup>4</sup> The rate in the District has also declined, but overall the differential between the District and national rates have remained about the same from 2008 to 2015, with the District home-ownership rates at 23 percentage points lower, as shown in **Figure 10.2.** The reduction in home-ownership rates has resulted in a corresponding 4% increase in renters since the recession. In 2015, 60% of District residents were renters.

### Overview: Housing by Ward

Summary data for housing in the District is presented by ward and overall at the District level in **Table 10.1.** While the majority of residents are renters, the average percentage of renteroccupied homes varies considerably by ward, with Ward 8 having the highest percentage of renters, at 79.5%, and Ward 4 having the lowest, at 40.2%. The overall District average owneroccupied rate is higher than the owner-occupied in four wards, with the lowest rate in Ward 8, at 20.5%, and the highest in Ward 4, at 59.8%.

	DC Total	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6	Ward 7	Ward 8
Housing Units (#)	309,574	37,673	43,695	43,695	32,900	35,751	43,638	37,717	34,356
% Vacant	9.9%	7.3%	11.0%	7.2%	7.2%	11.5%	8.1%	13.2%	14.2%
Owner- Occupied %	41.2%	34.1%	35.1%	51.6%	59.8%	47.2%	42.2%	38.0%	20.5%
Renter- occupied %	58.8%	65.9%	64.9%	48.4%	40.2%	52.8%	57.8%	62.0%	79.5%
Median Owner Value	\$475,800	\$542,100	\$623,500	\$823,800	\$491,300	\$379,800	\$573,200	\$238,900	\$229,900
Median Monthly Gross Rents	\$1,327	\$1,459	\$1,871	\$1,772	\$1,124	\$1,088	\$1,574	\$911	\$960
Gross Rent % HH Income	39.8%	32.7%	34.4%	37.7%	43.6%	42.8%	31.0%	49.0%	52.8%
Average Household Size	2.22	2.21	1.68	2.03	2.68	2.41	2.03	2.38	2.62

 Table 10.1: Housing Tenure, Occupancy and Costs by Ward (ACS 2011–2015) OP State Data

 Source: DC Office of Planning, State Data Center, 2016

In 2015, the median owner value in the District was \$475,800, but the range of home values are as high as \$823,800 in Ward 3, and as low as \$229,900 in Ward 8. Median monthly gross rents follow a similar pattern. The citywide median was \$1,327, with the highest average in Ward 2, at \$1,871, and the lowest in Ward 7, at \$911.<sup>5</sup> On average, District residents spend a significant proportion of their income on rent (39.8%). This underscores the importance of housing affordability as a general concern across the District. However, variability by ward and by neighborhood quantifies the extent of the problem for many low-income residents. Residents in Ward 6 have the lowest gross rent-to-household income, averaging 31%, while residents in Ward 8 spend the most, averaging 52.8%.

# Physical Conditions and Indoor Environment

It is well known that poor-quality or inadequate housing can cause adverse health outcomes. Problems with indoor air quality can occur regardless of housing type—in an apartment, townhome, single-family home, an old home, or a newly constructed dwelling.<sup>6, 7</sup> Because most people spend the majority of their time indoors, indoor allergens and irritants play a significant role in triggering asthma attacks. Pollution sources inside the home that release gases or particles are the primary cause of indoor pollution. Poor or inadequate ventilation increases concentrations of some pollutants, either by not letting enough fresh air in, or by restricting the outflow of polluted air.

Data from the US Census Bureau, American Housing Survey (AHS) 2015, Housing Safety Characteristics, indicate that 96% of housing in the District was adequate, with only 3% moderately inadequate, and 1% severely inadequate.<sup>8</sup> For the large majority of residents, smoking and secondhand smoke exposure was not a problem, with 90% of those surveyed stating that they have never smoked in their homes.<sup>7</sup> However, 5% stated that they were regularly exposed (at least monthly) to secondhand smoke, and another 7% reported that they were sometimes exposed.<sup>8</sup>

Homes with issues such as water damage and mold, from a leaky pipe or poor roofing, can lead to poor indoor air quality. Children are the most susceptible to poor air quality and circulation. Residential dwellings can also be susceptible to infestations of rodents or bugs that can carry disease. Conversely, chemicals and poisons used to get rid of infestations may also cause health problems. Older dwellings are more likely to have asbestos or lead paint.

The DC Partnership for Healthy Homes,<sup>9</sup> launched in 2012 by the Department of Energy and Environment (DOEE), is a broad coalition of District agencies and some of the District's most prominent medical providers, managed-care organizations, nonprofits, and environmental health professionals. Participating health providers and social service agencies serve as frontline responders, identifying children in distress due to lead poisoning and severe and poorly-controlled asthma. They also identify the homes of at-risk families, in which pregnant

women live with severe environmental hazards such as mold, deteriorating paint, safety hazards, or pest infestations. DOEE completes an assessment in each home and provides an analysis of the home health threats identified. Referrals may be made to sister agencies or collaborative partners, including the Department of Consumer and Regulatory Affairs, to follow up on any pressing code enforcement concerns, and the Department of Housing and Community Development, for potential enrollment in home repair or lead-abatement grant programs.

## Public and Affordable Housing

Across the United States, public housing was once the primary means by which low-income families were housed. Since the 1970s, however, housing vouchers have enabled low-income residents to rent accommodations in the private market. Despite the diversification of the low-income housing market, public housing still constitutes an important, but shrinking, share of affordable housing options within the District and across the nation. For public housing residents, as well as those using housing vouchers, the goal is to keep housing costs affordable by limiting rent to 30% of income.

According to US Housing and Urban Development (HUD), the DC Housing Authority's (DCHA) low-rent inventory includes 99 developments, plus an additional 4 under construction, for a total of 103 developments or 9,507 low-rent units. DCHA also supports residents in an additional 15,422 units as part of the Section 8 Program in the District.<sup>10</sup> Beyond DCHA, it is estimated that there are an additional 200 low-income housing apartment complexes in the District, which in combination with the housing authority provide a total of approximately 38,500 affordable apartments for District residents. Many of these developments are income-based, of which nearly half set rent prices based on income. There are also other low-income apartments that don't have any rental assistance, but are still considered to be affordable for low-income families.<sup>11</sup>

According to a 2016 study,<sup>12</sup> DC Public Housing primarily serves the elderly, people with disabilities, and very low-income families with children, as follows:

- 25% of the all Public Housing Units (14% of 40 Public Housing Properties) are dedicated for seniors and people with disabilities.
- 55% of all Public Housing households are seniors and residents with disabilities—a total of 4,000 households.
- 33% of all Public Housing households are headed by a senior/elderly person. Of these, half also have a disability.
- 20% of all Public Housing households are headed by a non-elderly person with a disability.

- 35% of all Public Housing households are families with children (over 2,500 families).
- 90% of all Public Housing households have incomes below poverty level.

### Owner-Occupied Housing and Homeownership

The US government spends roughly \$200 billion every year to help Americans buy or rent homes. In 2015, 70% of this money went towards subsidizing homeowners, according to the nonpartisan Center on Budget and Policy Priorities.<sup>13</sup>

As in the rest of the nation, in the city, homeownership has decreased since the recession **(Figure 10.2).** However, increasing rental prices in the city not only makes it harder to afford to live in the District, but also makes it harder for residents to save towards a housing down payment if they want to purchase a home. Consequentially, many residents, especially young professionals, move to less-expensive areas outside the District so they can afford to purchase properties or start families.<sup>14, 15, 16</sup>

## Housing Cost and Affordability

Housing affordability and its implications for health affects both renters and homeowners. Housing generally represents a family's greatest single expenditure, and for homeowners, their most significant source of wealth.<sup>17</sup> The percentage of families spending 30% or more of their income on housing decreases significantly with higher incomes. Those in the bottom quartile of the income distribution spend in excess of 70% of household income on housing. Those in the lower-middle quartile spend an average of 38%. In contrast, the percentage of household income spent on housing falls to 20.8% and 9.0% for those in the upper-middle and upper quartiles, respectively.<sup>17</sup>

Nationally, there are over 11 million households that use over half of their monthly income on rent. There are approximately 25% more such families today than there were a decade earlier.<sup>18, 19</sup> Households that use more than 30% of their monthly income on housing are considered **cost-burdened.** Households that use more than 50% are considered **severely cost-burdened.** Many of the households that use 50% or more on housing costs are at high risk of homelessness; job loss or other financial emergency could put the household in a situation where they are unable to pay rent or make mortgage payments, which could lead to eviction.

Lack of affordable housing and cost-burden stress can affect families and households in both expected and unexpected ways, including through housing instability. Cost-burdened households are at higher risk for eviction. Many people living in these circumstances are senior citizens, people with disabilities, or people caring for a person with disabilities.<sup>18, 19</sup> Cost-burdened households have severely limited resources and therefore spend significantly less on all other basic needs, including food and medical care. One study found that cost-burdened

households frequently delay doctor visits because of the cost.<sup>20</sup> Families, and especially those with children, who are at high housing instability risk due to severe cost burden frequently experience unstable home lives. This often includes overcrowding, making children more prone to increased absences from school and to falling behind in education.<sup>21</sup>

According to the US Census Bureau American Housing Survey 2015, an estimated 14% of District households surveyed experienced some level of food insecurity, 6% were marginally food secure, 5% were low food secure, and 3% were very low food secure. Approximately 10% of District households worried that they would run out of food before getting additional money to purchase more food. Similarly, 9% of these households reported that food they bought did not last, and they had no money to purchase more. Overall, 8% reported that they could not afford to eat a balanced meal (2% said this was often true; and 6%, sometimes true). A total of 3% of District households reported being hungry, but did not eat because there was not enough money for food.<sup>8</sup>

Selected housing characteristics for the District in 2011 through 2015 show that 51% of households spent less than 30% on rent as a percentage of household income. Another 8.9% spent 30 to 34.9% of income on rent. The remaining 39.8% spent 35% or more of household income on rent. <sup>22</sup> Figure 10.3 shows gross rent as a percentage of household income (GRAPI), for residents that pay 35% or more, by statistical neighborhood, in the District. The variation across the District, as well as the concentration of the most cost-burdened, is strongly evident. The District average is 39.8% of household income spent on rent, somewhat lower than the national average (42.7%). Some neighborhoods have very low concentrations of cost-burdened residents, while others have very high concentrations. There are eight neighborhoods where the concentration of these (35%+) cost-burdened households is at or above half of all households (50%), reaching as high as 59% of all households in Historic Anacostia, where high cost-burden households are most concentrated.

As shown earlier, in **Table 10.1**, while both median owner value and median monthly gross rents are both lowest in Wards 7 and 8, the correlation with some of the lowest median household incomes in the District makes residents in these two wards experience the highest concentrations of cost-burden overall, where gross rent to household income averaged 49% and 52% of households, respectively.

# HOUSING COST by Neighborhood Group and Life Expectancy

Figure 10.3: Gross Rent at 35% or More of Household Income

#### GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) 35.0 PERCENT AND MORE



### Homelessness

In 2016, nearly 550,000 people experienced homelessness nationwide.<sup>23</sup>According to the Hunger and Homeless Survey, conducted by the US Conference of Mayors in 32 major cities, homelessness has been on the decline generally.<sup>24</sup> However, in several cities, notably New York, Honolulu, Wichita and the District of Columbia, homelessness increased by over 30% between 2009 and 2016.

Homeless Individuals & Families



Data sources: The Community Partnership for the Prevention of Homelessness, 2017



Within the District, homelessness rose by 34.1% between 2009 and 2016. However, the increase in homeless families was much greater, up by 112% for the same period.<sup>24, 25, 26</sup> In response, and with concerted efforts, there was a significant decline in homelessness in the District overall from 2016–2017, down 10.5%. As shown in **Figure 10.4**, the number of homeless individuals fell by 2.7%, and the number of homeless families dropped by 21.8%, from 2016 to 2017. As of January 2017, there were 1,166 homeless families, including a total of 3,890 homeless people (parents and children), with children making up nearly 60% of this total. In addition, there were another 3,583 homeless single adults living in the District.<sup>27</sup> However, the majority of homeless individuals are actually children under the age of 18 years. Homelessness can delay a child's mental, physical, emotional, social, and behavioral developments. The District has a low rate of unsheltered homeless people and homeless youth. According to the 2015 Homeless Youth Census, 43% of homeless young people in the District identify as LGBTQ. <sup>28, 29, 30, 31</sup>

Homeless Adult Subpopulations, DC, 2017 Reported Disabling Conditions								
	Individuals	Adults in Families	Total (All Adults)					
Chronic Substance Abuse (CSA)	29%	4%	19%					
Severe Mental Illness (SMI)	35%	13%	27%					
Dual Diagnosis (CSA & SMI)	14%	2%	9%					
Chronic Health Problems	20%	3%	13%					
Living with HIV/AIDS	4%	0%	3%					
Physical Disability	20%	4%	14%					
Domestic Violence History	20%	26%	22%					
Homelessness Due to DV	7%	8%	8%					
Limited English Proficiency	9%	6%	8%					
U.S. Military Veterans	9%	0%	6%					

# Table 10.2 Homelessness Adults, Selected Reported Disabling Conditions 2017 Source: The Community Partnership, Point-in-Time Survey, 2017

People experience homelessness for many reasons, including lack of affordable housing opportunities and lack of employment. In 2017, 60% of homeless single individuals and 31% of homeless adults in families reported having no income from any source.<sup>27</sup> However, 16.7% of single individuals and 25% of adults in families reported being employed. As shown in **Table 10.2**, struggles with mental illness, chronic health problems, a history of domestic violence, physical disabilities and many other disabling conditions are often root causes or co-contributing factors. Living with a severe mental illness (20.4%), having a current incident or history of domestic violence (22.6%), and dealing with chronic substance use (19.2%) affected the highest number of homeless adults in the District in 2016.<sup>27</sup>

Nationally, the US Interagency Council on Homelessness has embraced a proven "Housing First" approach,<sup>32</sup> in which people experiencing homelessness are offered permanent housing with few to no treatment preconditions, behavioral contingencies, or barriers. It is based upon overwhelming evidence that all people experiencing homelessness can achieve stability in permanent housing if provided with the appropriate levels of services. Study after study has

shown that Housing First yields higher housing retention rates, reduces the use of crisis services and institutions, and improves people's health and social outcomes.

In advocating for a community-wide Housing First model approach, the US Interagency Council notes that this strategy can be adopted by housing programs and organizations and can be used across the housing crisis response system. The approach applies in both short-term interventions, such as rapid re-housing, and long-term interventions, such as supportive housing. For crisis services, such as emergency shelter and outreach, the Housing First model includes referrals and assistance to obtain permanent housing.

The District has an Interagency Council on Homelessness and a Strategic Plan to Prevent and End Youth Homelessness, with a clear vision to end homelessness in the District (Executive Office of the Mayor, 2017).<sup>33</sup> The approach is to use data-focused methods to gauge the root cause of youth homelessness, including cost and intervention strategies. Overall, helping young homeless people avoid becoming trapped in a cycle of chronic homelessness, with its many associated risks, can decrease the adverse effects on young people.

## Conclusion

Quality affordable housing is critical to protecting individuals and families from harmful environmental exposures and to provide them with a sense of privacy, security, and stability, and a sense of control, all of which is important for physical and behavioral health. Homes that are safe and free of physical hazards protect residents from injuries and infectious and chronic diseases and promote the health and wellness of their occupants.

Housing affordability relative to income is critical to determining how much disposable income individuals, families, and households have, after paying for housing, to meet other basic needs. Severely cost-burdened households are frequently under financial strain, and must often make difficult trade-offs between essentials such as food, utilities, and medical bills.

Families who lack affordable housing experience residential instability, which is known to be associated with emotional, behavioral, and academic problems in children, as well as increased teen pregnancy, early drug use, and depression during adolescence, all of which have cumulative and long-term health consequences.<sup>1</sup>

The risk factors associated with homelessness are also well established, including the related root causes, such as social, emotional, and behavioral health, and substance use. Addressing homelessness within a public health and Housing First paradigm is critical to breaking the cycle for individuals and families experiencing homelessness.

The overlay of life expectancy by neighborhood and the percentage of households spending more than 35% of income on housing in the District, as shown in **Fig 10.3**, underscores the correlation between high housing cost burden and reduced life expectancy.

# References

- Robert Wood Johnson Foundation. (2008, September). Where we live matters for our health: The links between housing and health. Retrieved from <u>http://www.commissiononhealth.org/PDF/e6244e9e-f630-4285-9ad7-</u> 16016dd7e493/Issue%20Brief%202%20Sept%2008%20-%20Housing%20and%20Health.pdf
- Domen, J. (2017, February). DC ranks among world's most expensive rental markets. WTOP. Retrieved from <u>https://wtop.com/real-estate/2017/02/dc-ranks-among-worlds-most-expensive-rental-markets/</u>
- Lerner, M. (2017). If you think D.C. has the most expensive rents in the nation, it's not a far stretch. Washington Post. Retrieved from <u>https://www.washingtonpost.com/news/where-welive/wp/2017/02/28/if-you-think-d-c-has-the-most-expensive-rents-in-the-nation-its-not-a-farstretch/?noredirect=onandutm\_term=.c7b8de7dd142
  </u>
- US Census Bureau. (2017c, October). Quarterly residential vacancies and homeownership, third quarter 2017. [Press Release: CB17-170]. Retrieved from <u>https://www.census.gov/housing/hvs/files/currenthvspress.pdf</u>
- DC Office of Panning. (2016). Key demographic indicators: District of Columbia and the United States: American community survey 5-year estimates 2011–2015. Retrieved from <u>https://planning.dc.gov/sites/default/files/dc/sites/op/page\_content/attachments/Key%20Indic</u> <u>ators%202011-2015\_0.pdf</u>
- 6. <u>US Environmental Protection Agency. (n.d.(a)). Protect indoor air quality in your home.</u> <u>Retrieved from https://www.epa.gov/indoor-air-quality-iaq/protect-indoor-air-quality-your-home</u>
- 7. <u>US Environmental Protection Agency. (n.d.). Asthma triggers: Gain control. Retrieved from</u> <u>https://www.epa.gov/asthma/asthma-triggers-gain-control</u>
- 8. US Census Bureau. (2016T). *American housing survey (AHS).* US Department of Commerce. Retrieved from <u>https://www.census.gov/programs-surveys/ahs/data.html</u>
- DC Partnership for Healthy Homes. (n.d.). The need for healthy housing. DC Department of Energy and Environment. Retrieved from <u>https://doee.dc.gov/service/dc-partnership-healthy-homes</u>
- US Housing and Urban Development (HUD). (2018). General housing authority details DC001 DC Housing Authority 7.12.2018. Retreived from <u>https://pic.hud.gov/pic/haprofiles/haprofiledetails.asp</u>
- 11. Affordable Housing Online. (n.d.). *Affordable housing in Washington*. David Layfield and ApartmentSmart.com. Retrieved from <u>https://affordablehousingonline.com/housing-search/District-Of-Columbia/Washington</u>
- 12. Zippel, C. (2016, January 27). *DC's public housing: An important resource at risk*. DC Fiscal Policy Institute: Washington, DC. Retrieved from <u>http://www.dcfpi.org/wp-</u> <u>content/uploads/2016/01/16-01-27-Public-housing-paper-final.pdf</u>

- 13. Fischer, W, and Sard, B. (2017, March 8). *Chart book: Federal housing spending is poorly matched to need*. Retrieved from <u>https://www.cbpp.org/sites/default/files/atoms/files/12-18-13hous.pdf</u>
- 14. US Census Bureau. (2017e). The South is home to 10 of the 15 fastest-growing large cities. [Press Release: CB12-81]. Retrieved from https://www.census.gov/newsroom/pressreleases/2017/cb17-81-population-estimates-subcounty.html
- Frey, W.H. (2017). City growth dips below suburban growth, Census shows. Brookings. Retrieved from https://www.brookings.edu/blog/the-avenue/2017/05/30/city-growth-dipsbelow-suburban-growth-census-shows/
- 16. Goldchain, M. (2017, April 17). For millennials, is living in DC worth it? Retrieved from https://dc.curbed.com/2017/4/17/15301502/millennial-washington-dc
- Robert Wood Johnson Foundation. (2008, September). Where we live matters for our health: The links between housing and health. Retrieved from <u>http://www.commissiononhealth.org/PDF/e6244e9e-f630-4285-9ad7-</u> 16016dd7e493/Issue%20Brief%202%20Sept%2008%20-%20Housing%20and%20Health.pdf
- 18. Boghani, P. (2017, May 9). A housing affordability crisis that's worse for the lowest-income americans. Retrieved from <u>http://www.pbs.org/wgbh/frontline/article/a-housing-affordability-crisis-thats-worse-for-the-lowest-income-americans/</u>
- Joint Center for Housing Studies of Harvard University. (2015). The state of the nation's housing 2015. Retrieved from <u>http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/jchs-sonhr-</u> 2015-full.pdf
- Stahre, M. VanEewyk, J., Sigel, and P. Njal, R. (2015, July 9). Housing insecurity and the association with health outcomes and unhealthy behaviors. Retrieved from <u>https://www.cdc.gov/pcd/issues/2015/14\_0511.htm</u>
- Cunningham, M., and MacDonald, G. (2012, May). Housing as a platform for improving education outcomes among low-income children. Retrieved from <u>http://www.urban.org/sites/default/files/publication/25331/412554-Housing-as-a-Platform-for-Improving-Education-Outcomes-among-Low-Income-Children.PDF</u>
- 22. US Census Bureau. (2011–2015). *American community survey 5-year estimates*. Retrieved from <u>https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF</u>
- 23. Henry, M., Watt, R., Rosenthal, L., and Shivji, A. (2016, November). Part 1: Point-in time estimated of homelessness: The 2016 annual homeless assessment report (AHAR) to Congress.
   U.S. Department of Housing and Urban Development: Office of Community Planning and Development. Retrieved from <a href="https://www.hudexchange.info/resources/documents/2016-AHAR-Part-1.pdf">https://www.hudexchange.info/resources/documents/2016-AHAR-Part-1.pdf</a>
- Lowe, E.T., Poubelle, A., Thomas, G., Batko, S., and Layton, J. (2016). *The US Conference of Mayors' report on hunger and homelessness*. U.S. Conference of Mayors: Washington, D.C.. Retrieved from <u>https://endhomelessness.atavist.com/mayorsreport2016</u>

- 25. The Homeless Services Planning and Coordinating Committee. (2009). The 2009 count of homeless persons in shelters and on the streets in Metropolitan Washington. Metropolitan Washington Council of Governments. Retrieved from <u>www.mwcog.org/asset.aspx?id=pubdocuments/zVZeVw20090513103355.pdf</u>
- 26. Chapman, H. (2017, May). Homelessness in Metropolitan Washington: Results and analysis from the annual point-in-time count of persons experiencing homelessness. Metropolitan Washington Council of Governments. Retrieved from <u>https://www.mwcog.org/file.aspx?D=D8jiV5of6AkbJV%2Fjbhu792YnLGqUpAqhimeK8q5oS</u> <u>QY%3DandA=0%2BGsGWAyRiT8ngsv8pt1rq4YcUfPQ50gNKk%2Fc8K%2BPu4%3D</u>
- The Community Partnership for the Prevention of Homelessness. (2017, May). District of Columbia 2017 point-in-time enumeration. Retrieved from <u>http://www.communitypartnership.org/LiteratureRetrieve.aspx?ID=136856</u>
- 28. Davis, A.C. (2016, May 11). There are now more homeless kids and parents in DC than homeless single adults. Washington Post. Retrieved from <u>https://www.washingtonpost.com/local/dc-politics/there-are-now-more-homeless-kids-and-parents-in-dc-than-single-adults-for-the-first-time/2016/05/11/d4d256c2-16f5-11e6-9e16-2e5a123aac62\_story.html?utm\_term=.b3d004b7b147</u>
- 29. Moyer, J. W. (2016, December 16). D.C. has the highest homeless rate of 32 U.S. cities, a new survey finds. Washington Post. Retrieved from <u>https://www.washingtonpost.com/local/dc-has-the-highest-homeless-rate-of-38-us-cities-a-new-survey-finds/2016/12/14/95487b3c-c18e-11e6-9a51-cd56ea1c2bb7\_story.html?utm\_term=.b91463cd9c50</u>
- Bahrampour, T. (2016, January 13). Nearly half of homeless youth are LGBTQ, first ever city census finds. Washington Post. Retrieved from <u>https://www.washingtonpost.com/local/socialissues/nearly-half-of-homeless-youth-are-lgbtq-first-ever-city-censusfinds/2016/01/13/0cb619ae-ba2e-11e5-829c-26ffb874a18d\_story.html
  </u>
- 31. Department of Human Services. (2015). Homeless youth census 2015. Government of the District of Columbia: Washington, D.C. Retrieved from <u>https://dhs.dc.gov/sites/default/files/dc/sites/dhs/release\_content/attachments/Homeless%20</u> <u>Youth%20Census%20One%20Pager.pdf</u>
- 32. U.S. Interagency Council on Homelessness. (2017, January). *Housing first*. Retrieved from https://www.usich.gov/solutions/housing/housing-first
- 33. Executive Office of the Mayor. (2017, May 19). Mayor Bowser launches Solid Foundations DC: The District's comprehensive plan to end youth homelessness [Press Release]. Retrieved from <u>https://mayor.dc.gov/release/mayor-bowser-launches-solid-foundations-dc-district'scomprehensive-plan-end-youth</u>



"Transportation decisions that take place upstream affect our lives downstream. We all use various ways to get to work or school, to access healthy foods, and to do countless other things every day. Yet poor transportation decisions can harm health and are not always fair across all communities."

#### - American Public Health Association<sup>1</sup>

Opportunities for health are heavily impacted by affordable, accessible, and safe transportation. The lack of mobility resulting from inadequate access to transportation affects individuals and communities in many ways. At the community level, decreased access to safe, affordable, and reliable transportation can undermine residents' ability to access employment opportunities, education, healthy food sources, recreational activities, and medical services.

	DC Total	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6	Ward 7	Ward 8
% Households with Vehicle	63.6%	53.4%	50.7%	77.5%	77.6%	69.7%	66.8%	60.7%	52.0%
Commute by: Private Car	39.4%	25.3%	20.8%	46.9%	53.4%	49.3%	33.9%	54.5%	50.6%
Commute by: Public Transit	37.4%	47.8%	29.2%	34.9%	35.6%	35.6%	37.9%	39.1%	40.1%
Commute by: Walk/Other	12.9%	12.6%	38.6%	7.7%	2.2%	6.2%	15.8%	2.5%	4.5%
Mean Travel Time – Mins.	29.7	30.1	23.8	28.8	32.6	30.5	27.0	35.3	35.9
Worked at Home %	5.0%	5.6%	5.6%	7.0%	5.0%	3.1%	5.9%	1.8%	2.9%
Unemployed %	9.6%	6.6%	3.7%	3.7%	9.9%	14.1%	6.3%	19.1%	22.9%

Table 11.1: Vehicle Ownership and Commuting Patterns by Ward (ACS 2011–2015)

Source: Office of Planning, 2016, *Key Demographic Indicators: District of Columbia and the United States:* American Community Survey 5-Year Estimates 2011–2015.

## Transportation Options and Commuting Patterns in the District

According to the Bureau of Labor Statistics, in 2015 US citizens spent 17% of their annual income on transportation—the second-highest expenditure, next to housing (32%).<sup>2</sup> This means the average US resident will typically spend half (49%) their income on housing and transportation combined, leaving the remaining 51% to cover all other needs.

Because the District is at the heart of the Washington metropolitan area, regional commuting patterns have a major influence on transportation availability and use. It is estimated that only 28% of people employed within the District are residents: 33% commute from Maryland, and about 23%, from Northern Virginia.<sup>3</sup>

The proximity of jobs and housing opportunities, as well as transportation cost, influence commuting patterns and choice of transportation mode. Studies show that 35% of people are willing to walk up to one mile to go to work, but only 1% would regularly walk three to four miles to work.<sup>4</sup> **Table 11.1** shows the varying rates of household access and usage of personal, private, and public modes of transportation in the District, including commuting times and distance traveled, by ward. Overall, nearly 13% of District residents use personal non-motorized modes of transportation, including walking, to commute to work, significantly higher than the national average of 4.6%.<sup>5</sup> However, the average use of non-motorized transportation varies significantly, from the very high rate of 38.6% in Ward 2, at the center of the city where jobs are concentrated, to much lower rates, at just above 2%, in Wards 4 and 7.

Differential rates of household car ownership and use across the District is also presented in the table. While nationally, only 9.1% of households have no access to a car, the rate in the District is nearly four times higher, at 36.4%. In large part, the combination of the District's small size and high density with the availability of public transportation explains the higher rate of households without access to a car. Indeed, the District is ranked 4<sup>th</sup> out of 50 urbanized areas for the most transit travel. However, slightly more District residents commute to work by car (39.4%), than by public transportation (37.4%).

While it is recognized that District households may actively choose not to own a car, many simply cannot afford one. Nationally, it is estimated that up to 60% of households without a car are low-income.<sup>6</sup> Households without access to a car are highly reliant on public transportation for daily travel. Therefore, even within the District's relatively transit-rich environment, there remain gaps in service and accessibility—especially further away from the city center.

High rates of car ownership in combination with low rates of car commuting and high transit usage suggest the availability and affordability of transportation options and choices. Where transit is limited, inconvenient, or absent, however, residents may have no option but to devote sometimes scarce resources to car purchase and use. Higher rates of car ownership and car commuting are indicated for outer wards generally. However, the close tracking of high car ownership with high car commuting, in Wards 7 and 8 particularly, are perhaps evidence of the phenomenon whereby car ownership appears to be a necessity.

# **TRANSPORTATION by Neighborhood Group**

## Figure 11.1: Households Zero Car or Transit Dependent and Main Transit Lines

### PERCENTAGE OF OCCUPIED HOUSING UNITS WITH NO VEHICLES



In contrast, high percentages of households without access to a car and low rates of car commuting, in combination with higher rates of transit use, walking, or other commuting methods, is perhaps indicative of materially different transportation access and choice circumstances in Wards 1 and 2, where there is the greatest transportation mix, including multiple public transportation options.

## Regional and Local Accessibility

Metro stations, Metro lines, and Rapid Bus Lines, are included in **Figure 11.1**, superimposed for reference. The District's Metrorail lines and stations and the Rapid Bus service intersect at some locations and are concentrated in the center. Large areas within the District have limited direct access to these main transit arteries and are reliant on more localized bus services to connect with main lines.

The regional Metro Transit System includes Metrorail and Metrobus. Metrorail transit serves more than 600,000 customers a day across the Washington, DC, area. The system is the second largest in the nation, serving 91 stations in the District, Maryland and Virginia. The six color-coded lines make it possible to travel between any two stations with no more than a single transfer (WMATA, n.d.).<sup>7</sup>

Metrobus provides more than 400,000 trips each weekday, serving 11,500 bus stops across the District, Maryland and Virginia. MetroBus is the sixth-largest bus agency in the country, with a fleet of more than 1,500 buses operating on 325 routes. The Metrobus system serves eleven transit centers in Maryland and Virginia (WMATA n.d.).<sup>7</sup>

Because the Metro system has traditionally been oriented to the needs of long-distance suburban commuters from outside of the District, there is some mismatch between residential density within the District and the location of Metro Stations, especially in Wards 3, 4, 7, and 8. To fill this gap, there is a supporting web of local-service bus lines (not shown), beyond the primary Metrorail and Metrobus arteries.<sup>8, 9</sup>

Connector bus services are important, but may have limitations in utility and use. Research has shown that people are more willing to walk farther to access more rapid transit, such as rail versus bus. The benchmark distances of a quarter mile (or 10-minute walk) from transit to jobs is what people are willing to walk, with a maximum of a half-mile to homes and residences.<sup>10, 11</sup> The new DC Streetcar is free, providing services in the H Street Corridor. Although limited in the distance traveled within the District currently, its proposed extension in terms of both roots and locations are highly anticipated.<sup>12, 13</sup>

# Zero-Car and Transit-Dependent Households In the District

The percentage of households across the District that have no access to a private vehicle, by neighborhood, is presented in **Figure 11.1.** Although 36.4% of District households have no vehicle available, and therefore are potentially transit-dependent, there is considerable geographic variability. Several neighborhoods, especially in the northwest, have relatively few households without a car. Note, too, that this is also generally true for neighborhoods where data has been suppressed, because the actual number of households that fall into the category are too small for statistical analysis and prone to large margins of error. Neighborhoods towards the city center have relatively high concentrations of households without access to a car, but this is balanced by high levels of transit availability, with the highest rates of commuting by transit in Ward 1 (47%).

Concentrations of zero-car and transit-dependent residents are most widespread, and at their highest levels, in neighborhoods to the south and east, where the households without access to a car exceed the District average in most neighborhoods. In several neighborhoods, up to half of all households fall into this category, notably Fort Dupont, Douglass, Bellevue and St. Elizabeths, all in Wards 7 and 8. Rates of transit commuting in these two wards are high, in combination with relatively high rates of car commuting. Very low rates of non-motorized (walking or other methods) commuting also suggest few job opportunities in and around these neighborhoods. Overall, the correlation with high unemployment rates in Wards 7 and 8, 19.1% and 22.9%, respectively—more than twice the District rate—underscore the critical connections between the spatial location of jobs relative to homes and the importance of transportation opportunities in bridging these gaps.

# Benefits of Public Transportation

Poor access to public transportation correlates with decreased income and higher rates of unemployment, while decreased access to active transportation is linked to decreased physical activity.<sup>14</sup> In 2016, Americans took 10.4 billion trips using public transportation, a 34% increase since 1995. Public transit is also an important economic asset, with the US transit system estimated to employ nearly 400,000 people nationally.<sup>15</sup> Public transportation jobs can provide economic opportunities and serve as an important resource for lower-skilled individuals and families and the under-employed.<sup>16</sup> Public transportation, when reliable and affordable, can not only provide mobility, but also can have a positive impact on economic growth and quality of life, including jobs and access to services.

Public transportation is an important community investment and shared asset on which 36% of District households depend. By one estimate, District residents that make the switch from private to public transportation could save in excess of \$9,800 annually.<sup>17</sup> Despite these potential advantages, the cost of transportation remains a challenge for residents with low incomes. After a 2017 increase, Metro prices range from \$2.00 to \$4.75 per bus trip and vary

for rail by peak hours. Low-income individuals and families, as well as elderly residents on fixed incomes, are those most affected by this change.<sup>18, 19</sup>

Transportation cost also impacts school attendance rates. According to Office of the State Superintendent of Education (OSSE), lack of affordable transportation and inadequate transportation were listed as barriers to attendance for some students.<sup>20</sup> In the 2013–2014 school year, transportation was identified as the underlying reason for absence or lateness in 6% of student truancy cases.<sup>21</sup> With about 75% of students in the District attending schools outside of their neighborhoods, the Kids Ride Free program (introduced in the 2016–2017 school year)—which allows students to ride Metro transit at no cost, to school and school-related activities—has been essential to supporting attendance and educational opportunities.<sup>22, 23</sup>

Using public transportation also has health benefits. Studies have found that built environments that promote walking and non-motorized commuting and public transportation benefit from increased energy efficiency, lower rates of traffic injuries and fatalities, and lower rates of air pollution.<sup>24</sup> Public transportation enables increased passenger miles traveled, in combination with decreased vehicle miles traveled.<sup>25</sup> Public transportation is also safer than driving, with Metrorail estimated to be 20 times safer and riding the bus 60 times safer.<sup>26, 27</sup> Public transportation usage is also positively correlated with increases in walking or biking. More people using public transportation results in fewer cars on the roads, which in turn improves physical activity, yields fewer accidents, and lowers pollution-causing emissions.

# Active Transportation and Health

Active transportation is any self-propelled, human-powered mode of transportation, such as walking or bicycling,<sup>28</sup> which integrates physical activity into the daily routine. Although public transportation is not typically defined as active transportation, studies have shown a higher level of physical activity among public transportation riders. The relatively higher level of physical activity among public transit riders results from the fact that every public transportation trip is a multi-modal trip, as most transit passengers walk to or from stops and stations or make other trips by foot during the course of the day.<sup>29</sup>

The rise of obesity, heart disease, stroke, and other chronic health conditions across the United States is linked with the growth of physical inactivity. Many of the barriers to active lifestyles are related to a built environment in many communities designed primarily to accommodate cars. As a consequence, walking and bicycling can be unsafe if not impossible, due to high speed and heavy traffic, lack of sidewalks and crosswalks, and limited bicycle lanes and facilities.

The District of Columbia is a national leader in active transportation opportunities and investments. In a 2008–2012 comparison by state, the District had the highest percentage of

residents (12%) who walk to work, with the closest two states in second and third at only half the District rate.<sup>5</sup> The District's bicycling commuter rate (3%) was also higher than all other states. In comparing walking commuter rates, only Boston, at 15%, topped the District.

### Bicycling, Bike Lanes, and Capital Bike Share

The availability of bicycling opportunities makes the District one of the most livable cities in the country, and has long been envisioned as part of the District's transportation options, as documented in the District of Columbia 2005 Bicycle Master Plan.<sup>30</sup> The plan was a guide to establishing high-quality bicycle facilities and programs over the following 10 years, including 20 miles of additional bike paths by 2007.

At the 2005 baseline, the District had 17 miles of bike lanes, 50 miles of bike paths, and 64 miles of bicycle routes. The plan documented significant growth in infrastructure in the four years leading up to publication (2001–2005):

- Improvements to the bicycle system included 15 miles of bike lanes.
- More than 400 bike racks were installed in the downtown area, at District government offices, public libraries, and retail locations.
- Metrorail eliminated the permit required for bringing bikes on trains and expanded bike access hours in 2004.
- More than 8,000 bicycle trips were made on Metro trains in a two-week period in August 2005.
- All Metrobuses were equipped with bicycle racks in 2002.

The 2005 Bicycle Master Plan noted both economic and health benefits of bicycling. Specifically, biking to the store, school, or work provides a time-efficient and low-cost way to get the recommended daily physical activity, which thereby helps to reduce heart disease, diabetes, and other chronic illnesses among District residents.

Capital Bikeshare began services within the District and surrounding region in 2010. **Figure 11.2** shows BikeShare stations by neighborhood, as well as bike lanes across the District. As shown, the distribution of the 265 stations is heavily concentrated within the center of the city, with significantly fewer outside of the core. One-quarter of all stations (26.6%) are located in just two statistical neighborhoods—the National Mall, and Chinatown. With the addition of the next four neighborhoods—all of which are immediately adjacent, with 12 to 14 stations each—six neighborhoods at the center of the city account for 73% of all Capital Bikeshare access points in the District. Wide availability in central locations is an asset to the many zero-car and transit-dependent households, as well as for commuters, tourists, and visitors to the nation's capital. However, there are fewer stations, and relatively sparse access opportunities beyond the

center, especially in other areas of the city where other transportation options are also limited, including reduced car ownership and other modes of public transit. As noted in the Alliance for Biking and Walking (2016) report,<sup>31</sup> station density is key to creating an equitable bike-share system.

Concerns have also been raised about the distribution of bike lanes, their concentration within the center of the city, and the fact that some are not well aligned or close to Bikeshare locations. In addition to spatial distribution, issues of access and utilization across the full spectrum of demographic groups has been raised. One study found that even within the District, those utilizing Capital Bikeshare are mostly white males (80%) and that a significant proportion (39%) of users have earned annual incomes of \$100,000 or above, and more than half (54%) have earned annual incomes below \$75,000. <sup>32</sup> This demographic utilization picture is, however, not inconsistent with national trends. A 2014 report by the US Census on active transportation commuting modes concluded that "the two groups with the highest rates of commuting by biking and walking were the most-educated and least-educated workers." <sup>5</sup>

MoveDC, the District of Columbia's Multimodal-Long Range Transportation Plan published in 2014, includes a Bicycle Element, updating the 2005 Master Plan. As a result of District investments, bicycling rates have increased, and peak hour cycling volumes have quadrupled since 2004, when fewer than 15 miles of bike lanes were available. In identifying bicycling as the mode with the greatest potential to accommodate more demand, the moveDC Bicycle Element (DDOT, 2014),<sup>31</sup> noted significant growth which contributed to:

- The 2005 baseline bicycle commute share goal of 3% achieved by 2010
- The city on track (2014) to meet the bicycle commute share goal of 5% by 2015
- Some neighborhoods in downtown had already achieved bicycle commute shares up to 15%
- Opportunity to expand bicycling investments beyond downtown

In order to improve neighborhood accessibility and connectivity, the moveDC Bicycle Element (2014)<sup>33</sup> long-range plan, recommends 213 additional miles of bicycle infrastructure by 2040. The goal is to provide 97% of the forecast District population with access to a bicycle facility (trail, cycle track, or bike lane) within a 2-minute ride of their residence; and ensure 80% have access to a protected facility (trail or track).

# **TRANSPORTATION by Neighborhood Group**

Figure 11.2: Capital Bike Share Locations and Bike Lanes

### NUMBER OF CAPITAL BIKE SHARE LOCATIONS AND BIKE LANES



# **TRANSPORTATION by Neighborhood Group and Life Expectancy**

Figure 11.3: Zero-Car and Transit-Dependent Households

#### PERCENTAGE OF OCCUPIED HOUSING UNITS WITH NO VEHICLES


### Conclusion

To the extent possible, transportation should be affordable, accessible, and active. Affordable transportation access is essential for connectivity to a range of goods and services essential to daily life, including jobs, schools, daycare, food, and hospitals and preventative health services. Inadequate transportation limits the opportunities available to people and whole communities, based on where they live. With economic mobility linked to geographic mobility, opportunities for social and economic success, as well as health itself, can be dependent on transportation access and opportunities.<sup>34</sup>

Investing in public transportation, bicycle, and pedestrian facilities creates opportunities for people to incorporate active exercise into their daily routines. Improving these infrastructure elements could encourage biking to school and walking to work. Safe and convenient opportunities for physically active travel also expands access to transportation networks for people without cars, spurs investment in infrastructure to increase the comfort of the on-road experience, and improves the appeal and safety of active modes to all people.<sup>28</sup> The provision of active transportation modes is especially important within low-income and minority communities, or communities with high percentages of new immigrants, where levels of private car ownership are low. People in these communities must frequently endure unsafe streets that pose barriers to active transportation.<sup>29</sup>

**Figure 11.3** shows the percentage of households, by neighborhood, without access to a private vehicle, and who, therefore, are transit-dependent. Superimposed measures of life expectancy show the correlation between those neighborhoods least impacted by transportation barriers with the highest life expectancies.

Increased provision of public transportation has broad community-wide benefits, including shared economic advantages. More public transportation improves community connectivity and integration, enabling low-income, elderly, and disabled individuals to gain greater mobility and independence, with improved access to jobs, recreation, and other essential services, including preventative care.<sup>35</sup>

# References

- 1. American Public Health Association. (n.d.). *Transportation and health*. Retrieved from <u>https://www.apha.org/topics-and-issues/transportation</u>
- 2. US Bureau of Labor Statistics. (April 2017). *Consumer expenditures in 2015.* BLS Reports. Retrieved from <u>https://www.bls.gov/opub/reports/consumer-expenditures/2015/home.htm</u>
- 3. US Census. (n.d.). County-to-county worker flow files. Retrieved from <u>https://www.census.gov/population/www/cen2000/commuting/index.html</u>
- Robert Wood Johnson Foundation. (October 2012). Better transportation options equal healthier lives infographic. Retrieved from <u>https://www.rwjf.org/en/library/infographics/infographic--better-transportation-options---healthier-lives.html</u>
- US Census Bureau. (May 2014). Modes less traveled bicycling and walking to work in the United States: 2008–2012. American Community Survey Reports. Retrieved from <u>https://www.census.gov/prod/2014pubs/acs-25.pdf</u>
- Tomer, A. (2011). Transit access and zero-vehicle households. Brookings Metropolitan Policy Program. Retrieved from <u>https://www.brookings.edu/wp-</u> content/uploads/2016/06/0818 transportation tomer.pdf
- 7. Washington Metropolitan Area Transit Authority (WMATA). (n.d.). Rail service information. Retrieved from <u>https://www.wmata.com/service/rail/index.cfm</u>
- 8. Burger, N. (2016). We know where most of DC's population lives. Does Metro run through those places? Greater, Greater Washington. Retrieved from <u>https://ggwash.org/view/43291/we-know-where-most-of-dcs-population-lives-does-metro-run-through-those-places</u>
- Schrag, Z. (2014). The Great Society subway: A history of the Washington Metro (Creating the North American landscape). Johns Hopkins University Press; Reprint edition: Baltimore, MD. ISBN: 978-0801882463
- 10. HealthyPlaces.Org (2009). "Design Principle Connectivity and Permeability" Retrieved from <u>https://www.healthyplaces.org.au/userfiles/file/Connectivity%20June09.pdf</u>
- 11. Jaffe, E. (2015).What does living 'close' to transit really mean? Retrieved from: <u>https://www.citylab.com/solutions/2015/01/what-does-living-close-to-transit-really-mean/384421/</u>
- 12. Community Streetcar Coalition. (2015, October). *Mobility Benefits of the Streetcar*. <u>http://www.streetcarcoalition.org/pdf/mobilitybenefits201510.pdf</u>
- 13. DC Streetcar. (n.d.). One year of service. Retrieved August 22, 2017 from <u>https://www.dcstreetcar.com/one-year-service/</u>
- 14. Kaufman, S.M., Moss, M.L., Hernandez, J., and Tyndall, J. (2015, November). *Mobility, economic opportunity and New York City neighborhoods.* New York University: New York. Retrieved from https://wagner.nyu.edu/files/faculty/publications/JobAccessNov2015.pdf

- 15. American Public Transportation Association.(n.d.). Public transportation benefits. Retrieved August 22, 2017 from <u>http://www.apta.com/mediacenter/ptbenefits/Pages/FactSheet.aspx</u>
- 16. Criden, M. (2008). The stranded poor: Recognizing the importance of public transportation for low-income households. Benefits of rural public transportation. National Association for State Community Service Programs (NASCSP): Washington, D.C. Retrieved August 7, 2017, from <u>http://www.nascsp.org/data/files/csbg\_publications/issue\_briefs/issuebriefbenefitsofruralpublictransportation.pdf</u>
- 17. Williams, M. (2017, June). June transit savings report: National dump the pump day on June 15 is the time to celebrate your transit savings [Press Release]. Retrieved from <a href="http://www.apta.com/mediacenter/pressreleases/2017/Pages/June-Transit-Savings.aspx">http://www.apta.com/mediacenter/pressreleases/2017/Pages/June-Transit-Savings.aspx</a>
- Lazo, L. (2017, July). Frequent bus breakdowns take toll on D.C. Circulator service. Washington Post. Retrieved August 22, 2017 from <u>https://www.washingtonpost.com/local/trafficandcommuting/frequent-bus-breakdowns-take-toll-on-dc-circulator-service/2017/07/21/99d0fe04-6d55-11e7-9c15-177740635e83 story.html?utm\_term=.d4a1b8db25a5
  </u>
- Transit Resource Center. (2015). Vehicle and maintenance evaluation. District Department of Transportation. Retrieved August 22, 2017 from <u>https://www.scribd.com/document/307382795/Circulator-Audit-by-District-Department-of-Transportation</u>
- 20. Office of the State Superintendent of Education. (2014). Attendance matters: Truancy prevention guide: A resource guide for parents and legal guardians. The Government of the District of Columbia: Washington, D.C. Retrieved from <a href="https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/Truancy%20Guidee-ONLINE-021014.pdf">https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/Truancy%20Guidee-ONLINE-021014.pdf</a>
- 21. Peerman, A., Brink, R., and Ferrer, E. (2015). *How DC's truancy policy fails students and steps to turn it around*. DC Lawyers for Youth, Children's Law Center: Washington, D.C. Retrieved from <a href="https://www.childrenslawcenter.org/file/8533/download?token=XlygEPnf">www.childrenslawcenter.org/file/8533/download?token=XlygEPnf</a>
- 22. Hauslohner, A. (2015). D.C. students will be riding Metro for free this year. Washington Post. Retrieved from <u>https://www.washingtonpost.com/local/dc-politics/dc-students-will-be-riding-metro-for-free-this-year/2015/08/17/e81027d2-44e6-11e5-8ab4c73967a143d3\_story.html?utm\_term=.0683fd50b566#comments</u>
- 23. District Department of Transportation (DDoT). (2017). *School transit subsidy program*. Washington, D.C. Retrieved from <u>https://ddot.dc.gov/page/school-transit-subsidy-program</u>
- 24. Urban Design 4 Health. (2010). *The hidden health costs of transportation.* American Public Health Association: Washington, D.C. Retrieved from <a href="https://www.apha.org/~/media/files/pdf/factsheets/hidden\_health\_costs\_transportation.ashx">https://www.apha.org/~/media/files/pdf/factsheets/hidden\_health\_costs\_transportation.ashx</a>
- Ercan, T., Onat, N. C., and Tatari, O. (2016). Investigating carbon footprint reduction potential of public transportation in United States: A system dynamics approach. *Journal of Cleaner Production*, 133, 1260-1276. <u>https://doi.org/10.1016/j.jclepro.2016.06.051</u>

- 26. Litman, T. (2014). A new transit safety narrative. *Journal of Public Transportation*, 17(4), 8. http://dx.doi.org/10.5038/2375-0901.17.4.7
- Buehler, R., and Hamre, A. (2015). The multimodal majority? Driving, walking, cycling, and public transportation use among American adults. Transportation, 42(6), 1081-1101.https://doi.org/10.1007/s11116-014-9556-
- 28. Centers for Disease Control and Prevention. (n.d.). Healthy places, transportation health impact assessment toolkit. Retrieved from <a href="https://www.cdc.gov/healthyplaces/transportation/promote\_strategy.htm">https://www.cdc.gov/healthyplaces/transportation/promote\_strategy.htm</a>
- 29. US Department of Transportation. (n.d.), Active transportation, relationship to public health. Retrieved from <u>https://www.cdc.gov/healthyplaces/transportation/promote\_strategy.htm</u>
- District Department of Transportation. (2005). Bicycle master plan. Retrieved from <u>https://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/bicycle\_master\_plan\_2005\_final\_document\_0.pdf</u>
- 31. Alliance for Biking and Walking. (2016). *Bicycling and walking in the United States, 2016 benchmarking report*. Retrieved from: <u>https://www.aarp.org/content/dam/aarp/livable-communities/documents-2016/2016-WalkingBicyclingBenchmarkingReport.pdf</u>
- 32. Buck, D., Buehler R., Happ, P.,Rawls, B. Chung, P., and Borecki, N.(2012). Are bikeshare users different from regular cyclists? A first look at short-term users, 4 annual members, and area cyclists in the Washington, DC, region. Urban Affairs and Planning; School of Public and International Affairs; Virginia Tech Alexandria Center. Retrieved from <u>http://docs.trb.org/prp/13-5029.pdf</u>
- 33. District Department of Transportation (DDOT). (2014). "MoveDC The District of Columbia's Multimodal-Long Range Transportation Plan: Bicycle Element" http://wemovedc.org/resources/Final/Part%202\_Plan\_Elements/Bicycle.pdf
- 34. Chetty, R., Hendren, N., Kline, P., and Saez, E. (2014, June). Where is the land of opportunity? The geography of intergenerational mobility in the United States. Retrieved from <u>http://www.equality-of-opportunity.org/assets/documents/mobility\_geo.pdf</u>
- Neff, J., and Dickens, M. (2017). 2016 Public Transportation Fact Book. American Public Transportation Association: Washington, DC. Retrieved from <u>http://www.apta.com/resources/statistics/Documents/FactBook/2016-APTA-Fact-Book.pdf</u>



"Food deserts are areas lacking access to nutritious and affordable food, and food swamps are areas with relatively few healthy options (and) or where 'large relative amounts of energy-dense snack foods inundate healthy food options."

#### — Luan, et al., 2015<sup>1</sup>

Research shows that the food environment is an important factor in health outcomes. Good nutrition promotes health and well-being, and reduces the risk of diet-related conditions and chronic diseases. One of the major risk factors for chronic diseases, including heart disease, stroke, and diabetes, is obesity. The data indicates that individuals, residents, and communities with greater access to healthy foods have healthier diets and are at lower risk of overweight, obesity, and high blood pressure.<sup>1</sup>

### The Food Environment

Food environment factors include not only access to supermarkets, but also proximity to convenience stores and restaurants, food prices, food and nutrition assistance programs, and community socioeconomic characteristics. Household car ownership and transit access also influence the food access model. All of these factors interact in complex ways, creating geographic, spatial, and temporal variation in opportunities for healthy food—and, ultimately, influencing food choices and diet quality.

The USDA Food Environment Atlas<sup>2</sup> defines populations with low food access—or **food deserts**—by the number and percentage of people living in proximity to a supermarket, supercenter, or large grocery store, in relation to household income and vehicle access. Within urban areas, one or both of the following distance thresholds are used: half-mile or more, or one mile or more. Based on the one-mile proximity estimate (expanded to 10 miles in rural areas), nearly 40 million Americans (12.8% of the US population) live in areas characterized as **low-income and low-access, or LILA.** The numbers rise to 83 million, or 27% of the population, at the half-mile threshold.

However, many people living in these geographically defined LILA areas are neither low-income nor poor. Many own cars, or can afford alternatives, from transit access to grocery delivery, as a means to overcome distance barriers—if these services are available. It is estimated that nearly half the households, or 19 million people, living beyond a one-mile radius (i.e. within LILA geographic areas), are not low-income. This proportion rises to two-thirds (65%) of households who are not low-income when the threshold is reduced to beyond the half-mile or greater from a grocery store.<sup>3</sup>

### The District Food Environment

Based on ACS 2015 estimates for the District of Columbia in the USDA Food Environment Atlas, there have been improvements in LILA in the District between 2010 and 2015. As shown in **Table 12.1**, the number of District residents with LILA, based on the one-mile or greater threshold, has declined by 25%. Many areas in the city are still impacted, however, when the half-mile radius LILA measure is used. As presented in **Figure 12.1**, the half-mile LILA coverage is shown in orange, and the one-mile LILA areas are shown in green.

DC Residents with Low Access to Store (ATLAS)			
Low Access to Grocery Store*	2010	2015	% Change
All "Low Access" Residents	16,970 (2.80%)	12,688 (2.11%)	-25.2%
Low income	5,764 (0.96%)	4,729 (0.79%)	-17.5%
• Children (age<18)	3,930 (0.65%)	3,454 (0.57%)	-12.0%
• Seniors (Age >64)	2,781 (0.46%)	1,881 (0.31%)	-32.4%
No-Car Households	1,872 (0.70%)	1,227 (0.46%)	-34.5%

 Table 12.1: USDA Estimate of Food Desert Impacts in the District of Columbia, 2010 and 2015

 (\*Low Income and Low Access (LILA) 1- Mile Radius)



Figure 12.1: USDA Low Income and Low Access Areas (Half-and 1-Mile) Areas, District of Columbia, 2015 Source: USDA Food Atlas

# FOOD ENVIRONMENT by Neighborhood Group

Figure 12.2: Grocery Store Access (Distance Only), by 0.5 and 1.0 Mile Radii

### **GROCERY STORES**



DATA SOURCE: OFFICE OF THE CHIEF TECHNOLOGY OFFICER

# FOOD ENVIRONMENT by Neighborhood Group

Figure 12.3: Grocery Stores, Farmers Markets, and Healthy Corner Stores

- District Overall Grocery Density Score: 0.07 (.07 stores per 1,000 people)
  - o District rate is below US average
- 12,688 (2.11%) of DC residents live in Low Income and Low Access (LILA) areas (Using FDA 1-mile food desert measure)
  - 37% of these households are low income
  - o 27% were households with children
  - About 10% have no access to a car
- 11.4% of District households are food insecure
- 15.6% of District households are supported by public assistance or SNAP



### Supermarkets, Corner Stores, and Convenience Stores

The complexity of the food environment is further complicated not only in terms of distance to a full-service grocery store, including access to transportation, but also by the relative availability of healthy foods options in comparison with less healthy alternatives. Studies have shown that areas with higher access to convenience and corner stores have higher prevalence of obesity.<sup>1</sup>

The North American Industry Classification System (NAICS) definition of grocery stores and supermarkets specifically excludes convenience stores (codes 4451; 44511; and 445110). Convenience stores, or food marts (NAICS code 445120), which are also known as corner stores, corner shops, or *bodegas* (in Spanish-speaking communities), retail only a limited line of goods that generally include essential items like milk and bread, as well as soda and snacks.<sup>4</sup>

Despite these formal distinctions, the line between grocery and convenience has become increasingly obscured, as grocery stores offer more services, and convenience stores expand their product offerings. Generally, supermarkets and grocery stores are larger establishments (average size of 46,000 square feet), that offer a wide variety of food products, including perishables such as meat, produce, and dairy, along with general merchandise such as cleaning supplies, paper products, and health and beauty care products. Convenience stores are typically much smaller (4,700 square feet), with only limited inventories of high-convenience items and food basics needed in a hurry, from toilet paper to soft drinks, as well as microwavable and prepared foods. Many convenience stores also frequently sell gasoline.<sup>5</sup>

### Healthy Food Options in the District

The location and distribution of healthy food options across the District are provided in **Figures 12.2** and **12.3**. It includes a total of 45 supermarkets/grocery stores, 62 farmers markets, and 71 healthy corner stores. Each of these alternatives offer a different range of food choices, and should be considered complimentary, not as substitutes for each other. As shown, and depending on the food-desert metric used, differing areas of the city fall either within or outside of the distance-only measure of access to a supermarket or grocery store, at the half-mile and one-mile distances shown. The distance-only measure of access mapped in **Figure 12.2** does not take into account either income or car ownership, known modifiers in practice to food access and food security. The distance-only visualization is drawn around existing full-service grocery stores only, because of their scale, fixed investment, and greater permanency. Farmers markets and healthy-corners are invaluable assets within the citywide and neighborhood food environment, but their complimentary function as noted above cannot qualitatively be expected to serve as full substitutes.

### Grocery Store Density and Distribution

With a total of 45 grocery stores in the District, the city has an overall grocery store density score of 0.069 (*i.e.* approx. 0.07 stores per 1,000 population) using data from 2011–2015. Data compiled by the Healthy Communities Institute (2014) places the District within the lowest quartile range of US counties or their equivalents, falling below the 25th percentile cut-off score of 0.14 stores per 1,000 population.<sup>6</sup>

The District's overall grocery density score, however, hides significant variation in the distribution by neighborhood and subsequent impact on access and choice. The availability and affordability of healthy and varied food options in the community increases the likelihood that residents will have a balanced and nutritious diet. A diet made up of nutritious food in combination with an active lifestyle can reduce the incidence of heart disease, cancer, and diabetes and is essential to maintain healthy body weight and prevent obesity. Low-income and underserved communities often have more limited access to stores that sell healthy food, especially high-quality fruits and vegetables.

As shown in **Figure 12.2**, several of the grocery stores in the District are concentrated within the central part of the city, with significant overlapping half-mile and one-mile access areas. Within these areas, residents have more options and choices. While the large majority of the city falls within at least the one-mile access area, there are distinct locations, mostly toward the outer regions of the city, that fall outside of the one-mile maximum. The largest physical access gaps are within Wards 7 and 8, although there are regions to the northwest and northeast that also fit this description. The grocery store density score for Wards 7 and 8 combined is approximately 0.019 *(i.e.* approx. 0.02 stores per 1,000 population) in 2011 to 2015, which is significantly below the District-wide average noted above.

### Farmers Markets

Farmers markets have become increasingly popular both nationally and locally over the past decade. As important contributors to the total food environment, they uniquely focus on the provision of fresh food and vegetables. The District's 62 farmers markets are important assets across all parts of the city, but are especially beneficial to low-income residents in neighborhoods with limited access to major retail outlets that regularly include fresh produce. Farmers market are also known to have low start-up costs and flexible models, which enable them to be responsive to the needs of the community. Working with local and federal programs, farmers markets are frequently developed to support the unique needs of low-income consumers, including the use of federal nutrition program benefits to purchase fresh food, as well as access to nutrition education and ideas for preparing home-cooked healthy meals.<sup>7</sup>

As shown in **Figure 12.3**, farmers markets make an important contribution to food choices across many parts of the city, and are especially important in Wards 7 and 8, but also in Ward 5, where grocery store options are limited.

### Healthy Corner Stores

Because of the challenges faced by many of the city's most vulnerable residents in accessing healthy food, closing the grocery gap is a priority. Geographically, the most affected areas are Ward 7, with only two full-service grocery stores, and Ward 8, with just one. These three grocery stores serve well over 100,000 residents. Because of such limited access, many District residents rely on corner stores for a disproportionate number, if not all, of their food purchases.

The Healthy Corner Stores Partnership between DOH and DC Central Kitchen was developed to address these challenges by recruiting and encouraging participating corner stores to provide healthy options to their customers. The Partnership is dedicated to providing technical assistance on fresh-food handling and marketing. Currently, there are 63 Healthy Corner Stores in the District, almost half of which are located in Ward 7 or Ward 8. Participating stores may order, at cost, an assortment of fresh or lightly processed produce, such as chopped or sliced fruit, which are the most popular. Because commercial wholesalers tend to have prohibitively high minimum orders, distribution through Healthy Corner Stores obviates a major obstacle to fresh food availability by delivering small orders as needed. The Partnership provides vegetable refrigeration units to stores that need them, and highlights the demand for these products. The community health impact of this project is measured through the Nutrition Environment Measures Survey (NEMS), developed at the University of Pennsylvania to provide a numerical and comparable measure of health promotion qualities within this part of the urban environment. Increased sales are an outcome measure, as well as an indicator of the demand for healthier options. The Healthy Corner Stores Partnership is an active promoter of participating members and the healthy choices they represent.

### Convenience and Liquor Stores

Beyond the healthy options discussed above, there are also a far greater number of convenience stores (252 total), and liquor stores (231 total) across the District, as shown in **Figure12.4.** There are also several hundred carryout restaurants (not shown) located throughout the city. Convenience stores, liquor stores, and carryout restaurants all impact the food environment. These establishments may be independently owned or part of a franchise or chain.

Given their great number, these stores include considerable variety in type, quality, inventory, specialization, and operating hours. Many are open for longer and non-traditional hours, and/or may cater to specific local and neighborhood populations and needs. National industry

trends also suggest that high-end convenience stores are increasingly concentrating on providing a greater variety of fresh, high-quality and prepared foods, and that competition is mounting as convenience stores compete with fast-food restaurants.<sup>8</sup>



Figure 12.4: Convenience Stores and Liquor Stores by Neighborhood, 2016

### Relative Healthy Food Availability (RHFA)

The visualization provided in **Figure 12.5** shows a measure of **Relative Healthy Food Availability** (RHFA). This RHFA measure shows the proportion of grocery stores to convenience stores, mapped to the 51-statistical neighborhood level. Based on this measure, a total of 17 neighborhoods had convenience stores but no grocery stores within their boundaries. Of the 28 neighborhoods that had both types of food retailers available, the percentage considered healthy (grocery stores), ranged from less than 20% in 12 neighborhoods to 20% to 39% healthy in 8 neighborhoods. In 4 neighborhoods, 40% to 50% of options were in the healthy range.

The method used in this RHFA calculation is based on the CDC's Modified Retail Food Index (mRFI), <sup>9</sup> with the calculation limited to grocery stores and convenience stores. Given the variability in the range and quality of offerings in convenience stores described above, however,

these data should be considered preliminary estimates of the relative availability of healthy foods at the more local scale.



Modified Retial Food Environment Index



### Food Security and Insecurity

As described above, distance-based (half-mile or one-mile radius) food access approaches focus on geographic areas with high proportions of low-income people. However, these methods are limited in the visibility they offer into the unique circumstances faced by poor or low-income individuals and families, regardless of where they live-and especially when they live in areas with higher average incomes and wealth (United States Department of Agriculture, 2009).<sup>10</sup> People in these circumstances are affected regardless of physical access, because they are too poor to buy food even when it is accessible; they are considered **food insecure** (USDA, 2012).<sup>11</sup> In 2015, an estimated 12.7% of all households in the United States were food insecure; meaning they were not sure they could access enough food for an active, healthy lifestyle for their households (USDA, 2017).<sup>12</sup> The national household food insecurity rate has continued to decline, but it is still higher than the pre-recession rate of 11.1% in 2007.

In the United States, when households experience very low food security, it typically results in episodes of reduced food intake and disrupted eating patterns that are occasional and episodic, but not necessarily chronic. In 2016, 4.9% of US households (6.1 million households) experienced very low food security.<sup>11, 12, 13</sup> On average, households in this group experienced food insecurity during seven months of the year. However, while one in four of these households experienced this condition rarely or occasionally (during only one of two months for the year), another one in four experienced the condition frequently or chronically. The challenge of very low food security is even greater among households with children. In 2016, 8% of US households with children experienced food insecurity, a total of 3.1 million households. This number is essentially unchanged from 7.8% in 2015. These rates are very similar to pre-recession (2007) numbers on food insecurity among children (8.3%).<sup>11, 12, 13</sup>

Overall, the prevalence of very low food security in the District was significantly higher than the national average for some groups. In 2016, approximately 10.5% of households with children headed by single women in the District experienced very low food security. People living alone had higher rates of very low food insecurity. There were observed differences by gender, with 6.7% of women and 7.5% of men experiencing very low food security. Differences by race show that Black households had rates at 9.7% and Hispanic households at 5.8%. Low-income households were also at higher risk, with a rate of 13.3% very low food security among those with incomes below 185% of poverty. <sup>11, 12, 13</sup>

Nationally, the median food-secure household spends about 29% more on food than the typical food-insecure household of the same size and composition. These estimates include food purchases made with Supplemental Nutrition Assistance Program (SNAP, formally known as food stamp) benefits. Nearly 60% of food-insecure households participate in one or more of the three federal nutrition assistance programs (SNAP; Special Supplemental Nutrition Assistance Program for Women, Infants and Children (WIC); and the National School Lunch Program).

According to the most recently available USDA data, the prevalence of household food insecurity in the District included nearly 36,000 households (11.4%), 2014–2016. Within the District, 88.6% of resident households were food secure throughout the year in 2016, meaning that they had consistent, dependable access to enough food. Households that were food insecure (including low or very low) made up 11.4% over 2014–2016, down from 13.4% in 2011-2013. Of these, 4.0% (down from 5.2%, 2011–2013) were classified as very low food security, which is lower than the national very low rate of 5.2%. For households in this severe range of food insecurity, the food intake of some household members was reduced, and normal eating patterns were disrupted at times during the year due to limited resources. <sup>12, 13</sup>

The SNAP program offers nutrition assistance to millions of eligible, low-income individuals and families across the United States and provides economic benefits to communities. SNAP is the

largest program in the national hunger safety net.<sup>14</sup> Within the District, an estimated 15.6% of households rely on public assistance income or SNAP benefits, as shown in **Fig 12.8.** This is somewhat higher than the national average of 13.9%, but, as shown, it varies significantly by neighborhood. Within a handful of neighborhoods, the percentage of families on SNAP benefits is less than 1%. But for a dozen neighborhoods, rates are at or above 30%, rising to a high of nearly 54%. This underscores the different food circumstances that many residents face and the critical role that SNAP plays in bridging these gaps.

### Overweight and Obesity

Over the past few decades, there has been a significant increase in the number and percentage of overweight and obese persons, including children, in the United States. The CDC estimates that nationally, 34% of adults and 16.2 % of children are obese. While the District has performed better than the national average, differences by geographic location across the city are evident.

As of 2015, 22.1% of adults in the District were considered obese (BRFSS 2015). **Figures 12.6a** and **12.6b** show by ward in 2015 data the percentage of adults 18 years and over who are overweight and obese. Across the eight wards, **overweight** (defined as a body mass index, or BMI, of 25 to 29.9) rates range from the low of 25.3% in Ward 3, to a high of 39.3% in Ward 5. **Obesity** (BMI greater than 30), is highest in Ward 8, at 43.6%, and lowest in Ward 2, at 10.7%. Based on the 2015 sample, all wards have seen a reduction in overweight adults since 2014. However, in 2015, most wards, with the notable exception of Wards 7, 6 and 4, registered an increase in obesity over their 2014 rate.

As of 2017, the data for District middle- and high school-age students, from the Youth Risk Behavior Survey (YRBS), shows that 16.8% of high school students were obese. A selection of data for nutrition and physical activity and the relationship with academic performance is presented in **Figure 12.7**. The report also noted that there had been a decrease in the consumption of soda and other sugary drinks over the prior decade, as well as a strong tendency to eat breakfast at least some days of the week. However, it was observed that there was also "an increasing number of hours doing sedentary online activities, a habit that is strongly correlated to reported feelings of sadness and hopelessness."<sup>15</sup>

# FOOD ENVIRONMENT by Ward

### Figure 12.6: Adults Overweight Or Obese







Figure 12.6b: Obese %



#### Figure 12.7: Physical Activity and Sedentary Behaviors, High School Students, 2017

Source: District of Columbia. Office of the State Superintendent of Education, YRBS 2017

# **FOOD ENVIRONMENT by Neighborhood Group and Life Expectancy** Figure 12.8: Households with Public Assistance or SNAP Benefits

### PERCENTAGE OF HOUSEHOLDS WITH PUBLIC ASSISTANCE INCOME OR SNAP IN THE PAST 12 MONTHS



### Conclusion

Differing food environments and opportunities for healthy food exist across the District. The mix of healthy options, from supermarkets and grocery stores to farmers' markets, as well as healthy corner stores, varies significantly at the neighborhood level. However, the food environment includes not only price of and access to this range of healthy options, but also the denser concentration of less healthy "food-swamp" distractions. This includes convenience and liquor stores, as well as carry outs and fast-food establishments in the District's less food-secure areas. As shown in **Figure 12.5**, a significant number of neighborhoods have convenience stores only, especially on the eastern side of the city. This tracks with national trends in other US cities, where lower-income zip codes have, on average, 30% more convenience, corner, and liquor stores than do middle-income zip codes.<sup>16</sup> The evidence also suggests that *relative* healthy food access may also be of importance, because it better represents food purchasing and consumption options and behaviors than absolute outlet density.<sup>1</sup>

Assuring access to affordable, nutritious food is key to reducing poor diet-related health outcomes. This includes the impact on academic performance. The District's YRBS 2017 data show that both middle school and high school students who reported going hungry were more likely to have lower grades, after accounting for other demographic factors.<sup>15</sup> Affordable, nutritious food can reduce the risk of heart disease, diabetes, and other chronic illnesses.<sup>17</sup> As shown, absolute and relative access to food, healthy or otherwise, differs across District neighborhoods. As with food security, these differences are correlated with the socioeconomic characteristics of neighborhood residents, as well as with general economic conditions.

National data show that households with low-incomes, low-education attainment of adult members, single-parent household heads, adults with a disability, or adults who are unemployed, are at higher risk, and are more likely to be food insecure. Most recent data for 2016 also show that higher rates of food insecurity for households with children, as well as for Black and Hispanic households, persist. These same factors are evident within the District, where neighborhoods with larger shares of households with these characteristics are likely to have higher prevalence of food insecurity.<sup>11, 12</sup>

Neighborhood-level economic conditions such as average income, cost of rental housing, unemployment rates, residential instability, racial and/or ethnic composition, as well as participation in food and nutrition assistance programs also affect the prevalence of food insecurity. As shown in **Figure 12.8**, nearly 16% of the District population is dependent on SNAP benefits—and there are much higher rates in a number of southeast neighborhoods in the city. Many of these same neighborhoods also have some of the lowest rates of life expectancy in the city, 2011–2015.

# References

- Luan, H., Law, J., and Quick, M. (2015). Identifying food deserts and swamps based on relative healthy food access: A spatio-temporal Bayesian approach. *International Journal of Health Geographics*, 14, 37. <u>http://doi.org/10.1186/s12942-015-0030-8</u>
- Economic Research Service (ERS), US Department of Agriculture (USDA). (n.d.). Food access research atlas — District of Columbia. Retrieved from <u>https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx</u>
- 3. Rhone, A., Ver Ploeg, M., Dicken, C., Williams, R., and Breneman, V. (2017). *Low-income and low-supermarket-access census tracts, 2010–2015.* ERS, USDA. Washington, DC.
- 4. US Census Bureau. (2012). 2012 NAICS: 445120—convenience stores. Retrieved from https://www.census.gov/econ/isp/sampler.php?naicscode=445120andnaicslevel=6
- Difference Between. (n.d.). Difference between supermarket and convenience store. Retrieved from <u>http://www.differencebetween.info/difference-between-supermarket-and-conveniencestore</u>
- 6. Be Well Placer Community Dashboard. (2017, October). Grocery store density. Conduent Health Communities Institute. Retrieved from <u>http://www.placerdashboard.org/index.php?module=indicatorsandcontroller=indexandaction=</u> <u>viewandindicatorId=250andlocaleId=268</u>
- 7. DC Hunger. (n.d.). *Farmers markets and the D.C. farmers market collaborative.* Retrieved from <u>http://www.dchunger.org/projects/farmers.html#history</u>
- CSP. (2014, February). Convenience stores winning with fresh, quality prepared foods. Winsight. Retrieved from <u>http://www.cspdailynews.com/category-</u> <u>news/foodservice/articles/convenience-stores-winning-fresh-quality-prepared-foods</u>
- Centers for Disease Control and Prevention (CDC). (n.d.) Census-tract level state maps of the modified Retail Food Environment Index (mRFI). Retrieved from <u>ftp://ftp.cdc.gov/pub/Publications/dnpao/census-tract-level-state-maps-mrfei\_TAG508.pdf</u>
- **10.** Economic Research Service, USDA. (2009). *Access to affordable and nutritious food: Measuring and understanding food deserts and their consequences.* Washington, DC. Retrieved from <a href="https://www.ers.usda.gov/webdocs/publications/42711/12716\_ap036\_1\_.pdf?v=41055">https://www.ers.usda.gov/webdocs/publications/42711/12716\_ap036\_1\_.pdf?v=41055</a>
- Coleman-Jensen, A., Nord, M., Andrews, M., Carlson, S. (September 2012). *Household food* security in the United States in 2011. [Economic Research Report No. (ERR-141)]. Retrieved from <u>https://www.ers.usda.gov/publications/pub-details/?pubid=45021</u>
- Coleman-Jensen, A. Rabbitt, M.P., Gregory, C.A., & Singh, A. (2017, September). Household food security in the United States in 2016 [Economic Research Report No. (ERR-237) 44 pp]. ERS, USDA. Retrieved from <u>https://www.ers.usda.gov/webdocs/publications/84973/err-</u> 237.pdf?v=42979

- 13. ERS, USDA. (2017). *Ag and good statistics.* Washington, DC: USDA. Retrieved from https://www.ers.usda.gov/webdocs/publications/83344/ap-075.pdf?v=42853
- 14. USDA. (2017, January). *Supplemental Nutrition Assistance Program (SNAP)*. Retrieved from <u>https://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap</u>
- **15.** DC Office of the State Superintendent of Education (OSSE). (2018). District of Columbia, Youth Risk Factor Behavior Survey (YRBS), 2017
- 16. Truehaft, S., & Karpyn, A. (2010). The grocery gap: Who has access to healthy food and why it matters. Policy Link. The Food Trust. Retrieved from <a href="http://thefoodtrust.org/uploads/media\_items/grocerygap.original.pdf">http://thefoodtrust.org/uploads/media\_items/grocerygap.original.pdf</a>
- 17. US Department of Health and Human Services (HHS). (2017). *Nutrition, physical activity, and obesity*. Retrieved from <u>https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Nutrition-Physical-Activity-and-Obesity/determinants</u>



"When organizations or people create and give others health information that is too difficult for them to understand, we create a health literacy problem. When we expect them to figure out health services with many unfamiliar, confusing or even conflicting steps, we create a health literacy problem."

### - Centers for Disease Control and Prevention<sup>1</sup>

Access to affordable, high-quality and equitably delivered medical care is an important determinant of health. The evidence shows that those with appropriate and reliable medical care are more likely to use primary care and preventative services and have lower hospitalization rates.<sup>2</sup> Healthcare services should be readily available, easily accessible, and exist within a coordinated delivery system designed to minimize barriers to appropriate utilization. The overarching goal, for both providers and consumers, should be to provide and consume the right care, at the right time, and in the right place.

Access barriers to quality medical care point to their potential solutions. They include several layers of cost barriers: absent, or incompatible, health insurance coverage (including co-pays and prescription costs) and related expenses, such as the availability of paid sick leave, child care, and transportation. The location of services, service hours, and appointment availability, together with cultural and linguistic competence, are also important factors that can either positively or negatively impact usage. The design of a high-quality health care delivery system must proactively address these barriers through an equitable approach, which will lead to improved outcomes across all groups. This includes tailoring systems to meet the unique needs of different populations, regardless of socioeconomic status, cultural background, or geographic area.



Source: DC Department of Health, BRFSS

### Health Insurance Coverage

The District of Columbia has long prioritized health insurance coverage to promote and protect the health of as many residents as possible. This has included the expansion of Medicaid even prior to the introduction of the Affordable Care Act, as well as the introduction of the DC Alliance program, which is designed to fill the gap for residents who lack access to traditional employer-based or private insurance coverage but are ineligible for federally supported public programs such as Medicaid and Medicare. As a result, the District population is largely insured, with 94% health insurance coverage in 2015. (**Figure 13.4 and Figure 13.6**).

Overall, only 5.3% of District residents were uninsured in 2015—the lowest rate in the nation, and well below the US rate of 13.0%. However, differences by neighborhood in the percentage of uninsured are apparent, from a low of less than 1%, to a high of 15%, in Brightwood Park (**Figure 13.5**). Persistent differences exist with respect to insured and uninsured rates by income, race, and ethnicity, and differential residential concentrations can be found across the city. White residents in the District had the highest rate of health insurance coverage, at 96.5% (3.5% uninsured). This is compared with Black resident insurance rates at 93.6% (6.4% uninsured) and Asians at 92.4% (7.6% uninsured). Hispanic/Latino residents (of any race) had the lowest insured rate as a group, at 86.5%, with 13.5% uninsured (ACS 2011–2015).<sup>3</sup>

Similarly, the percentage of District residents on public insurance, as shown in **Figure 13.6**, tracks with income level, as it is a key eligibility criterion for receiving public coverage. An additional factor may be that neighborhoods to the north and northeast have higher foreignborn populations who may be ineligible and/or unaware of the availability of public insurance programs or are wary to interface with government agencies (*compare Figure 4.7 and Figure 13.6). Ryan (2013)<sup>4</sup> found that 38% of people who spoke a language other than English did not have health insurance coverage. Among populations that spoke English less than very well, higher proportions of Spanish speakers (an estimated 59.1% of those who spoke Spanish) had no health insurance. In contrast, the rate for non-Spanish-speaking foreign-language speakers without health insurance was lower, at 50.1%. Navigating the eligibility policies and enrollment process as a native-English speaker can be challenging. For non-English speakers, it is even more difficult (Kaiser Family Foundation, 2016<sup>5</sup>; Artiga and Damico, 2017<sup>6</sup>).* 

### Social Determinants and Medical Care Delivery

The social determinants of health are the conditions in the environments in which people are born, grow, learn, live, work, and age, and are generated outside of the traditional healthcare system, which is focused on medical care delivery. The social determinants are, however, directly related to people—individuals and communities—that health care systems are set up to serve. Individuals and communities are the health care system's customers, and they bring their whole selves, with their whole lives' circumstances and lived experience, as the context for medical service consumption and delivery. The social determinants are, therefore, vital considerations in the design of the health care delivery system, and critical to assuring quality medical care for all residents, regardless of individual social, economic, and/or medical history.

As has been detailed in earlier chapters of this report, key drivers such as education, income, and employment status impact opportunities for health, quality of life, and health outcomes. Individuals and communities with fewer health-opportunity resources have been shown statistically to be more likely to experience fair or poor health. **Figures 13.2** and **13.3** show similar hierarchies by both race and gender. While only 3.9% of White District residents self-reported being in fair or poor health, the percentage for Black or African-American residents was 19.5%. For other races, the rate was 9.1%. By gender, 14.9% of women, compared with just 8.7% of men, reported being in fair or poor health. Differential access to health insurance coverage, as detailed above, is matched by differential health outcomes, including wide geographic variation across the District, both by ward as well as by neighborhood.

Having arrived at a doctor's office or medical care facility, customers often face challenges in accessing high-quality service and appropriate care. Studies have shown that unequal treatment is pervasive across the health care system as a whole, and that implicit bias (either on the part of the individual provider or at the system level) negatively impacts the quality of care delivered in clinical encounters to some populations (Smedley et al., 2003<sup>7</sup>; Chapman, et al., 2013<sup>8</sup>). These biases affect the quality of care received, especially by people of color, immigrants, linguistic minorities, women, LGBTQ communities, and other historically-disadvantaged populations. Persistent biases, in combination with other factors, contribute to the stubborn differences in outcomes by race and ethnicity as well as by gender.

As was shown earlier (**Figure 5.3**, *Infant Mortality Rates 2005–2016*), while the long-term trends in infant mortality are positive overall, differential rates within the District over the past decade illustrate the persistently higher mortality rates for children of Black mothers—more than three times that of their White counterparts. What is more, these differential health outcomes persist across the life course, as evidenced by self-reported fair or poor health by race and gender of adults, as shown below (**Figures 13.2** and **13.3**).



Adult Fair and Poor Health by Race, Ethnicity and Gender, DC BRFSS 2015 Source: DC Department of Health, DC Behavioral Risk Factor Surveillance System

# **MEDICAL CARE by Neighborhood Group** Figure 13.4: Population **WITH** Health Insurance Coverage

### PERCENTAGE OF POPULATION WITH HEALTH INSURANCE COVERAGE (CIVILIAN NONINSTITUTIONALIZED POPULATION)



### **MEDICAL CARE by Neighborhood Group** Figure 13.5: Population **WITHOUT** Health Insurance Coverage

# PERCENTAGE OF POPULATION WITHOUT HEALTH INSURANCE COVERAGE (CIVILIAN NONINSTITUTIONALIZED POPULATION)



# **MEDICAL CARE by Neighborhood Group** Figure 13.6: Population **WITH PUBLIC HEALTH INSURANCE** Coverage

### PERCENTAGE OF POPULATION WITH PUBLIC COVERAGE (CIVILIAN NONINSTITUTIONALIZED POPULATION)



### Availability and Use of Medical Care Services

In light of the many factors influencing access of quality medical care services, one of the first strategies for jurisdictions to address is availability of services. The District of Columbia strategic priority since 2008 was expansion of primary care across the city. To this end, the District invested more than \$71 million in construction of new state-of-the-art primary care facilities and renovation of existing facilities. DC Health funded a total of 15 medical home-focused capital expansion projects between 2006 and 2016 in seven of the District's eight wards (Ward 3 being the exception). Twelve of these 15 projects were completed in collaboration with the District of Columbia Primary Care Association (DCPCA), a nonprofit health care and advocacy organization dedicated to improving the health of the District's vulnerable residents by ensuring access to high-quality primary care, regardless of ability to pay.

As a result of the investments above, the DC Health Systems Plan (2017), shows that the District of Columbia already possesses adequate primary care clinics and hospital beds for the population served. There are a total of eight acute-care hospitals, two psychiatric hospitals, and five ambulatory surgical centers (**Figure 13.7**). Primary care services, a key component in prevention, are ample and well-distributed (**Figure 13.8**). Despite the availability of these resources, challenges remain related to full patient engagement in appropriate services. These data suggest that there are other barriers to appropriate use of medical care beyond availability of services, as detailed in the upcoming DC Primary Care Needs Assessment (*coming soon - 2018*).



Figure 13.7: Hospital Service Locations

Source: DC Health Systems Plan, 2017



Figure 13.8: Primary and Specialty Care Locations

Inappropriate use of emergency services is a national issue. A 2016 National Center for Health Statistics (NCHS) report found that approximately 20% of US adults seek health care services in the emergency room (Gindi, Black, and Cohen, 2016).<sup>9</sup> This is a result of multiple factors including lack of attachment to a usual source of primary care/primary care providers, lack of transportation, and job or child care constraints. The majority of emergency room care-seekers were people with Medicaid or Medicare insurance (Clark, Norris, and Schiller, 2017).<sup>10</sup>

### Availability of Behavioral Health Services

Behavioral health conditions encompass mental illness and substance use disorder. Provider locations that make up the Mental Health Rehabilitation System (**Figure 13.9**) and Substance Use Disorder Treatment (**Figure 13.10**) are shown below. According to a CDC report on mental illness, 1 in 4 US adults have a mental illness, and almost half of US adults will develop a mental illness during their lifetime (American Psychological Association, 2017).<sup>11</sup>





Source: DC Health Systems Plan, 2017



Figure 13.10: Substance Use Disorder

The coordination of behavioral health services and other medical services is vital to a wellfunctioning health system. In the District, mental health and mental disorders are a top priority identified in the DC Healthy People 2020 Framework (2016),<sup>12</sup> a shared community agenda that prioritizes health objectives and strategies city wide. The District of Columbia Health Systems Plan (2017)<sup>13</sup> findings also support this determination, emphasizing the need to better incorporate behavioral health services into traditional medical care practices.

### Health Communication and Literacy

Health Communication and Literacy are components of access that are the responsibility not only of individuals, but also of providers, health systems, and insurance companies. The quality of communication between patients and medical providers is a strong determinant of whether patients receive optimal care. From a medical care perspective, **health literacy** is defined as *the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions*<sup>14</sup> (emphasis added). Here, the focus is on functional health literacy of individuals in clinical settings. For more than a decade, national data have shown that health literacy is an issue for all Americans. Regardless of race, more than one in three adults have limited health literacy; and only 12% are considered to be "proficient." Only 9% scored in the highest numeracy levels. This means that nearly nine out of ten adults may lack the skills needed to manage their health and prevent disease.<sup>15, 16</sup>



### **Figure 13.11: Adults' Health Literacy by Race and Ethnicity (2003)** Source: U.S. Department of Education, Institute of Education Sciences (2006),

National Assessment of Adult Literacy 2003

Note: Racial/ethnic categories are mutually exclusive; White, Black, and other adults are Non-Hispanic.

The US Department of Education collects and reports data on adult literacy and numeracy skills. In 2006, they published the only national data on health literacy skills. Analysis of this data show that adults who self-reported the worst health also had the most limited health literacy skills.<sup>17</sup> As shown in **Figure 13.11**, the proportion of adults with basic or below-basic health literacy ranges from 28% for Whites to 65% for Hispanic adults. Traditional notions of educational attainment do not equate to, nor do they automatically confer, health literacy. Although lower health literacy is associated with less education, even people with strong literacy skills can face health literacy challenges (Kutner et al, 2006).<sup>18</sup> The evidence shows an array of socio-demographic differences in risk of low health literacy; with disparities in health literacy paralleling disparities in social and economic opportunities. This challenges traditional assumptions regarding health literacy as an individual's personal deficit; that is, their lack of knowledge and skills. It has become increasingly clear that health literacy is a systems issue which reflects increasing complexity both of health information and of the health care system itself. Systemic and individual factors in health literacy include communication skills of lay persons and professionals; lay and professional knowledge of health topics; culture; demands of the health care and public health system; and demands of the situation or context.<sup>21</sup> Health literacy also affects people's ability to navigate the healthcare system, including filling out complex forms and locating providers and services; share personal information, such as health history, with providers; engage in self-care and chronic-disease management; and understand mathematical concepts such as probability and risk. In recognition of inherent complexity, the application of universal precautions is recommended to minimize risks to all, assuming that everyone may have difficulty understanding and creating an environment where patients of all literacy levels can thrive (AHRQ 2010).

Within this broader contextual framework, health literacy should be reframed within three distinct, but related domains: **health insurance literacy**; **health care system literacy**; and **health behavior literacy**. The third is what most people refer to when discussing health literacy more generally, with the emphasis typically placed on healthy lifestyles or avoidance of bad behaviors, including poor performance related to disease self-management, that contribute to poor health outcomes. However, even within this health behavior literacy context, traditional individual and community "deficit" models persist.<sup>22</sup>

With the expansion of health insurance benefits under the Affordable Care Act, gaps in health insurance literacy and health system literacy have become more evident, as significant numbers of inexperienced new users are enrolled. Opportunities for health insurance companies to improve literacy require easily understandable communication of multiple types of information: insurance plans and options; covered services; accessing preventative, behavioral, dental and vision services; copays, deductibles, and co-insurance, versus premiums; within-network services; and prior authorization. Opportunities for the health system to improve literacy require developing a patient-centered model of navigation of the different levels of care, including when it is appropriate to access alternate levels, with awareness of cost variations. The levels range from self-care, through primary, urgent, and emergency care.

### Cultural and Linguistic Competence

Cultural and linguistic competence is the ability of health care providers and organizations to understand and respond effectively to the cultural and linguistic needs brought by the patient to a medical care encounter.<sup>23</sup> From a health care systems perspective, these are critical elements of the case for promoting universal improvements in health communication and literacy. Linguistic competence requires providing readily available, culturally appropriate, oral and written language services to limited English proficiency individuals. This is distinct from cultural competence, which is a set of congruent behaviors, attitudes, and policies that enable effective interactions in a cross-cultural framework.

Language access and interpretation are required by law, but care should be taken to ensure that all communications meet cultural competency needs and appropriate linguistic translation. Language barriers have been shown to affect quality of care delivery, as well as adherence to medications. Provision of services in a person's native language, has been shown to improve outcomes. Regardless of language ability, additional barriers are faced by recent immigrants to the US, who must learn how to navigate a fragmented and burdensome health system. Many immigrants come from countries with centralized or public medical and health services systems that facilitate affordable, quality care without the need for insurance coverage, or use a primary care provider to serve as a gateway to specialty care.

The US Census Bureau (Sept 2017),<sup>24</sup> shows that in 2016, 21.6% of the nation's population age 5 and above spoke a language other than English at home. Data for 2011–2015 show that 8.6% of US residents were **limited English proficient (LEP)**, which is equivalent to speaking English less than "very well." The District is home to at least 168 languages, with 17% of the resident population aged 5 and over speaking a language other than English at home (US Census Bureau, 2015;<sup>25</sup> US Census Bureau, 2016a<sup>26</sup>). The LEP average for the District, at 5.4%, is lower than the US average, as shown in **Figure 13.12**. However, the LEP rates are much higher in several neighborhoods, with a rate over 10% in five, peaking at 18.5% in Columbia Heights. Finally, as shown in **Figure 13.13**, while there is geographic variability in life expectancy at the statistical neighborhood level, as superimposed over both the percentage of the population that speak English less than very well (% LEP), there is no simple correlation. Many statistical neighborhoods with low percentages of residents with LEP also have low life expectancy.

# **MEDICAL CARE by Neighborhood Group and Life Expectancy** Figure 13.12: Speak English Less-than Very Well (Limited English Proficiency)

### PERCENTAGE OF LANGUAGE OTHER THAN ENGLISH SPOKEN AT HOME -SPEAK ENGLISH LESS THAN "VERY WELL" (POPULATION 5 YEARS AND OVER)



### **MEDICAL CARE by Neighborhood Group and Life Expectancy** Figure 13.13: Population **WITH** Health Insurance Coverage

### PERCENTAGE OF POPULATION WITH HEALTH INSURANCE COVERAGE (CIVILIAN NONINSTITUTIONALIZED POPULATION)



### Conclusion

The District of Columbia has long prioritized health insurance coverage to promote and protect the health of as many residents as possible. Additional benefits of the Affordable Care Act bolstered insurance rates, though neighborhood-level thematic mapping shows differing distributions of populations with any type of health insurance, those with public coverage, and those without any health insurance. Although people living without health insurance are now a small group, the situation impacts different racial/ethnic resident groups differently. Nearly 1 in 7 Hispanic residents and 1 in 15 Black residents have no health insurance, compared with 1 in 30 White residents (ACS 2011–2015).<sup>3</sup>

As shown in **Figures 13.12** and **13.13**, there is geographic variability in life expectancy at the neighborhood level. However, when superimposed over both the percentage of the population that speak English less than very well (% LEP), as well as percentages of people with health insurance coverage, there is no simple correlation. Simply having health insurance coverage is no guarantee of improved access, health outcomes, or life expectancy. This is consistent with the evidence base, where even with the same access to care, implicit bias can negatively impact care received—especially by people of color, immigrants, linguistic minorities, women, LBGTQ communities, and other historically disadvantaged populations (Chapman et al, 2013).<sup>9</sup>

As a result of strategic investment in the past decade, the District of Columbia Health Systems Plan (2017) shows that the city has a wealth of health system assets and resources, including ample primary, secondary, and tertiary medical care, in conjunction with a highly insured population. However, despite high resource availability, these assets are not being utilized as effectively as they should to promote health, improve outcomes, and increase the well-being of residents. In the new health insurance—rich environment, and with an increasingly complex health care system, a new paradigm that recognizes the social-determinant population health lens is essential.

National data have shown that health literacy is an issue for all Americans, regardless of income, race, or ethnicity, even though it is clear that some groups are more impacted than others. Traditionally, the burden for seeking and improving health literacy has emphasized health behaviors almost exclusively, with a tendency to focus narrowly on the individual and individual responsibility. A comprehensive and collaborative health literacy effort that touches each of the three key domains is needed. It should emphasize greater use of preventative health services and primary care, discourage inappropriate use of emergency department care, and enhance knowledge and practice of positive health behaviors, starting with the importance of the establishment and utilization of a medical home or primary care provider as the usual place of care.

Health literacy interventions should focus on the application of universal precaution bestpractices across the health care system as a whole, including from individual providers,
health centers and hospitals, and insurance companies. Health care systems and institutions, public, private and nonprofit alike, have a critical role to play in assuring access to care and promoting health—and health literacy, broadly defined. This includes improved medical care delivery and coordination to mitigate persistent barriers and effectively communicating clear health information more likely to drive the best decisions about accessing medical care. (AHRQ 2010).<sup>26</sup>

# References

- 1. Centers for Disease Control and Prevention. (2016, December). Understanding health literacy. Retrieved from <u>https://www.cdc.gov/healthliteracy/learn/understanding.html</u>
- 2. Bindman, A.B., Grumbach, K., & Osmond, D. (1995). Preventable hospitalizations and access to health care. *JAMA*,274 (4):305-311. doi:10.1001/jama.1995.03530040033037
- Smith, J.C., & Medalia, C. (2015, September). *Health insurance coverage in the United States:* 2014 current population reports H. Retrieved August, 2017, from https://www.census.gov/content/dam/Census/library/publications/2015/demo/p60-253.pdf
- 4. Ryan, C. (2013). *Language use in the United States: 2011.* ACS-22. Retrieved from https://www.census.gov/prod/2013pubs/acs-22.pdf
- 5. Kaiser Family Foundation. (2016, September).*Key Facts about the Uninsured Population. Retrieved from* <u>http://www.kff.org/uninsured/fact-sheet/key-facts-about-the-uninsured-population/</u>
- Artiga, S., & Damico, A. (2017). *Health coverage and care for immigrants*. Kaiser Family Foundation. Retrieved from <u>http://www.kff.org/disparities-policy/issue-brief/health-coverage-and-care-for-immigrants/</u>
- Smedley, B.D., Stith, A.Y., & Nelson, A.R. (2003). Unequal treatment–confronting racial and ethnic disparities in health care. ISBN: 0-309-08265-X. Washington, DC, The National Academies Press. Retrieved from <u>https://www.nap.edu/read/12875/chapter/1#ii</u>
- Gindi R.M., Black L.I., & Cohen, R.A. (2016). Reasons for emergency room use among U.S. adults aged 18–64: National health interview survey, 2013 and 2014. National health statistics reports; no. 90. Hyattsville, MD: National Center for Health Statistics. <u>https://www.cdc.gov/nchs/data/nhsr/nhsr090.pdf</u>
- 9. Clarke T.C., Norris T., & Schiller J.S. (2017). *Early release of selected estimates based on data from 2016 National Health Interview Survey*. National Center for Health Statistics. Available from: <u>https://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201705.pdf</u>
- 10. American Psychological Association. (n.d.). Data on behavioral health in the United States. Retrieved from <u>http://www.apa.org/helpcenter/data-behavioral-health.aspx</u>
- 11. DC Healthy People 2020 Framework (2018) <u>https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/FINAL%20DC%20H</u> <u>P2020%20Framework%20Report%205-23-16.pdf</u>
- 12. District of Columbia Health Systems Plan (2017) <u>https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20Health</u> <u>%20Systems%20Plan%202017\_0.pdf</u>

- Chapman, E.N., Kaatz, A., & Carnes, M. (2013) Physicians and implicit bias: how doctors may unwittingly perpetuate health care disparities. *Journal of General Internal Medicine*, 28(11), 1504-1510. http://doi.org/10.1007/s11606-013-2441-1
- 14. US Department of Health and Human Services (n.d.) Health literacy basics. Retrieved from <u>https://health.gov/communication/literacy/quickguide/factsbasic.htm</u>
- 15. DHS. (n.d.). America's health literacy: Why we need accessible health information. Retrieved from <u>https://health.gov/communication/literacy/quickguide/factsbasic.htm</u>
- 16. CDC. (n.d.). Population measures of literacy, numeracy, health literacy skills and technology use. Retrieved form: <u>https://www.cdc.gov/healthliteracy/learn/UnderstandingLiteracy.html</u>
- Kutner, M., Greenberg, E., Jin, Y., & Paulsen, C. (2006). The health literacy of america's adults: Results From the 2003 national assessment of adult literacy (NCES 2006–483). US Department of Education. Washington, DC: National Center for Education Statistics. <u>https://nces.ed.gov/pubs2006/2006483.pdf</u>
- Rikard, R., et al. (2016). Examining Health Literacy disparities in the United States: A third look at the National Assessment of Adult Literacy (NAAL). Retrieved From:Retrieved from <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5022195/</u>
- 19. Guzys, D., et al (2015) A critical review of population health literacy assessment. Retrieved from <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4351936/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4351936/</a>
- 20. Office of Disease Prevention and Health Promotion. (n.d.). Quick guide to health literacy. US Department of Health and Health Promotion. Retrieved from <a href="https://health.gov/communication/literacy/quickguide/factsbasic.htm">https://health.gov/communication/literacy/quickguide/factsbasic.htm</a>
- 21. Pleasant A., et al. (2015). Health literacy research and practice: A need for a paradigm shift. Retrieved from <u>https://www.ncbi.nlm.nih.gov/pubmed/26372030</u>
- 22. Agency for Health Care Research (AHRQ). (n.d.) Retrieved from <u>https://www.ahrq.gov/professionals/systems/primary-care/cultural-competence-</u> <u>mco/cultcompdef.html</u>
- 23. US Census Bureau. (2017). New American community survey statistics for income, poverty and health insurance available for states and local areas. [Press Release (CB17-157)]. Retrieved from <a href="https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html">https://www.census.gov/newsroom/press-releases/2017/acs-single-year.html</a>
- 24. US Census Bureau. (2015, November 03). *Census Bureau reports at least 350 languages spoken in U.S. homes*. Release Number: CB15-185. Retrieved August 02, 2017, from <u>https://www.census.gov/newsroom/press-releases/2015/cb15-185.html</u>
- 25. US Census Bureau. (2016a). *Demographics and Housing Estimates: 2011–2015 American Community Survey 5-year estimates.* Retrieved from https://www.census.gov/quickfacts/DC
- 26. Agency for Health Care Research and Quality (AHRQ). 2010. Health literacy universal precautions toolkit. <u>https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/healthliteracytoolkit.pdf</u>



"It really boils down to this: that all life is interrelated. We are all caught in an inescapable network of mutuality, tied into a single garment of destiny. Whatever affects one destiny, affects all indirectly."

#### -Dr. Martin Luther King, Jr.

Discussions of outdoor environments and health have traditionally stopped at the impact of air and water pollution, with little reference to the intrinsic value of the natural environment itself in promoting health. A growing evidence base, however, establishes important links between health and well-being and the quality of the surrounding outdoor environment, including open spaces such as parks or lakes, whether located within urban or rural areas. Exposure to natural outdoor environments positively impacts health and well-being, although the mechanisms are not well understood.

#### Positive Health Effects of Natural Outdoor Environments

Seminal research dating back to the mid-1980s underscores the physical and mental health benefits of exposure to natural and outdoor environments. This includes research on effects of environment on hospitalized post-surgical patients, employees, and prisoners. Viewing plants in gardens, interacting with animals, including pets, and participating in wilderness experiences have also been shown to have positive health benefits. A National Academies 2002 report reviewed the evidence and underscored the important relationship between human health and the natural environment, concluding that: "An even more direct connection between the environment and health is the potential enhancement of our physical, mental, and social well-being through daily exposure to the natural environment" (Institute of Medicine (IOM), 2002).<sup>1</sup>

More recent studies underscore health benefits for various segments of the population. A 2013<sup>2</sup> study concluded that the quality of the outdoor environment at day care centers influenced the health and well-being of pre-school children, correlating with leaner bodies, longer night's sleep, better well-being and higher mid-morning saliva cortisol levels. Another study, in 2014,<sup>3</sup> concluded that natural environments have restorative properties for mental health and recommended increased accessibility to well-maintained green space and greater promotion of such spaces' use for short and long-term benefits to mental health.

Another 2014<sup>4, 5</sup> report reviewed the available evidence and concluded that long-term exposure to green space has a range of beneficial health effects, including a reduction in premature mortality, cardiovascular disease, and mental health problems in adults; a reduction on blood

pressure in adults and pregnant women; a reduction in obesity and sedentary behavior; improvement in birth outcomes/increased birth weight; and improvements of cognitive function in children (**Figure 14.1**).

The results and associations for childhood asthma varied, depending on the type of green space. Some evidence suggested that lower socioeconomic groups may benefit more, and that living in close proximity to green space confers greater benefit than having green space farther away. The study found beneficial effects even after short-term exposure. Examples include an improvement in mood and reduction in stress levels. Exposure to green space was also found to help with physical rehabilitation after cardiovascular disease events.



Figure 14.1: Positive Health Effects of The Natural Outdoor Environment Source: Mark J Nieuwenhuijsen et al. BMJ Open 2014; 4:e004951<sup>4</sup>

Overall, the evidence confirms that spending more time in natural and outdoor environments green space (land), and blue space (water)—is positively associated with positive health outcomes, although the positive effects for blue space was less clear. Specific benefits include positive mental health scores, higher frequency of social contacts, and more physical exercise. User-perceived quality of the natural environments was also important and has a positive influence on restorative relief from stress. This detailed review of the evidence suggests that proximity to green space confers a tangible health benefit, that this benefit is particularly apparent among low-income residents, and that it is more pronounced with closer proximity to that space. Because users' perceptions of these spaces also contribute to their health benefit, community involvement and consideration of the local context of designed natural environments are strongly recommended.

DC Parks and Recreation Facilities 2017					
Facility Type	Quantity				
Green Space Total	905 acres				
Parks	371				
Playgrounds	94				
Urban Gardens	34				
Urban Farms	5				
Recreation Centers	76				
Athletic Fields	119				
<ul> <li>Basketball Courts – Outdoor (including kids courts)</li> </ul>	113				
<ul> <li>Tennis Courts – Outdoor (including kids courts)</li> </ul>	152				
Pools - Outdoors	19				
Pools - Indoors	11				
Spray Parks	25				
Dog Parks	22				

#### Natural and Outdoor Resources

#### Table 14.1: DC Parks and Recreation Facilities 2017

Source: DC Department of Parks and Recreation, 2017

The District has a wealth of natural and outdoor resources, including National Park spaces that are owned and maintained by the federal government. According to the national ParkScore benchmark— based on three criteria: park acreage, park facilities and investment, and park access—the District in 2017 ranked fourth out of 100 US cities, with a ParkScore of 79.<sup>6</sup> Despite this overall score and relative high rank, however, the data also show that residents earning less than 75% of the median city income have reduced levels of park access.

Beyond the large National Park spaces, over which District government has limited control, the DC Department of Parks and Recreation (DPR) manages 905 acres of green space, including 371 public parks, 94 playgrounds, and 76 recreation centers, as well as athletic fields, urban gardens, and other facilities as listed in **Table 14.1**. However, as indicated in **Figure 14.2**, which shows the distribution of parkland resources, there are still large areas within the District where more parkland may be needed, based on DPR 2014 estimates.<sup>7</sup>

# OUTDOOR ENVIRONMENT in the District of Columbia

Figure 14.2: Parks and Parkland Resources, Quality, and Availability



Source: Play DC, DC Department of Parks and Recreation, 2014<sup>7</sup>



## Physical Inactivity in the District of Columbia

The most recently available data on physical inactivity (**Figure 14.3**) indicate that overall, the District continues to underperform compared to the rest of the nation. In 2015, DC had significantly higher rates of adult physical inactivity than the US as a whole. Significant ward differences are also evident, as shown in **Figure 14.4.** The highest levels of inactivity were in Ward 7 (38%), followed by Wards 5 (27.7%) and Ward 8 (26.4%). In contrast, the lowest rates of adult physical inactivity were in Ward 3 (6.0%), followed by Ward 2 (8.4%).

**Figure 14.3: Reported Physical Inactivity – District and US Residents - BRFSS 2015** Source: DC Department of Health, Behavioral Risk Factor Surveillance System, 2015



## Figure 14.4 : Adult Physical Inactivity, Last 30 Days - BRFSS 2015

Source: DC Department of Health, Behavioral Risk Factor Surveillance System, 2015

# **OUTDOOR ENVIRONMENT by Zip Code and Life Expectancy** Figure 14.5: Pediatric (ages 2-17) Asthma Emergency Room Visits, 2014-2016



#### RATE PER 10,000 PEDIATRIC (age 2-17) ASTHMA EMERGENCY ROOM VISITS

Data Source: Hospital Discharge Data 2014 – 2016, DC Hospital Association Data Analysis: Center for Policy, Planning and Evaluation, DC Department of Health

## Outdoor Air Pollution and Health

Environmental pollutants contribute to poor outdoor air quality, which, in turn, cause increased mortality and chronic and acute respiratory problems such as asthma. Data released by the World Health Organization (2014)<sup>8</sup> shows that 1 in 8 deaths worldwide are the result of air pollution exposure and that such exposure accounts for a large portion of deaths from heart disease and stroke. According to the Centers for Disease Control and Prevention (CDC 2017),<sup>9</sup> outdoor air quality has improved across the US since the 1990s, but many challenges remain in protecting Americans from air quality problems. Ground-level ozone, the main component of smog, and particulate pollution are two of the many threats to air quality and public health in the United States. By one estimate, there are 200,000 premature deaths annually in the US attributable to combustion emissions (Caiazzo, Ashok, Waitz, and Barrett, 2013).<sup>10</sup>

Environmental pollutants also have profound effects on child health and development. Vrijheid, Casas, Gascon, Valvi, and Nieuwenhuijsen (2016)<sup>11</sup> found that lead, pesticides, and other environmental pollutants, such as car exhaust and industrial emissions, create potential risk for children. Issues related to climate change can also affect air quality and pollutants, when plants such as ragweed produce more pollen for longer periods of time, leading to an increased likelihood of acute or chronic health issues (K. King, 2017).<sup>12</sup> Tobacco smoke, while mostly understood as an indoor air pollutant, can also pollute public spaces, negatively affecting air quality. Policies that prohibit smoking near public buildings, in parks, or at bus stops reduce secondhand smoke exposure and mitigate its health risk.

The District of Columbia is situated in the center of the US Environmental Protection Agency's (EPA) regional Metropolitan Washington Non-Attainment Area, and must work in collaboration with our neighbors in suburban Maryland and Northern Virginia to reduce pollution in accordance with federal National Ambient Air Quality Standards (NAAQS)—health standards for six criteria pollutants (MWCOG, 2017).<sup>13</sup> Air quality issues within the region and the District are impacted by emissions from a combination of stationary sources (industry), mobile sources (vehicles), and air pollution transported from other states, with the heaviest impacts from the latter two categories.

According to the latest District of Columbia Ambient Air Quality Trends Report, 2014,<sup>14</sup> there are small differences in air quality between the District itself and the DC-MD-VA non-attainment region as a whole—and the District does a little better on some measures. To date, the District has always been in compliance with three of the six criteria air pollutants: nitrogen oxide (NO2), sulfur dioxide (SO2), and led (Pb). The city came into attainment of the carbon monoxide (CO) standard in 1996, and has continued to demonstrate attainment as required through 2016. In recent years, the District has consistently attained the standard for particulate matter (PM2.5). However, ambient air concentrations remain in non-attainment for one

pollutant: ground-level ozone (O3), although it is still somewhat below the DC-MD-VA as a whole.

#### Asthma: Children and Adults in the District

Asthma is a condition impacted by environmental pollutants, both outdoors and indoors. Data available at the zip code–level for children impacted by asthma in the District show differences in rates of pediatric (ages 2–17) asthma visits to hospital emergency departments (**Figure 14.5**), 2014–2016. While the available data does not enable analysis and visualization to the statistical neighborhood level, an overlay of PNG (statistical neighborhood) boundaries with life expectancy is shown for reference. As shown (**Figure 14.5**), there are higher rates of Asthma diagnosed emergency room visits for children living on the eastern half of the city, with the highest rates in Wards 6, 7 and 8.

**Figure 14.6** shows adult reported rates of asthma by ward for the District in 2015. Ward-level differences in adults reporting asthma are evident, with the highest at 23.4%, in Ward 8, followed by 15.3%, for Ward 6; 11.7%, for Ward 7; 10.6%, in Ward 3; and 9.9%, in Ward 4; with lower rates for the remaining wards (BRFSS 2015).



#### Figure 14.6: Adult Reported Asthma, BRFSS 2015

Source: DC Department of Health, Behavioral Risk Factor Surveillance System, 2015

#### Conclusion

Nature and the outdoors are critical to population health. The natural outdoor environment is not a static entity. Rather, it is a complex ecosystem that populations impact, and which impacts populations, with broad ramifications for health and well-being. The positive health benefits of the natural outdoor environment underscore the more immediate importance of this symbiotic relationship and the intrinsic value of nature itself. The documented threats of air pollution and poor air quality to health are well known. Ozone continues to be the biggest air pollution challenge for the District and surrounding region. Controlling emissions from mobile sources and getting cooperation from upwind states and regions to address transported pollution are necessary to improve public health.

Growing recognition of climate change as a consequence of human interaction with the environment underscore longer-term impacts and risks to the natural environment, with associated risks to human health and safety if not addressed. Background work in development of the District's plan to adapt to climate change looked at the number of residents with higher vulnerability, using social and economic indicators, including rates of obesity and asthma, as well as age. These results show uneven vulnerability, with Wards 7 and 8 registering the highest concentrations of vulnerabilities, including large elderly populations.<sup>15</sup> Given increasing manifestations of extreme weather including heat and cold, flooding, and other interruptions to ecosystems on land and water, climate change adaptation is critical to reducing impacts on all people and communities, especially the most vulnerable, who are likely to be disproportionately impacted.

# References

- Institute of Medicine. (2002). Health and the environment in the Southeastern United States: Rebuilding unity: Workshop summary. Washington, DC: The National Academies Press. <u>https://doi.org/10.17226/10535</u>. Retrieved from <u>https://www.nap.edu/read/10535/chapter/6</u>
- Soderstrom, M., Boldemann, C. Sahlin, U., Martensson, F., Raustrop, A., & Blennow, M. (2013). The quality of the outdoor environment influences children's health— a cross-sectional study of preschools. *Acta Paediatr: 102*(1):83-91. doi: 10.1111/apa.12047
- Pearson, D.G., & Craig, T. (2014). The great outdoors? Exploring the mental health benefits of natural environments. *Frontiers in Psychology, 5,* 1178. <u>http://doi.org/10.3389/fpsyg.2014:01178</u>
- Nieuwenhuijsen, M. J., Kruize, H., Gidlow, C., Andrusaityte, S., Antó, J. M., Basagaña, X., ... & Garcia, J. (2014). Positive health effects of the natural outdoor environment in typical populations in different regions in Europe (PHENOTYPE): A study programme protocol. *BMJ open*, 4(4), e004951.
- Van Gent, D. (2017). Positive health effects of the natural outdoor environment in typical populations in different regions of Europe (Phenotype). Community Research and Development Information Service (CORDIS). Retrieved from http://cordis.europa.eu/project/rcn/100865\_en.html
- 6. The Trust for Public Land. (2017). ParkScore. Retrieved from <u>http://parkscore.tpl.org/map.php?city=Washington,%20D.C.#sm.0000a0hjfi16jddsxt5654yqz5n</u> <u>pi</u>
- 7. DC Department of Parks and Recreation. (2015, January). District of Columbia: Parks + Recreation Master Plan. DC Office of Planning. Retrieved from <u>https://dpr.dc.gov/sites/default/files/dc/sites/dpr/publication/attachments/DCPRMP\_Vision%2</u> <u>BImplementation%20Final%20Document\_123014\_sm</u>
- World Health Organization (WHO). (2014). 7 million premature deaths annually linked to air pollution. World Health Organization [News Release]. <u>Retrieved from</u> <u>ttp://www.who.int/mediacentre/news/releases/2014/air-pollution/en/</u>
- 9. Centers for Disease Control and Prevention. (2017, December). *Air Quality*. Retrieved from <u>https://www.cdc.gov/air/default.htm</u>
- Caiazzo, F., Ashok, A., Waitz, I. A., Yim, S. H., & Barrett, S. R. (2013). Air pollution and early deaths in the United States. Part I: Quantifying the impact of major sectors in 2005. *Atmospheric Environment*, 79, 198-208. <u>https://doi.org/10.1016/j.atmosenv.2013.05.081</u>
- 11. Vrijheid, M., Casas, M., Gascon, M., Valvi, D., & Nieuwenhuijsen, M. (2016). Environmental pollutants and child health—a review of recent concerns. *International journal of hygiene and environmental health*, *219*(4), 331-342. <u>https://doi.org/10.1016/j.ijheh.2016.05.001</u>

- 12. King, K. (2017, July 11). *Report: Smog, ragweed hit the vulnerable hard in DC area*. Retrieved August 01, 2017, from <u>http://wtop.com/health-fitness/2017/07/report-smog-ragweed-hits-vulnerable-hard/</u>
- Metropolitan Washington Council of Governments (MWCOG). (2017, September). Improving the region's air: Air quality trends for Metropolitan Washington." Retrieved from <u>https://www.mwcog.org/file.aspx?andA=RAnsJyA6zkelm02ACIYoHuGcecKf90fGglm9WCBKb7E%</u> <u>3D</u>
- DC Department of Energy and Environment. (DOEE 2014). District of Columbia ambient air quality trends report, 2014. Retrieved from <u>https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service\_content/attachments/AQ%20TRE\_NDS%20Report%20for%20DDOEwebsite\_finalDraft\_2014Oct29.pdf</u>
- 15. DC Department of Energy and Environment (DOEE). (n.d.). *Climate ready DC.* [DRAFT] Retrieved from

https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service\_content/attachments/CRDC%20D raft%20for%20Public%20Comment.--Web%20(Reduced)\_0.pdf



# Chapter 15: Community Safety

"Safety is critical because it reduces the opportunity to be healthy. There are many people in this country trapped in their homes, older people who are afraid to go out because of the violence in their communities. It's going to impact people's ability to be mobile enough to get physical exercise, physical activity, to be mobile enough to have relationships with their neighbors."<sup>1</sup>

- Dr. David Satcher, Former Surgeon General"

In order to regularly make healthy choices, people need easy access to a range of healthy opportunities, and that starts with living in safe neighborhoods and communities. **Community safety** has been defined as "the right of all individuals living, working and visiting to go about their daily lives without fear of risk of harm or injury."<sup>2</sup> The greatest deterrent to violence and crime is not a community saturated with law enforcement officers, but a healthy community, with vibrant neighborhoods alive with residents.<sup>3</sup> Community safety is critical to a healthy community, and a healthy community is critical to community safety. A safe community includes the proactive prevention of both intentional and unintentional injuries and accidents that harm, injure, and kill people. Unintentional injuries and accidents have significant lifetime costs but are frequently overlooked, as they tend to attract less media coverage than numerically less frequent violent incidents. Indeed, as has already been shown, accidents and injuries are the third-leading cause of death in the District of Columbia, where homicides are ranked number eight. On average, rates are more than twice as high for Washingtonians lost annually to accidents than to homicides—43.2 per 100,000, vs. 17.5 per 100,000, 2011–2015.

The psychological impacts of violent injuries and deaths affect community safety by generating fear, stress, and threats to perceptions of personal safety more generally, as well as through the cumulative impact of sustained community trauma. A neighborhood may provide amenities such as green space and playgrounds, but if there are issues pertaining to community safety, or perceptions of threats and crime, children (prohibited by their guardians) and adults may limit their exposure to outside environments and underutilize these spaces. This creates negative physical and emotional health impacts, including stress, obesity, and related chronic conditions as a result of lack of exercise and outdoor activity. The evidence is clear regarding the importance of public health approaches to improving community safety, including its positive impact on violence prevention itself.<sup>4, 5, 6</sup>

In this chapter, community safety will be approached from three broad perspectives. Starting with data related to accidents and injuries (intentional and unintentional) in the District, as well as the geographic distribution of violent deaths and crime, the discussion will move to framing

community safety through the lens of community violence and crime prevention as public health issues. Finally, the discussion will consider broader structural drivers as barriers to community safety that suggest the relevance of the application of a community trauma lens.

#### Accidents and Injuries-Intentional and Unintentional

Many injuries are predictable and preventable. Yet by recent estimates, 30 million people in the United States (9.7% of the population) annually are treated for injuries, and nearly 200,000 people die.<sup>7</sup> In the District of Columbia, injury death analyses have shown overall improvements over time. **Figure 15.1** shows that, overall, the total injury rate, at 57.7 per 100,000, is lower than the national average. The temporal trend has also improved slightly, down from 60.4 per 100,000 in 2009 through 2013.



#### Figure 15.1: Injury Death Rates by Intent: US and DC, 2011–2015 Source: DC HEALTH CPPE 2017

Unintentional injuries remained about the same, at 32.4 per 100,000 (compared with 32.5 in 2009 through 2013). Improvements have also been seen in relation to violent deaths. The District homicide death rate 2011–2015, at 16.0 per 100,000, is down from 17.3 in the 2009 through 2013 period. The suicide rate also declined, down from 6.1 in 2009 through 2013, to 5.8 for the current five-year period, 2011–2015.

**Figure 15.2** shows rates by the mechanism of deaths due to injury, 2011–2015. For four of the six mechanisms shown, the District has rates equal to or better than the national rate. However, for firearms and cut and pierce mechanisms, the District rates significantly outpace the national rates, though the former have seen a slight improvement over time. All mechanisms slightly decreased from the previous analysis period, with the exception of poisoning (including overdose) deaths, which went up from 15.2 in 2009 through 2013, to 15.9 in 2011–2015; and falls, which increased slightly, from 8.6 to 8.9 over the same periods. Each of these major causes impact different segments of the population more severely.



# Figure 15.2: Rates for Leading Causes of Injury Death Mechanism: US and the District 2011–2015

Source: DC HEALTH CPPE 2017

# The Opioid Epidemic: National Context

In the past 15 years, overdose deaths caused by opioids have tripled nationally, in 2016 surpassing deaths from traffic accidents across the United States. No state has been spared the epidemic's impact, and, given the prevalence of more dangerous synthetic opioids like fentanyl and carfentanil, opioid deaths are projected to continue rising across the country.

## District Opioid Use Estimates: 2014 through 2015

Official sources estimate that within the District, an annual average of about 3,000 individuals age 12 or older (0.61% of individuals in this age group) in 2014 through 2015 had used heroin in

the past year. The annual average percentage in that time period was not significantly different from the annual average percentage in 2013 through 2014. The District's annual average of past-year heroin use among individuals age 12 and older for 2014 through 2015 was also similar to the corresponding national annual average percentage (SAMHSA 2017).<sup>10</sup>

#### District Opioid Deaths, 2014 through 2015

The picture of current opioid overdose deaths in the District contrasts with that of the national picture in demographic terms, especially related to the age, race, and gender of impacted individuals. The age distribution of opioid overdose deaths in the District compared with that of the US shows lower rates in the District across all age groups, but with the notable exception of the 55 years and older age range (Figure 15.3). Nationally, only 19% of opioid deaths are in this age group, compared with 45% in the District. The population most affected by opioid overdose deaths in the District compared with that of the nation by race and ethnicity also contrasts sharply. While nationally, 84% of deaths are to Non-Hispanic Whites, within the District, 84% of deaths are to Non-Hispanic Blacks or African-Americans. In the District, Hispanics also make up a lower share of opioid overdose deaths, compared to the national average (Figure 15.4).



Age Distribution of Opioid Overdose Deaths in DC Compared to the US Population (2016)

Figure 15.3: Opioid Epidemic in DC vs. National Experience — Age Distribution 2016 Source: DC HEALTH CPPE 2017



#### Racial Distribution of Opioid Overdose Deaths in DC Compared to the US Population (2016)

Figure 15.4: Opioid Epidemic in the District versus National Experience — Race and Ethnicity 2016 Source: DC HEALTH CPPE 2017

The data show a subset of older black males (men aged 54 years and older) that are most significantly impacted by the opioid epidemic in DC. Between 2014 and 2016, the number of drug overdoses due to opioid use more than doubled for Black residents. In 2016, nearly 80% of opioid deaths in the city were individuals older than 40, and 70% were male.

The national opioid narrative is built on the premise that the epidemic had been driven by an increase of new users, the majority of whom have become addicted to prescription opioids and who subsequently transition to heroin as more stringent prescribing practices were introduced; and as street prices of diverted opioids rose. Detailed epidemiological research and analysis shows that a large proportion of overdose deaths in the District included victims that may have been using illicit drugs for decades and who may have also survived overdoses in the past. The increased fatality rates during the course of the current epidemic is thought to be linked with the availability of newer and more dangerous illicit street drugs, making consumption riskier. Several fentanyl analogs, as well as carfentanil, have been found in the District, contributing to the significant increase in fatalities.

The District of Columbia has developed a multi-pronged response strategy to the opioid epidemic. It is being deployed with the help of multiple stakeholders, including law enforcement, intelligence, the treatment community, insurance groups, and many others.

## Fall Injuries, Fatal and Non-Fatal

Falls are a major health concern for older adults. Falls can result in broken bones and head injuries. Each year, 2.8 million older adults in the United States are treated in emergency departments for fall injuries.<sup>11</sup> Within the District of Columbia, falls are the third leading cause of death due to injury in 2011–2015 and have increased since 2009 through 2013. The number of emergency room visits due to falls among older adults was 3,019 in 2015 (SHPDA, CPPE, DC Health).<sup>12</sup> This was not a significant change from the year before.

## Transportation and Motor Vehicle Injuries

Transportation and motor vehicle injuries are the leading cause of death for children (5 to 9 years), adolescents (10 to 14 years), and young adults (15 to 24 years) (CDC, 2015).<sup>13</sup> In 2015, there were 35,092 deaths nationally from fatal traffic crashes in the United States (NHTSA, 2015).<sup>14</sup> In 2016, an estimated 40,200 people died in accidents involving motor vehicles in the US, a 6% increase from the year before (National Safety Council, 2017).<sup>15</sup> Traffic crashes affect not only drivers but in many cases involve pedestrians or bicyclists. Nationally, 15% of all road fatalities are pedestrians, with 5,376 such deaths in 2016 (NHTSA, 2015;<sup>14</sup> NCSA, 2017<sup>16</sup>). Some of the primary reasons for these accidents include poor vision and visibility at night (74%) and alcohol involvement, either by the driver or the pedestrian (48%) (NCSA, 2017).<sup>16</sup>

Within the District, there were 28 motor vehicle deaths in 2016, compared to 26 in 2015 (National Safety Council, 2017). In 2016, there were 8,341 injuries related to traffic crashes (Arhin, 2016).<sup>17</sup> Of the crashes in the District in 2015, 1,243 involved pedestrians. Vision Zero is a city-wide plan that engages collective impact model to reduce pedestrian fatalities in the District to zero by the year 2024.

#### Violence & Community Safety

The World Health Organization (2002)<sup>18</sup> defines **violence** as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation."

The focus of public health is promoting the health, safety, and well-being of entire populations and striving to provide the maximum benefit for the largest number of people. The WHO public health approach is deliberately broad, and includes not only interpersonal violence, such as assault and homicides, but also self-harm and suicidal behavior. Additionally, a wide range of acts going beyond the physical are included, such as threats and intimidation as well as their less visible consequences, resulting from stress and psychological harm, that compromise the health and well-being of individuals, families, and communities (WHO).<sup>18</sup>

According to the CDC, each year more than 57,000 people in the United States die as a result of violence. In 2013, 16,121 people were victims of homicide and 41,149 committed suicide (2.5 times as many). Those who survive violent crimes have a higher risk of serious, long-lasting physical or emotional impairment. In addition, violence has detrimental effects on the larger society, eroding communities by reducing productivity, decreasing property values, and disrupting social services (SSAC 2016).<sup>18</sup> By one recent estimate, the annual total expenditures on violence-related fatalities was approximately \$671 billion, including medical costs and lost work (Curtis, Simon, Haegerich, Luo, and Zhou, 2016).<sup>20</sup>

## Violent Deaths in the District

Following WHO's definition of violence to include self-harm, **Figure 15.9** presents violent deaths in the District by neighborhood. In contrast with the data presented earlier in this report, which focused independently on assaults and homicides as the eighth leading cause of death in the District, this visualization combines homicides and suicides, providing a composite rate for all violent deaths. From this vantage point, the picture of violence is better understood as a community-wide issue that affects all neighborhoods, albeit at different rates. Of the total of 718 violent deaths over 2011–2015, 74% were homicides, with the remaining 26% consisting of suicides. This mix contrasts with the nation as a whole, where suicides typically constitute 60% of the violent death total.

Violence is a major cause of death for adolescents and young adults, 15 to 34 years of age. National data for 2014 show that homicide was the leading cause of death for African-American males ages 15 to 34, and the second-leading cause of death for Latino males ages 15 to 34 (CDC, 2017c and 2017d).<sup>21, 22</sup> Of all homicide deaths in the District, more than 70% were people ages 16 to 39 years. The proportion rises to 81% for African-American males.

#### Violent Deaths in the District, 2011–2015

Trends in violent deaths for the five-year period (2011–2015) in the District of Columbia are presented in **Table 15.1** and **Figure 15.5.** In total, there were 718 violent deaths, of which 74% were homicides.

Year of Death	2011		2012		2013		2014		2015		Total 2011	-2015
	N	%	N	%	N	%	N	%	N	%	Ν	%
Manner												
Homicide	108	77.1%	85	71.4%	93	51.5%	102	66.7%	142	80.7%	530	73.8%
Suicide	32	22.9%	34	28.6%	37	28.5%	51	33.3%	34	19.3%	188	26.2%
All	140	100%	119	100%	130	100%	153	100%	176	100%	718	100%

Table 15.1: Number of Resident Violent Deaths by Manner and Year, 2011–2015Source: DC HEALTH CPPE 2017



\*Rates based on annual residential population estimates for Washington, D.C. (Appendix C.2)

# Figure 15.5: Violent Death Trends, District Residents (per 100,000), by Manner of Death, 2011–2015

Source: DC HEALTH CPPE 2017

#### Homicide

Despite the long-term downward trend in homicides across the District over the past two decades, as shown in the **Table 15.1** and **Figure 15.5**, there has been a gradual increase since 2012. A spike in homicides in 2015 saw the number of deaths rise 39% to a total of 142 homicides, then the highest in the city since 2008. Over the three-year period 2009 to 2011, the homicide rate in the District, at 17.3 per 100,000, was more than three times the national rate of 5.3 (DCHP2020, 2016). The District rate has since declined slightly to 16.0 per 100,000. However, this is still over three times the US rate, which also saw a slight decline (5.2 per 100,000).





Source: DC HEALTH, Center for Policy Planning & Evaluation. 2011-2016 Leading Causes of Death

As shown in **Figure 15.6**, increased homicide rates in the District were evident for virtually all groups and races, with the exception of Black and Asian/Pacific Islander females. However, the background demographic and well as geographic distribution showed disproportionality in the incidence of homicides across the city (not shown).

# Violent Deaths by Gender, DC 2011-2016

Figure 15.7: Homicide and Suicide Deaths by Gender, District of Columbia



Figure 15.7a: Homicide Rates by Gender, DC, 2011-2016

Source: DC HEALTH, Center for Policy Planning & Evaluation. 2011-2016 Leading Causes of Death



**Figure 15.7 b: Suicide Rates by Gender, DC, 2011-2016** Source: DC HEALTH, Center for Policy Planning & Evaluation.

Health Equity Report: District of Columbia 2018

#### Suicide

Nationally, suicide accounted for almost two-thirds (62%) of firearm deaths across the nation (CDC, 2017a). In 2015, the total cost of suicide in the United States was \$56.9 billion, including medical costs and lost work (CDC, 2017b).<sup>23</sup>

Over the past decade in the District, suicides have been on the rise. In 2014, there were a total of 51 suicides, higher than any year going back to 2004. The number dropped to 34 in 2015, more in line with prior years **(Table 15.1).** As shown **(Figure 15.7)** over 2011–2015, Black residents accounted for 50% of all suicide deaths, and White residents accounted for 41%. Gender differences were also evident (**Figure 15.8b**), with one in four (25%) of completed suicides occurring among women, with the remaining three-quarters (75%) amongst men. Differing gender rates are also shown for homicide **(Figure 15.8a)**.



Homicides and Suicides of DC Residents by Race/Ethnicity

Figure 15.8: Homicide and Suicide, 2011-2015, All Deaths, by Race and Ethnicity Source: DC HEALTH CPPE 2017

**Figure 15.8** shows cumulative shares of violent deaths (homicides and suicides) by race and ethnicity, 2011–2015. The vast majority of homicide victims were black (94%), and 88% were male (not shown).

The data also indicate that while victims of homicide live in every ward of the District, those most adversely affected were residents of Wards 5, 7, and 8, with concentrations in several neighborhoods.

While the number of homicides decreased in 2016, Wards 7 and 8 are still the most affected.

# **COMMUNITY SAFETY by Neighborhood Group and Life Expectancy** Figure 15.9: Violent Death Rates per 100,000 (Combined Homicide, Suicide)

# AGE-ADJUSTED VIOLENT DEATHS RATE, 2011-2015 (DISTRICT RESIDENTS)



#### Community Violence

The geographic distribution of violent deaths across the District, 2011–2015, by neighborhood, is presented in **Figure 15.9**. While violent deaths are a problem shared by all 51-statistical neighborhoods, differences across them for violent deaths combined (homicide and suicide) are evident. The highest concentrations are in neighborhoods in the south and southeast of the District. Superimposed life expectancy estimates show alignment between the highest violent death rates and the lowest life expectancy.

From a public health perspective, homicide and suicide are neither isolated nor purely individualized problems. Violence is not randomly distributed. The same social factors that shape health—including education, income and wealth, and related conditions where we live, learn, work, and play—are strongly linked to violence.<sup>5</sup> Violence is part of a broader spectrum of sociodemographic inequality. Community violence affects all residents, and should be understood as part of the balance of community risks and protective factors. Intergenerational impacts are also important, because children exposed to violence are affected across their entire lives.

Research shows that there are links between multiple forms of violence and that they collectively have a cumulative impact. The various risks and protective factors related to violence can be defined in terms of individual, societal, community, and relationship factors, a summary of which is presented in **Table 15.2**.

COMMUNITY VIOLENCE RISK AND RESILIENCE FACTORS					
Cultural Norms that Support Aggression <sup>23</sup>					
<ul> <li>Media violence</li> <li>Societal income inequality</li> <li>Weak health, educational, economic, and social policies and laws</li> <li>Harmful norms around concepts of masculinity and femininity</li> </ul>					
Children's Exposure to Violence and Life Course Effects <sup>24</sup>					
<ul> <li>Disrupted education</li> <li>Lower job prospects</li> <li>Fragmented relationships</li> <li>Legal problems</li> <li>Incarceration</li> <li>Serious injury, illness, and death</li> </ul>					
Community Risk Factors	Community Protective Factors				
<ul> <li>Neighborhood poverty          <ul> <li>High alcohol outlet density</li> <li>Community violence</li> <li>Lack of economic opportunities and high unemployment rates</li> <li>Poor neighborhood support and cohesion</li> </ul> </li> </ul>	<ul> <li>Coordination of resources and services among community agencies</li> <li>Access to mental health and substance abuse services</li> <li>Community support and connectedness</li> </ul>				
Relationship Risk Factors	Relationship Protective Factors				
<ul> <li>Social isolation          <ul> <li>Poor parent-child relationships</li> <li>Family conflict</li> <li>Economic stress</li> <li>Association with delinquent peers</li> <li>Gang involvement</li> </ul> </li> </ul>	<ul> <li>Family support and connectedness</li> <li>Connection to caring adult</li> <li>Association with pro-social peers</li> <li>Connection and commitment to school</li> </ul>				

#### Table 15.2: Community Violence Risks and Resilience Factors

Source: Wilkins, N. et al, (2014)

## Crime: Trends and Victimization

Research shows that variations in levels of violent crime are linked to complex characteristics of neighborhoods including disadvantage, segregation, land use, social control, social capital, and social trust, as well as the characteristics of nearby neighborhoods.<sup>26</sup>

Starting in the mid-1990s, crime rates nationally and locally, as well as internationally—both violent and property crimes—began to decline. Although it was widely assumed that the Great Recession, which started at the end of 2007, would change the trajectory, it did not, and the decline continued.<sup>27</sup>

A summary from the Bureau of Justice Statistics (BJS) National Crime Victimization Survey (NCVS) on race and ethnicity of victims and offenders, 2012–2015, provides the following insights from a national perspective (October 2017): <sup>28</sup>

- In the majority of violent victimizations, the White victims' offenders were White (57%) and the Black victims' offenders were also Black (63%).
- The rates of total violent crime, serious violent crime, and simple assault were higher for intra-racial victimizations than for interracial victimizations.
- From 1994 to 2015, both White-on-White violence (down 79%), and Black-on-Black violence (down 78%) declined at similar rates.
- During 2012 through 2015, there were no differences among White, Black, and Hispanic intra-racial victimizations reported to police.

## Crime in the District: Trends and Rates

In the District of Columbia between 1995 and 2014, violent crimes (including homicide, and other non-fatal violent crimes such as rape, robbery, and aggravated assault) declined by an estimated 53%. Property crimes (burglary, larceny-theft, motor vehicle theft, and arson), fell by 45% (Uniform Crime Reports). Metropolitan Police Department (MPD) data show that overall crime in the District went down by 1% from 2015 to 2016, with violent crime dropping by 10%. Improvements continued from 2016 to 2017.<sup>29</sup>

A one-year summary of crime incidents by statistical neighborhood for the District of Columbia in 2016 is provided in **Figure 15.10.** Significant differences in the number of crimes by statistical neighborhood are shown, as are the geographic concentrations. The highest numbers of crimes are in neighborhoods located towards the center, Downtown, and commercial areas of the city. Despite some similarities, this spatial landscape differs from that shown for violent deaths (homicide and suicide combined) presented earlier **(Figure 15.9).** 

# **COMMUNITY SAFETY by Neighborhood Group and Life Expectancy** Figure 15.10: Incidents of Crime (1-year total, 2016)

#### NUMBER OF CRIME INCIDENTS (2016)



#### **Crime Prevention**

Research shows that the most effective community crime prevention programs engage a broad, evidence-based community safety paradigm that promotes equity, rather than being narrowly restricted to reducing crime. They are oftentimes grounded in norms and standards similar to those promoted by the United Nations (UN) Guidelines for Prevention of Crime, 2002.<sup>30</sup> The eight UN principles include: government leadership; socioeconomic development and inclusion; cooperation and partnership; sustainability and accountability; use of knowledge-base; human rights, rule of law, and culture of lawfulness; interdependence; and differentiation, which recognizes unique vulnerable populations and gender-specific needs.

#### **Proactive Policing**

Over the past 20 years, much has been learned (mostly via trial and error) across the nation about crime prevention within what has been broadly described as "proactive policing." The National Academies of Science, Engineering, and Medicine (NASEM 2017) report<sup>31</sup> defined **Proactive Policing** as *all policing strategies that have as one of their goals the prevention or reduction of crime or disorder and that are not reactive in terms of focusing primarily on uncovering ongoing crime or on investigating or responding to crimes once they have occurred* (NASEM (2017), p. S-1).

PROACTIVE POLICING					
4 Strategy Types	Intervention Descriptions	Policing Methods/Tactics Examples			
Place Based	Capitalize on growing research base that shows that crime is concentrated in specific places within a city, as a means of more effectively allocating police resources. Main applications have been directed at micro- geographic hotspots	<ul> <li>Hot Spots Policing</li> <li>Predictive Policing</li> <li>Closed Circuit Policing</li> </ul>			
Person Focused	As above, capitalizes on concentration to proactively prevent crimes, but focuses on a subset of offenders, with emphasis on high- rate criminals who have been identified as a committing a large proportion of crimes in the community	<ul> <li>Offender-Focused Deterrents</li> <li>Stop, Question, and Frisk (SQF)</li> </ul>			
Problem Solving	Focuses on specific problems viewed as contributing to crime incidences and can be ameliorated by police. A systematic/ iterative approach to prevent future crime is used	<ul> <li>Problem Oriented Policing</li> <li>Third Party Policing</li> </ul>			
Community Based	Looks to strengthen community social resilience and collective efficacy, and build infrastructure to coproduce safety and crime prevention. Includes strengthening bonds between police and residents.	<ul> <li>Community Orientated Policing</li> <li>Procedural Justice Policing'</li> <li>Broken Window Policing</li> </ul>			

 Table 15.3 : Proactive Policing Landscape Summary, 2017

 Source: National Academies of Sciences, Engineering, and Medicine, 2017

Based on strategies that are commonly applied by US police agencies, the National Academies (2017) analysis identified four broad approaches under the proactive policing umbrella as follows: place-based; person-focused; problem-solving; and community-based **(Table 15.3).** None are isolated standalone programs but, rather, represent sets of methods and tactical approaches to crime prevention deployed to meet strategic goals across the landscape of American policing (NASEM (2017), S-1, and S-2).<sup>31</sup>

For each of the four strategic approaches and related tactics, the Academies' review considered not only their effect on crime prevention and control, but also their impact across three critical areas: law and legality; impacts on the community; and racial disparities and racially-biased behavior.

All place-based strategies, with the notable exception of Stop, Question and Frisk (SQF), did not lead to unintended negative and counterproductive community outcomes (NASEM (2017), 8-18).<sup>31</sup> Specifically, SQF, when it is indiscriminately focused across a jurisdiction, or broken windows policing programs that rely on a very generalized approach to misdemeanor arrests ("zero tolerance"), did not show evidence of effectiveness.

Community-based strategies are frequently promoted as serving dual roles, both as promoting better relations between police and the public, as well as greater crime control. However, the Academies' review raised questions with respect to the latter, and found that there was limited evidence of narrowly defined crime prevention benefits. Community-based programs are, therefore, recommended as promising strategies if more limited community engagement goals and improved community relations are the priority (NASEM (2017), 8-18).<sup>31</sup>

Overall, however, the Academies' review concluded that there is insufficient evidence to suggest that any or all of these strategies are effective for large-scale application across entire jurisdictions. They noted that one of the challenges of the evaluation process itself was that many of these programs used concurrent deployment of multiple tactics. However, they suggest that better outcomes may be obtained when programs are hybridized across multiple approaches (NASEM (2017), 8-19).<sup>31</sup>

#### Community Trauma

In the face of persistent violence in many communities, there is growing recognition that despite some improvements, fragmented responses have limited sustainable effectiveness. As a result, there is increasing interest in an analysis related to a population health approach, with an emphasis on opportunities for addressing collective trauma at the community level. From this perspective, the widespread nature of trauma as an epidemic at the population level results in the undermining of traditional efforts to promote health, safety, and well-being.

The Prevention Institute (2015)<sup>6</sup> identified the primary symptoms of community trauma, as rooted in structural drivers with place-based outcomes, as follows:

- **The social-cultural environment:** Economic and social processes that concentrate poverty and urban decay in inner-city neighborhoods damages social networks and trust and the ability to take action for change and social norms.
- The physical/built environment: Economic and social changes over the past 50 years have led to communities where high rates of poverty are concentrated into neighborhoods with crumbling infrastructure; more recently, pressures of gentrification and displacement add elements of toxic stress that exacerbates community trauma in poor inner-city and suburban communities.
- The economic environment: Levels of violence, crime and delinquency, education, physiological distress, and various health problems are affected by neighborhood characteristics.

#### Conclusion

Promoting community safety requires attention to reducing both intentional harms (e.g. homicides and suicides) as well as unintentional injuries (e.g. traffic safety and falls). A public health-informed approach to community safety looks to opportunities across multiple sectors—law enforcement being only one among many—that have the potential to make neighborhoods and communities safer.

A safe community is a healthy community. The evidence is clear that neither crime nor violence prevention are problems best addressed by increasing policing tactics alone. Efforts to do so risk increasingly repressive policing. Law enforcement—only solutions have been shown to be costly, difficult to apply, and frequently counterproductive. Alternatively, preventing problems in the first place has been shown to bring considerable benefits and cost savings.

Research and practice show that effective community safety and crime prevention programs and strategies must target changes in community infrastructure, culture, and/or the physical environment in order to generate sustained improvements. A diversity of approaches, frequently in combination, is typically needed, including comprehensive or multi-disciplinary efforts. Successful strategies frequently utilize collaborative approaches that engage residents, community and faith-based organizations, and local government agencies in the design of locally specific solutions.<sup>33</sup>

Community safety strategies focused on prevention and geared to creating safer, more just, and inclusive communities engages and improves community quality of life for all residents and visitors. The evidence shows that healthy communities—those that have positive attributes and

alternatives such as quality schools, economic opportunities, clean and well-designed physical environments, and structured activities that young people find meaningful—create conditions that improve community safety and protect against violence.

Data and visualization of crime incidence for the District presented in this chapter show higher concentrations of crime towards the center of the city, as measured by number of incidents alone. By contrast, visualization of age-adjusted violent deaths (homicides and suicides combined), show a different geographical pattern that although citywide is more heavily concentrated toward the south and east of the city. The overlay of life expectancy, and the lowest years of life expectancy in particular, is more closely correlated with elevated violent death rates than with crime volume alone, as measured by the number of incidents.

The stressors of living in neighborhoods with inadequate access to economic and educational opportunities has been flagged as indicative of trauma at the community level. Reduced community safety in the District is correlated with gaps in health-promoting community resources. Evidence shows that factors such as lack of jobs, racial and economic segregation, concentrated poverty, and high alcohol outlet density negatively impact community safety, quality of life, and neighborhood quality, as well as the likelihood of violence.

# References

- 1. Anne Glausser. (2015). *"Former Surgeon General Dr. David Satcher Says Violence is a Top Public Health Priority"* Retrieved from: Ideastream, http://wcpn.ideastream.org/news/former-surgeon-general-dr-david-satcher-says-violence-is-a-top-public-health-priority
- 2. Mackay Regional Council. (n.d.). *Community Safety*. Retrieved from <u>http://www.mackay.qld.gov.au/residents/home\_and\_suburb/community\_safety</u>
- Schweig, S. (2014, March). Healthy communities may make safe communities: Public health approaches to violence prevention. *NIJ Journal*,273,52-59 Retrieved from <u>https://www.nij.gov/journals/273/Pages/violence-prevention.aspx</u>
- 4. Satcher, D. (1995). Violence as a public health issue. Retrieved from <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2359417/pdf/bullnyacadmed01034-0051.pdf</u>
- Robert Wood Johnson Foundation (RWJF). (n.d.). Violence, Social Disadvantage and Health. Retrieved From:Retrieved from <a href="https://www.rwjf.org/content/dam/farm/reports/issue\_briefs/2011/rwjf70452">https://www.rwjf.org/content/dam/farm/reports/issue\_briefs/2011/rwjf70452</a>
- Prevention Institute (2015) Adverse community experiences and resilience: A framework for addressing and preventing community trauma. Retrieved from <u>https://www.preventioninstitute.org/publications/adverse-community-experiences-and-resilience-framework-addressing-and-preventing</u>
- 7. Robert Wood Johnson Foundation (RWJF). (n.d.). *Community safety*. University of Wisconsin. Retrieved from <u>http://www.countyhealthrankings.org/explore-health-rankings/what-and-why-we-rank/health-factors/social-and-economic-factors/community</u>
- 8. Levi, J., Harris, C.M., & Martin, A. (2015, June). *The facts hurt: A state-by-state injury prevention policy report*. Trust for Americans Health and Robert Wood Johnson Foundation. Retrieved from <a href="http://www.healthyamericans.org/assets/files/TFAH-2015-InjuryRpt-final6.18.pdf">http://www.healthyamericans.org/assets/files/TFAH-2015-InjuryRpt-final6.18.pdf</a>"
- Kret, J., Samala, R., & Johnson-Clarke, F.M. (2015, May). *Injury mortality in the District of Columbia, 2009–2013.* DC Department of Health. Retrieved from <a href="https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/Injury%20Deaths%202009-13">https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/Injury%20Deaths%202009-13</a> %20v9.pdf
- Substance Abuse and Mental Health Services Administration (SAMHSA). (2017). Behavioral health barometer: District of Columbia, volume 4: Indicators as measured through the 2015 National Survey on Drug Use and Health, the National Survey of Substance Abuse Treatment Services, and the Uniform Reporting System. HHS Publication No. SMA–17–Baro–16–States–DC. Rockville, MD: Substance Abuse and Mental Health Services Administration. <u>https://www.samhsa.gov/data/sites/default/files/DistrictOfColumbia\_BHBarometer\_Volume\_4.pdf</u>
- 11. CDC, Division of Unintentional Injury Prevention. (2017, February). *Important facts about falls.* CDC: National Center for Injury Prevention and Control. Retrieved from <u>https://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html</u>

- Putzer, E. (2016). DC healthy people 2020 framework. Center for Policy, Planning and Evaluation; District of Columbia Department of Health: Washington, D.C. Retrieved from <u>https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/FINAL%20DC%20H</u> <u>P2020%20Framework%20Report%205-23-16.pdf</u>
- CDC. (2015). Ten leading causes of injury deaths by age group highlighting unintentional injury deaths, United States—2015. National Center for Health Statistics; National Vital Statistics System. Retrieved from https://www.cdc.gov/injury/images/lccharts/leading\_causes\_of\_injury\_deaths\_unintentional\_injury\_2015\_1050w760h.gif
- National Highway and Traffic Safety Administration (NHTSA). (2015). Traffic safety facts 2015: A compilation of motor vehicle crash data from the fatality analysis reporting system and the general estimates system. Report No. DOT HS 812 384. Washington, DC. Retrieved from https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812384
- 15. National Safety Council. (2017). *Motor vehicle fatality estimates*. Itasca, IL. Retrieved from <u>http://www.nsc.org/NewsDocuments/2017/12-month-estimates.pdf</u>
- National Center for Statistics and Analysis (NCSA). (2017). *Traffic safety facts 2015: Pedestrians*. Report No. DOT HS 812 375. Washington D.C.: National Highway Traffic Safety Administration Retrieved from https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812375
- Arhin, S. (2016). Traffic safety statistics report for the District of Columbia (2013–2015). Report No. DDOT-PPSA-PM-002. District Department of Transportation (DDoT): Washington, D.C. Retrieved from <u>https://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/2013-2015%20Annual%20DC%20Crash%20Analysis%20Report.pdf</u>
- World Health Organization. (2002). World report on violence and health: summary. Retrieved from <u>http://www.who.int/violence\_injury\_prevention/violence/world\_report/en/summary\_en.pdf</u>
- Safer, Stronger DC Advisory Committee. (2016). *Final report.* Government of the District of Columbia: Department of Health: Washington, DC. Retrieved from<u>https://doh.dc.gov/sites/default/files/dc/sites/doh/page\_content/attachments/SSDC%20A</u> <u>dvisory%20Committee%20Final%20Report%20May%202016%20v%206%2021%2016\_new.docx.</u> <u>pdf</u>
- Curtis, F., Simon, T., Haegerich, T., Luo, F. & Zhou, C.. (2015). Estimated lifetime medical and work-loss costs of fatal injuries—United States, 2013. Morbidity and Mortality Weekly Report: Version 64(38); 1074-1077. CDC: Atlanta, GA. <u>https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6438a4.htm</u>
- CDC. (2017c, February). Leading cause of death (LCOD) by age group, black males—United States, 2014. Office of Minority Health and Health Equity (OMHHE): Atlanta, GA. Retrieved August 03, 2017, from <u>https://www.cdc.gov/healthequity/lcod/men/2014/hispanic/index.htm</u>

- 22. CDC. (2017d, February). *Leading cause of death (LCOD) by age group, hispanic males—United States, 2014.* Office of Minority Health and Health Equity (OMHHE): Atlanta, GA. Retrieved August 03, 2017, from https://www.cdc.gov/healthequity/lcod/men/2014/black/index.htm
- 23. CDC. (2017b, February). *Suicide: Consequences.* National Center for Injury Prevention and Control; Division of Violence Prevention: Atlanta, GA. Retrieved August 03, 2017, from <a href="https://www.cdc.gov/violenceprevention/suicide/consequences.html">https://www.cdc.gov/violenceprevention/suicide/consequences.html</a>
- 24. Wilkins, N., Tsao, B., Hertz, M., Davis, R., & Klevens, J. (2014). *Connecting the dots: An overview of the links among multiple forms of violence*. Atlanta, GA: National Center for Injury Prevention and Control, CDC, Oakland, CA: Prevention Institute. Retrieved from <a href="https://www.cdc.gov/violenceprevention/pdf/connecting\_the\_dots-a.pdf">https://www.cdc.gov/violenceprevention/pdf/connecting\_the\_dots-a.pdf</a>
- Listenbee, R.L., Torre, J., Boyle, G., Cooper, S.W., Deer, S., Durfee, T.D.,...& Taguba, A. (2012). *Report of the Attorney General's National Task Force on Children Exposed to Violence.* Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, U.S. Department of Justice. Reference <u>https://www.justice.gov/defendingchildhood/cev-rpt-full.pdf</u>
- 26. Sackett, C. (2016). Neighborhoods and Violent Crime. Office of Policy Development and Research: US Department of Housing and Urban Development. Retrieved from <u>https://www.huduser.gov/portal/periodicals/em/summer16/highlight2.html</u>
- 27. International Centre for the Prevention of Crime. (2014). 4<sup>th</sup> international report: Crime prevention and community safety: Trends and perspectives. Retrieved <u>http://www.crime-prevention-intl.org/uploads/media/ICPC\_report\_4.pdf</u>
- 28. Metro Police Department. (2017, April). *District crime data at a glance*. Retrieved on August 15, 2017 from <u>https://mpdc.dc.gov/page/district-crime-data-glance</u>
- 29. Bureau of Justice Statistics, (2017, October). *Race and hispanic origin of victims and offenders,* 2012–15. Office of Justice Programs: US Department of Justice. Retrieved from https://www.bjs.gov/content/pub/pdf/rhovo1215\_sum.pdf
- 30. United Nations Office on Drugs and Crime. (2006). United Nations standards and norms in crime prevention. United Nations. Retrieved from <a href="https://www.unodc.org/pdf/criminal\_justice/Compendium\_UN\_Standards\_and\_Norms\_CP\_and\_CJ\_English.pdf">https://www.unodc.org/pdf/criminal\_justice/Compendium\_UN\_Standards\_and\_Norms\_CP\_and\_CJ\_English.pdf</a>
- National Academies of Sciences, Engineering, and Medicine. (2017). *Proactive policing: Effects on crime and communities*. Washington, DC: The National Academies Press. <u>https://doi.org/10.17226/24928</u>. Retrieved from <u>https://www.nap.edu/read/24928/chapter/2</u>
- Forsyth et al. (2015). Perceived and police reported neighborhood crime: Linkages to adolescent activity behaviors and weight status. Retrieved from <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4514913/</u>
- 33. National Institute of Justice. (n.d.). Crime and Crime Prevention. Office of Justice Programs: Department of Justice. Retrieved from <u>https://www.crimesolutions.gov/TopicDetails.aspx?ID=10</u>


# **Part 4: Conclusion**

The **social determinants of health** presented earlier work not just individually, but also in multiple and combined ways, influencing both health behaviors and population health outcomes. They are considered together in this concluding section of the report as the **Key Drivers of Opportunities for Health** in the District of Columbia.

## **Chapter 16: Conclusion**

"Washingtonians across the city want very similar things. We all want safe neighborhoods for our families, with schools and child care centers that will set our children and teens up for success. We want housing that is safe and affordable, and we want jobs that allow us to take care of ourselves and our families, with wages that allow us to enjoy life and to give back. From Ward 1 to Ward 8, we share these hopes and dreams."

> -Mayor Muriel Bowser, March 2018 2018 State of the District Address<sup>1</sup>

## **Opportunities for Health in the District**

Achieving health equity starts with an appreciation of how health is created, but it cannot stop there. Informed by this knowledge, health equity practice must be operationalized. This requires proactive development and implementation of policy, program, and practice changes, essential to driving and achieving transformational outcomes across the city as a whole. The goal of this report, therefore, is not simply to provide baseline data on population health outcomes, including disparate outcomes for sub-populations. More important, it seeks to unpack, clarify, and underscore important linkages between community health outcomes—i.e. the health of a population in a given community or *place*—and the prevailing social, economic, and structural factors that underlie and create the context for health. Connecting these dots is essential to our collective understanding. It paints a clearer picture as to why—despite decades of effort by the public health and the healthcare sectors, both individually and together—health, health care, and other kinds of inequities not only persist, but also are continuously reproduced.

This report leverages the public health and epidemiological knowledge base, starting with a holistic definition of **health** as "a state of complete physical mental and social well-being and not merely the absence of disease and infirmity" (WHO).<sup>2</sup> The data presented demonstrate that health is more than health care, and is created primarily outside of clinical medicine and the medical care system—which only account for 20% of population health outcomes. We know from the breadth of the evidence base that the social, economic, and physical environments—that is, where we live, learn, work, play, and age —are the bigger drivers, accounting for 50% to 80% of population health outcomes.

None of these social and structural determinants of health is a stand-alone factor. Rather, all are interwoven and interrelated in very complex ways. One may be tempted to read this complexity as daunting, and come away discouraged about the prospects for systemic change. It is greatly hoped, though, that this report contributes to and inspires change, providing one piece of the plan for the multi-sectoral solutions needed to achieve the real and substantive

change that for so long has been elusive. The data and visualizations presented underscore the interconnectedness of drivers. It will take all of us working together to achieve the equity-inspired shared vision so eloquently expressed by Mayor Bowser, on behalf of all Washingtonians.



## **Opportunities for Health In DC: Interrelated Pathways**

Figure 16.1: Opportunities for Health-Interrelated Pathways

## **Opportunities for Health: Community Health Drivers**

Community health has been explored within this report through the lens of nine key drivers, with a chapter providing an in-depth review of baseline data and maps for each. Disaggregating and mapping the data to the 51-statistical neighborhood level showed a patterning of outcomes to a more granular scale. For each of the nine drivers, the data present a clear picture of significant differences across the 51-statistical neighborhoods, which align with disparities in health outcomes, including life expectancy. Differences in life expectancy span a total of 21 years between Woodley Park, which ranked highest (89.4 years), versus St. Elizabeths, with the shortest (68.4 years) life expectancy at birth. These correlations and variations underscore interrelated pathways as well as differential opportunities for health across the District.

Illustrative of differential opportunities for health in the District, is the Selected Indicator Summary, provided in **Table 16.1.** It shows a sample of selected indicator data, including one

for each of eight key drivers. Note that the outdoor environment is omitted, because a comparable metric is not available to the statistical neighborhood level. The table is organized by 45 statistical neighborhoods *(six omitted, per Figure 5.13, have life expectancy data suppressed),* and ranked by life expectancy at birth. Also included for reference, is the percentage of residents living in poverty. Color coding highlights indicators that scored in the top 10 in green, and in the bottom 10 in red. At a glance, it is clear that green dominates the upper region of the table, where the key drivers of opportunities for health are highest and clustered and life expectancy is highest. Similarly, red is clustered at the bottom, where the key drivers of opportunities for health are the strength of cumulative impacts of opportunities for health along a continuum—both positive and negative.

Alajes ,	Residents Living in Poverty (2011-2015) (%)	6.6%	15.8%	9.3%	4.5%	9.2%	10.3%	1.7%	5.7%	7.2%	11.0%	8.5%	12.0%	12.3%	8.9%	10.9%	12.7%	16.7%
Continuities	Age- adjusted Violent Deaths Rate - per 100,000 population (2011-2015)	9.9	5.1	7.4	1.1	13.0	5.7	2.6	10.5	8.4	5.4	2.1	9.6	3.2	29.2	16.9	10.1	17.8
Ith in D	Population with Public Insurance Coverage (%)	16.4%	15.8%	17.4%	18.5%	17.9%	13.2%	16.0%	13.7%	15.2%	35.9%	18.7%	20.0%	37.9%	46.1%	18.5%	40.8%	38.8%
for Hea	Household Receiving Public Assistance Income or SNAP ( <i>past</i> 12 months) (%)	2.5%	0.8%	0.6%	2.1%	1.3%	1.0%	%0.0	1.6%	3.6%	7.8%	5.5%	10.9%	17.4%	11.7%	5.4%	11.3%	18.1%
'tunities mary* <sup>riansoorb</sup>	Household Without a Car/Transit Dependent (%)	26.1%	22.8%	9.3%	19.3%	33.7%	39.5%	Data Supp.	28.1%	45.9%	Data Supp.	Data Supp.	42.8%	19.6%	22.6%	51.4%	20.2%	48.2%
al Oppol ator Sum <sup>400564</sup>	Household Gross Rent 35% or more of Income (2011-2015) (%)	25.8%	44.5%	Data Supp.	%0 <sup>.</sup> 6£	33.7%	33.9%	Data Supp.	19.0%	27.0%	Data Supp.	Data Supp.	32.6%	44.5%	Data Supp.	29.4%	40.7%	35.8%
ferentia cted Indic at	Median Household Income (2011-2015) (%)	\$139,744	\$90,124	\$161,252	\$136,641	\$113,269	\$132,021	\$200,031	\$121,668	\$96,194	\$102,053	\$115,697	\$94,614	\$57,943	\$67,745	\$94,043	\$66,395	\$70,554
le 1: Dif Sele	Residents (16 years or older) Unemp- loyed (2011-2015) (%)	2.5%	3.9%	5.9%	2.4%	3.5%	3.1%	2.8%	3.2%	5.0%	11.7%	3.9%	7.2%	16.2%	15.2%	3.5%	8.7%	6.7%
d) Tabl	Residents (25 years or older) with high school diploma or higher (2011-2015) (%)	97.8%	%8'96	%6`26	%2.86	99.1%	%6`86	%6`86	98.1%	%6'96	83.2%	%1'76	88.9%	%8'58	89.2%	%2`06	84.3%	79.4%
<i>xpectancy at Birt</i> <i>thoods with</i> <i>= suppressed dat</i> <b>ected Indicator</b> : core in Bottom 10	Life Expectancy at Birth (2011-2015)	89.4 years	88.8 years	88.4 years	87.3 years	87.2 years	86.9 years	86.5 years	86.2 years	85.1 years	83.4 years	83.3 years	81.9 years	81.6 years	81.0 years	81.0 years	80.6 years	79.8 years
Notes: * Ranked by Life E: for 45 Statistical Neighbo available data (6 omitted Opportunity Measure Sel Score in Top 10	Statistical Neighborhoods *Ranked by Life Expectancy at Birth	<ol> <li>Woodley Park</li> </ol>	2. Cathedral Heights	3. Kent /Palisades	4. Tenleytown	5. Forest Hills	6. Georgetown East	7. Barnaby Woods	8. Capitol Hill	9. Adams Morgan	10. Shepherd Park	11. Chevy Chase	12. U Street/Pleasant	13. Michigan Park	14. Lamond Riggs	15. Logan Circle/Shaw	16. Brightwood	17. Columbia Heights

Table 16.1: Differential Opportunities for Health – Sample Indicator Summary (1 of 2)

82.8% 8.0% \$75,848 40.7%	48 40.7%		29.4%	14.9%	35.9%	14.8	12.9%
92.7% 13.8% 58.5947 83.8% 19.7% \$41.171	4/ 71	Data supp. 43.4%	<i>иата Supp.</i> 45.9%	9.6% 29.8%	30.3% 47.0%	23.5	72.01 29.19
89.8% 8.2% \$82,241	41	35.6%	47.8%	14.2%	31.2%	11.9	13.5%
89.4% 5.3% \$71,837	37	34.7%	47.5%	10.6%	23.5%	7.8	11.5%
86.3% 11.9% \$77,020	20	43.9%	24.3%	17.7%	36.4%	21.8	13.2%
93.5% 6.7% \$76,429	29	31.4%	38.3%	11.2%	29.0%	27.1	13.5%
94.5% 5.3% <b>\$110,907</b>	07	31.5%	28.3%	5.4%	14.6%	11.7	10.4%
88.8% 5.3% \$82,789	89	32.6%	52.9%	13.0%	33.1%	18.7	18.3%
91.7% 8.8% \$92,617	17	32.2%	26.4%	15.0%	31.8%	14.9	13.6%
91.7% 8.3% \$91,073	73	35.4%	25.1%	13.7%	28.3%	24.5	12.2%
86.7% 10.3% \$61,476 1	76 1	Data Supp.	31.2%	13.6%	41.5%	15.0	16.3%
86.9% 14.8% \$61,739	39	37.5%	28.3%	25.4%	48.5%	38.3	18.7%
81.3% 13.6% \$51,454	54	41.6%	22.5%	22.3%	52.4%	23.8	19.0%
90.9% 8.6% \$87,146	46	35.7%	26.6%	12.9%	24.3%	21.2	12.3%
81.6% 23.8% \$35,545	45	57.9%	49.2%	36.7%	64.6%	48.1	30.6%
87.8% 16.3% \$47,486	86	52.4%	33.1%	30.3%	55.7%	57.1	20.9%
82.9% 30.0% \$32,562	62	52.1%	54.4%	43.4%	67.7%	33.1	39.6%
79.4% 21.3% \$31,333	33	57.4%	45.6%	37.5%	66.0%	40.6	34.1%
80.7% 20.6% \$36,577	77	48.8%	41.6%	32.7%	63.5%	58.5	26.2%
84.1% 16.6% \$37,771	71	44.4%	38.7%	32.7%	57.8%	31.5	34.5%
84.4% 19.6% \$43,043	43	39.9%	40.9%	39.4%	58.7%	46.8	29.2%
Data Supp. Data \$28,468 Supp.	68	Data Supp.	44.7%	Data Supp.	Data Supp.	36.3	38.7%
81.7% 22.6% \$31,319	19	50.4%	49.8%	53.9%	67.4%	48.6	36.7%
82.4% 26.8% \$28,711	11	55.2%	47.2%	41.3%	62.3%	50.0	39.4%
79.9% 18.0% \$36,655	55	48.4%	46.7%	31.0%	50.9%	47.6	28.5%
83.2% 14.9% \$28,790	90	59.6%	48.0%	43.7%	61.7%	52.4	37.3%
Data Supp. 18.1% \$25,311	11	43.8%	51.3%	Data Supp.	70.1%	65.4	40.2%
89.3% 9.6% \$70,848	48	39.8%	36.4%	15.6%	35.1%	19.5	18.0%
86.7% 8.3% \$53,889	68	42.7%	9.0%	13.9%	32.1%	na.	15.5%

Table 16.1: Differential Opportunities for Health – Sample Indicator Summary (2 of 2)

## Opportunities for Health: Limited by Structural and Cumulative Disadvantage

#### **OPPORTUNITY DEFINED**

**Opportunity** is a popular word in public narrative. It ranks within the top 10%, according to Merriam-Webster<sup>3</sup> online dictionary, where it is defined in its simplest form for students<sup>4</sup> and English language learners.<sup>5</sup> Both definitions found there reference positive connotations, including the specification of "a favorable combination of circumstances, time, and place"; and "a chance to better oneself." For English language learners, the concept of opportunity includes references to cultural and philosophical meaning, as in *"the land of opportunity,"* with the assumption that it is "a place where there are many opportunities; where people have many chances to succeed, achieve things, etc."

In framing their study on opportunity, US News (2017)<sup>6</sup> referenced the American concept of opportunity, noting that: "In the land of opportunity... upward mobility is a birthright as basic as freedom." The article stated further, however, that "economic and historic impediments sometimes stand in the way of progress." This echoes the evidence base, including the work of Smedley et al (2002); <sup>7</sup> Williams et al (2005); <sup>8</sup> LaVeist et al (2011); <sup>9</sup> Jones et al (2015), <sup>10</sup> and others, referenced in the framing of this report (Part 1); and in particular the key insight that structural racism acts as a force in the distribution of opportunities for health. In unpacking the impediments, US News was explicit in underscoring historical and contemporary structural barriers to opportunity in general, which are equally relevant in this context to the question of "opportunities for health." The public narrative referenced by US News noted the importance of questions regarding racial disparity in a nation whose economy was founded on slavery and did not recognize voting rights of African Americans until the 1960s; as well as gender disparity in a nation that did not accord women the right to vote until 1920. Instructive is their conclusion regarding not only the contemporary persistence of these root causes, but also toward the interconnectedness of the social determinants of opportunity: "These [economic and historic impediments] play out in educational terms, in the ability to attain the schooling that can elevate one's social standing. And they play out in economic terms, in the ability to achieve equal pay for equal work with peers, or to afford an adequate home for a growing family."11

#### 1. RACIAL AND ECONOMIC SEGREGATION

Recognition of the economic burden of racial/ethnic health inequalities in the United States is not new. LaVeist et al (2011)<sup>9</sup> demonstrated that direct medical expenditures cost the country about \$230 billion, over the time period 2003 through 2006. In addition, indirect medical costs (including eliminating racial and ethnic health disparities and productivity loss associated with health inequities for racial and ethnic minorities, respectively), together with the losses related to premature death, cost the nation more than \$1 trillion (2003–2006). This underscores the importance of addressing health inequities: Not only are they inconsistent with the values of

society and therefore the right thing to do, but social justice can be cost-effective. In making the Business Case for Racial Equity (2013)<sup>11</sup> a group of preeminent multi-disciplinary health equity researchers referenced the ever-expanding body of knowledge that demonstrates how racism in the United States has left a legacy of inequities across the full spectrum of social determinants, including education, employment, income, wealth, and housing, as well as health. While noting that significant progress has been made in eliminating legal discrimination and its overt expression, disparities by race and ethnicity remain embedded in societal institutions that connect these structural barriers in contemporary context and "place." Connecting these dots are critical, lest the persistently inequitable outcomes be mistaken as either natural or inevitable; the result of the "invisible hand" of the market acting on a level opportunity playing field. Specifically, Turner et al (2013) note that: "Opportunities that were denied racial and ethnic minorities at critical points in the nation's history have led to the disadvantaged circumstances that too many children of color are born into today."<sup>11</sup>

This speaks not only to the relevance of race and ethnicity to the equity conversation, but more specifically to the importance of paying attention to the intersections among the nine key drivers of opportunities for health across the District of Columbia. In **Chapter 4** of the report, **Figure 4.6** shows race and ethnicity by statistical neighborhood group, with each of the four maps showing the percentage of White, Black, Hispanic and Asian population distributions across the District. The DC 5-Year (2011–2015) Racial Dissimilarity Index (RDI) score (White/Black Score =70.9), shows that the District has become less segregated overall since 2000. Theoretically, however, over 70% of Whites would have to move to achieve complete Black/White integration; and a smaller percentage (60%) of Whites would have to move for complete White/Non-White integration with people of color, regardless of race or ethnicity. As a result, the racial and ethnic composition of each of the 51-statistical neighborhoods also varies significantly. This is the backdrop to the outcomes explored through the lens of the nine key drivers of community health provided in this report.

Evidence of concentrated poverty at the statistical neighborhood level is also an important contextual indicator. Poverty is highly concentrated in 19 statistical neighborhoods where rates are above the District average. In seven statistical neighborhoods, the percentage of residents in poverty are more than twice the District average, with the highest rates at close to or above 40% in four statistical neighborhoods. All of these neighborhoods are in the south and east of the city.

Data and mapping of resident demographics across multiple indicators show residential patterning by race and ethnicity, as well as by socioeconomic status. The geographic intersection of race/ethnicity and concentrated poverty underscore segregated patterning. Racial segregation and economic segregation at the neighborhood level are important realities for many District residents, wherein place matters and context counts in opportunities—or lack

thereof—for health. In sum, opportunities for health are limited by root causes and cumulative disadvantage, which result not only in increased illness and disability, but also in shortened lives.

#### 2. WHERE YOU LIVE AND HOW LONG YOU LIVE

Data presented throughout the body of this report show that while the overall health of District residents has improved during the last decade, health disparities and inequities— as measured by almost any indicator—are evident especially by race, income, and geography across the District of Columbia. Infant mortality, which is the death of a baby before his or her first birthday, is an important indicator of the health and well-being of a population. Infant mortality in the District has declined, with the rate per 1,000 live births falling overall from 13.6, in 2005, to 7.1, in 2016. While the long-term trends in infant mortality are positive overall, persistent differences remain, with mortality rates three times higher for babies born to Black mothers than to their White counterparts.

Differential health outcomes also persist across the life course, as evidenced by self-reported fair or poor health by race and gender. While only 3.9% of White adult residents fall into this category, nearly one in five Black adults (19.5%) report fair or poor health—over twice that of all other races, at 9.1% (DC BRFSS 2015).<sup>12</sup>

Differential life expectancy at birth across the 51-statistical neighborhoods show a 21-year gap between the longest (89.4 years) and shortest (68.4 years) number of life years. Life expectancy was overlaid with outcome measures across the full range of nine social determinants, from education to community safety. Visualizing the correlation between the socio-demographic levels of neighborhoods with life expectancy underscores the similarity of outcomes distributions, as well as large gaps, across all of the determinants. Life expectancy data also visibly aligns with income levels, poverty concentrations, and racial segregation. This is consistent with the finding that racial segregation explains 70% of observed differences in life expectancy. Racial segregation together with economic segregation explains 76% of the observed differences.<sup>13</sup>

While poverty *per se* has not been specifically examined as one of the key drivers, its importance was referenced in **Chapter 4** on resident demographics as a useful context measure. The nine key drivers have been explored individually in this report as an important means of unpacking underlying root causes. These key drivers have interconnected pathways, however, with notable correlations and intersections. As a consequence, the lived reality for District residents, and the neighborhoods in which they live, is one where collectively, the drivers work together in multiple ways with compounding effect, including economic segregation and concentrated poverty.

Opportunities for health in the District of Columbia are limited by structural and cumulative disadvantage. The visualization of population in poverty to the 51-statistical neighborhood level, overlaid in this final chapter with the life expectancy levels (Figure 16.2), is illustrative of the close correlation of socio-demographic status and length of life in the District. It also shows the correlation between where you live (place) and how long you live (life expectancy). Where individuals and families live, however, is not a simple reflection of their individual choice or preference. It is a complex outcome of social, economic, and market forces, which includes less visible but real and persistent structural ramifications such as historic and contemporary racial, economic, and residential segregation. Because poverty is a common effect of cumulative disadvantage with multiple inequities acting on the same people and communities at the same time, it serves in effect as a useful proxy indicator or summary measure of differential opportunities for health.

## **OPPORTUNITIES FOR HEALTH IN DC by Neighborhood Group** Figure 16.2: Population in Poverty and Life Expectancy

## PERCENTAGE OF TOTAL POPULATION IN POVERTY

42.3% St. Elizabeth's	
40.2% Congress Hgts/Shipley	
39.9% Bellevue	
39.2% Washington Highlands	
37.4% Historic Anacostia	
36.7% Douglass	
36.2% Naylor/Hillcrest	
34.3% Eastland Gardens	
30.7% Edgewood	
30.7% Fort Dupont	
30.2% Trinidad	
29.5% Marshall Hgts	
26.6% Lincoln Hgts	
24.1% GWU/National Mall	
23.7% Georgetown	
21.0% Twining	
19.5% Fort Lincoln/Gateway	
19.0% Chinatown	•
18.9% Brentwood D.C. (18.0%)	
16.7% Columbia Hgts	
16.3% Brightwood Park	
15.8% Cathedral Hgts	
15.6% U Street/Pleasant U.S. (15.5%)	
14.7% Michigan Park	
14.0% South Columbia Hgt	
13.8% SW/Waterfront	
13.7% Hill East	
13.3% Petworth	
13.0% 16th St Heights	
12.7% Brightwood	
12.3% Bloomingdale	
12.2% Kingman Park	
11.7% Mt. Pleasant	
11.5% Shepherd Park	
11.3% Kent/Palisades	
10.9% Logan Cir/Shaw	
10.7% Woodbridge Life Expectancy	
10.6% Union Station • 68.4 - 70.8	
10.5% Georgetown East 0 70.9 - 74.5	
9.3% Forest Hills	•
8.9% Lamond Riggs	
8.5% Chevy Chase 77.0 - 79.8	N
79.9 - 81.9	
6./% Woodley Park 82.0 - 85.1	A
	0 0.5 1 2 3 4
	Miles
1 7% Barnaby Woods	DATA SOURCE: 2011-2015 ACS ESTIMATES;
1.170 Barnaby Woous	2011-2015 LIFE EXPECTANCY (CPPE)

### Conclusion: Leveraging the Key Drivers to Promote Opportunities for Health

Opportunities for health are created primarily outside of the health care and public health systems. This report shows that opportunities for health in the District are limited by structural and cumulative disadvantage. These differential opportunities are the result of a much broader spectrum of societal structural and institutional norms, laws, policies, and practices, showing essentially, that all policy is health policy. None, however, is permanent, nor set in stone. With political will, all are amenable to change.

Because of their individual impact, but especially given their interconnectedness, the nine key driers provide the main framework that collectively drive how health is created outside of traditional health care and public health. Together, they provide a more explicit view of the importance of social and structural determinants, which together, intentionally or otherwise, produce persistently inequitable health outcomes. Overall, as a result of the interplay of multiple socio-demographic contextual factors, including the District's historic and contemporary segregated residential geography, years of life expectancy vary across the District's 51-statistical neighborhoods by 21 years. As shown, this patterning is repeated again and again across all the social determinants of health, underscoring differential opportunities for health by income and place, as well as race, as a fundamental root cause of inequities.

Equitable community health improvements will not be achieved by the health care system or public health working in a vacuum. Because 80% of community health outcomes are created outside of the traditional health care system, a multifaceted Health-In-All-Policies approach (APHA 2013, CDC n.d.) is essential to improving the health of all District residents, including achieving health equity. The data and visualizations presented show the interconnectedness of things. They demonstrate the limitations of working in silos. This underscores the importance of working within and across all sectors, in simultaneous and complementary ways, to improve opportunities for health and achieve health equity. This is consistent with the DC Healthy People 2020 Framework (2016)<sup>14</sup> Social Determinants of Health evidence-based strategy (SDH-I), which recommends that we "increase multi-sector public, private, and non-profit partnerships to further population health improvement through a coordinated focus on the social determinants of health and health equity."

Finally, it should be noted that this report is but a starting point, a conversation starter. It must lead to collaborative action for change. The compelling advantage of promoting health equity by tackling underlying socioeconomic inequities across the key drivers of opportunities for health is that the benefits of building a healthy community extend well beyond health. As an example, one model describes a **healthy community<sup>15</sup>** as follows:

"A healthy community is one that strives to meet the basic needs of all residents; it is guided by health equity principles in decision making; it empowers organizations and individuals through collaboration, civic and cultural engagement for the creation of safe and sustainable environments. Vibrant, livable and inclusive communities provide ample choices and opportunities to thrive economically, environmentally and culturally, but must begin with health."

## **Leveraging the Key Drivers Towards Equitable Opportunities** Figure 16.3: Collaborative Actions For Change/Multi-Sector Opportunity Levers



### Looking Ahead: Collaborative Actions for Change

Mayor Bowser's equity-inspired vision referenced at the beginning of this concluding chapter is outcome-oriented. It speaks to the necessity of building a healthy community that promotes quality of life across all wards as a shared goal that all residents of the District buy into.

Promoting health equity means tackling the underlying socioeconomic inequities across all the key drivers of opportunities for health, knowing that building a healthy community has benefits that extend well beyond health alone. Creating equitable opportunities for health in the District of Columbia requires multiple sectors working collaboratively, each doing their part in promoting improved outcomes. This recognizes that while the traditional health care system is an important partner in delivery of preventative services, and essential to responding with high-quality clinical care when illness and infirmity occur, medical care alone plays a far smaller role than has traditionally been understood in creating health itself for individuals and communities.

Equity-informed collaborative actions for change must be cognizant of how historical and contemporary policies, programs, and practices, including laws, produce inequities in health outcomes. Proactive multi-sector solutions are essential to meaningful transformational change. A conceptual framework for leveraging the key drivers towards equitable opportunities for health is presented in **Figure 16.3**.

#### **We must break out of silos, deploying the following collaborative actions for change\*:** \*These actions are based on a subset selected from Prevention Institute (2016)<sup>16</sup>

- Recognize that eliminating inequities provides a huge opportunity to invest in community. Inequity is not acceptable, and everyone stands to gain by eliminating inequity.
- Develop a multifaceted Health-in-All-Policies approach in order to improve the health of all District residents, including achieving health equity.
  - Work across multiple sectors of government and society to make necessary structural changes. Such work should be in partnership with the community in pursuit of a more equitable society.
  - Understand and account for the historical forces that have left a legacy of racism and segregation, as well as structural and institutional factors that perpetuate persistent inequities. The only way to truly discard this legacy is to craft a new one, built on a shared vision for equity.
  - Adopt an overall approach that recognizes the cumulative impact of multiple stressors, and focuses on changing community conditions and not blaming individuals or groups for their disadvantaged status.
  - Acknowledge the cumulative impact of stressful experiences and environments. For some families, poverty lasts a lifetime and even crosses generations, leaving family members with few opportunities to make healthful decisions. This includes

continued exposure to racism and discrimination that may in and of itself exert a great toll on physical and mental health.

Develop equity goals and measure and monitor the impact of social policy on health to ensure goals and improved outcomes are being accomplished. Monitor changes in health equity over time and place to help identify the impact of adverse policies and practices.

## References

- 1. Bowser, M. (2018). *Mayor Bowser's 2018 State of the District Address*. Retrieved from https://mayor.dc.gov/release/mayor-bowsers-2018-state-district-address
- 2. WHO. (n.d.) *What is the WHO definition of health?* Retrieved from <u>http://www.who.int/suggestions/faq/en/</u>
- 3. Merriam-Webster. (2018). Opportunity: definition of opportunity. Retrieved from <u>https://www.merriam-webster.com/dictionary/opportunity</u>
- 4. Merriam-Webster. (2018). Opportunity: definition of opportunity. Retrieved from http://www.wordcentral.com/cgi-bin/student?book=Studentandva=opportunity
- 5. Merriam-Webster. (2018). Opportunity: definition of opportunity. Retrieved from http://www.learnersdictionary.com/definition/opportunity
- 6. US News. (n.d.) Opportunity rankings: Exploring if states are granting citizens tools to succeed. Retrieved from <u>https://www.usnews.com/news/best-states/rankings/opportunity</u>
- Smedley et al. (2002). Unequal treatment: confronting racial and ethnic disparities in health care. Journal of the National Medical Association, 94(8), 666. Retrieved from <u>http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2003/Unequal-</u> <u>Treatment-Confronting-Racial-and-Ethnic-Disparities-in-Health-Care/PatientversionFINAL.pdf</u>
- Williams, D.R. & Jackson, P.B. (2005). Social sources of racial disparities in health. Health Affairs 24, no2, (2005):323-334. Retrieved from <u>file:///C:/Users/arnoa/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/HHP03</u> <u>N2K/Health%20Afairs%20-%20David%20Williams%20MarApr05.pdf</u>
- 9. LaVeist et al. (2011). *Estimating the economic burden of health inequalities in the United States.* Retrieved from <u>https://www.ncbi.nlm.nih.gov/pubmed/21563622</u>
- Jones, C.P., and Kumanyika, S. (2015). The impact of racism on health and well-being of the nation—racism and health: Naming and addressing racism—a primer. American Public Health Association. [Webinar.] <u>https://www.apha.org/events-and-meetings/webinars/racism-andhealth</u>
- 11. Turner et al. (2013). The business case for racial equity. Retrieved from <u>https://scholar.harvard.edu/files/davidrwilliams/files/the\_business\_case\_for\_racial\_equity\_10-</u> <u>23-13\_1\_0.pdf</u>
- 12. DC Health. (2018). District of Columbia Behavioral Risk Factor Surveillance System (BRFSS, 2015 Annual Health Report, 2015, <u>https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20BRFSS</u> <u>%202015%20Annual%20Report%20-%20Web%20Edition.pdf</u>
- 13. Putzer, E., Samala, R., Little, D., Johnson-Clarke, F. (2014). *The predictive power of place: effects of racial and economic segregation on differences in life expectancy at the neighborhood level-District of Columbia, 2009–2013.* Poster presentation at the CSTE Annual Conference,

Anchorage, AK. Retrieved from <u>http://www.cste.org/blogpost/1084057/260143/THE-</u> PREDICTIVE-POWER-OF-PLACE-EFFECTS-OF-RACIAL-AND-ECONOMIC-SEGREGATION-ON-DIFFERENCES-IN-LIFE-EXPECTANCY-ESTIMATES-AT-THE-NEIGHBORHOOD-LEVEL--District-of-Columbia-2009-2013

- 14. DC Health. (2016). DC Healthy People 2020 framework. Retrieved from <u>https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/FINAL%20DC%20H</u> <u>P2020%20Framework%20Report%205-23-16.pdf</u>
- 15. American Planning Association. (n.d.). Healthy communities defined: The social determinants of health. <u>https://www.planning.org/blog/blogpost/9124625/</u>
- 16. Prevention Institute. (2016). *Countering the production of health inequities.* Retrieved from <u>https://www.preventioninstitute.org/publications/countering-production-health-inequities-extended-summary</u>