NCVHS Measurement Framework for Community Health and Well-Being, V4

This document was developed by the NCVHS Population Health Subcommittee drawing from a wide range of evidence, including an environmental scan conducted by the Committee, and with input from the public through a year-long, iterative process. This version of the Framework incorporates feedback received during the NCVHS Population Health workshop held in September 2016. In its capacity as a Federal Advisory Committee, the Committee has turned over the Framework to a non-governmental organization (NGO) whose leadership volunteered to steward its ongoing development, maturation, pilot, implementation and ongoing refinement in collaboration with federal, state, local governmental and non-governmental organizations. For questions, please contact NCVHS at ncvhsmail@cdc.gov.

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The mission of the Department of Health and Human Services (HHS) is to enhance the health and well-being of Americans. In recent years, the National Committee on Vital and Health Statistics (NCVHS) has studied the community health improvement movement and identified a need for a more strategic federal role to support communities. The Committee's work will culminate in recommendations to HHS regarding potential approaches for improving availability of and access to sub-county data and for increasing the capacity of communities to use data as a key driver for health improvement efforts.

The purpose of this Framework is to:
- Strengthen multi-sectoral health and well-being improvement efforts at the local level**.**
- Help HHS, other federal agencies and private-sector partners identify and close gaps in the accessibility of data at a sub-county level.
- Offer communities a blueprint of the key issue areas -- domains and subdomains -- to stimulate and inform dialogue across sectors on barriers, opportunities, and approaches for improvement.
- Promote public-private collaboration that builds on the successes of numerous metrics efforts already in development and/or in use

This Framework is designed to:
- Offer communities a flexible tool designed to promote multi-sectoral engagement with the ability to choose indicators that are locally relevant and accessible.
- Focus on (upstream and downstream) determinants of health through the lenses of both equity and life-course perspectives.
- Provide each sector the opportunity to see how they are achieving outcomes critical to their performance *and* achieving collective impact on the health of their population and well-being of their community.
- Complement existing framework efforts by seeking opportunities to inform and be informed by other efforts with similar aims, and avoiding defining a single set of metrics/ to be used by all communities.

The intent for this Framework is to accommodate two complementary objectives:
1. A parsimonious multi-sectoral core set of indicators that will:
   - Guide federal and state policy and resource allocation, and
   - Allow communities to benchmark themselves against peers and identify best practices.
2. A flexible set of multi-sectoral indicators to strengthen health and well-being efforts at the local level, from which communities can choose to use.

Proposed Measurement Framework for Community Health and Well-Being, V4: Domains and Subdomains

This framework provides a parsimonious structure for thinking about how to measure community health and well-being across determinants from life course and equity perspectives. The framework includes the domains and subdomains. It does not include specific indicators or metrics. The same indicator may be included in multiple domains depending on a community's perspective.

Please refer to the Appendix for examples of indicator sets and metrics by subdomain to illustrate the vision for how this structure could be used.

Domain	*Subdomain*
Community Vitality	
	Social capital
	Governance
	Civic engagement
	Social inclusiveness
Demographics	
	Total population
	Demographics per HHS Data Standards (age, sex, race/ethnicity, primary language, disability)
	Other demographics
Economy	
	Income and wealth
	Employment
Education	
	Infrastructure & capacity
	Participation & achievement
Environment	
	Natural environment
	Built environment
	Neighborhood characteristics
Food and Agriculture	
	Food availability
	Nutrition
Health	
	Health care infrastructure
	Health behaviors
	Health conditions & diseases

	Health outcomes
Housing	
	Infrastructure & capacity
	Quality
	Use/affordability
Public Safety	
	Infrastructure
	Perceptions of public safety
	Crime
	Injuries
Transportation	
	Infrastructure & capacity
	Quality
	Use & affordability

Appendix 1.

Definitions of Terms Used

Community Health: The presence of conditions within a community that support the comfort, health, and happiness of its residents.

Sub-county: The smallest possible geographic unit that permits meaningful and effective planning and project development at that unique level. Depending on local characteristics and other factors, the meaningful unit may be the neighborhood, or a small town, or a group of contiguous communities or even counties.

Small area estimation: The use of statistical techniques to provide an estimate for a small sub-population (the "small area") where few or no persons have been directly surveyed. Estimation is accomplished by employing data collected outside of the small area, data collected on the same outcome, and related administrative data. All relevant data are then processed using a statistical model that, in turn, is used to make each small area estimate.

Domains: Broad categories or "spheres" of activities, conditions, and information that constitute or characterize human societies (e.g., nations, populations, and communities).

Sub-domains: More focused sub-categories within domains that include issues of concern for community health and well-being.

Indicators: Specific, narrowly defined activities and conditions whose state or level are measurable.

Metrics: Quantitative measures of specific, clearly defined activities, and conditions. The specification of a metric should include a quantitative definition, units for expressing the metric (e.g., number, percent, rate per 100,000 persons), population or other entity measured, and method of measurement or source of data.

Appendix 2

Side by Side comparison of Progression of Framework effort

Framework v1 November 2015	Framework v2 June 2016	Framework v3 September 2016	Framework v4 November 2016
Outcomes • Life expectancy • Well-being Health Behaviors • Obesity and relevant behaviors • Tobacco • Substance abuse (alcohol/drug) Clinical Care • Access to care • Quality of care Physical Environment • Air quality Social and Economic • Education • Poverty • Housing • Safety	Health • Health outcomes • Health conditions & diseases • Health behaviors • Health care & infrastructure Environment • Natural environment • Neighborhood characteristics Education • Educational participation & attainment • Educational infrastructure & capacity Economy • Income and wealth • Employment Public Safety • Crime • Infrastructure • Perceptions of public safety • Injuries Social Cohesion and Civic Vitality • Social cohesion • Civic engagement Housing • Infrastructure/capacity • Availability/affordability • Quality Transportation • Infrastructure • Use • Quality	Health • Health care & infrastructure • Health behaviors • Health conditions & diseases • Health outcomes Environment • Natural environment • Neighborhood characteristics Education • Infrastructure & capacity • Participation & achievement Economy • Income and wealth • Employment Food and Agriculture • Food availability • Nutrition Public Safety • Infrastructure • Perceptions of public safety • Crime • Injuries Community Vitality • Social capital • Governance • Civic engagement • Social inclusiveness Housing • Infrastructure & capacity • Quality • Use/affordability Transportation • Infrastructure & capacity	Community Vitality • Social capital • Governance • Civic engagement • Social inclusiveness Demographics • Total population • Recommended demographics • Other demographics Economy • Income and wealth • Employment Education • Infrastructure & capacity • Participation & achievement Environment • Natural environment • Built environment • Neighborhood characteristics Food and Agriculture • Food availability • Nutrition Health • Health care infrastructure • Health behaviors • Health conditions & diseases • Health outcomes Housing • Infrastructure & capacity • Quality • Use/affordability Public Safety • Infrastructure

Framework v1 November 2015	Framework v2 June 2016	Framework v3 September 2016	Framework v4 November 2016
	Demographics • Age • Sex • Race/ethnicity • Primary language • Disability	• Quality • Use Demographics • Total population • ACA demographics • Other demographics	• Perceptions of public safety • Crime • Injuries Transportation • Infrastructure & capacity • Quality • Use & affordability

Appendix 3
NCVHS Effort to Measure Community Health and Well-being: Chronology of Work, 2011-2016

As a Federal Advisory Committee, NCVHS has made it a priority in recent years to encourage a multidimensional view of health as well as focusing on the fact that local communities are the strategic locus for achieving population health and well-being.

Timeframe	NCVHS Project	Report or Product
2011	**Convened a workshop, "Using Data to Improve Health: The Community as a Learning System for Health"** Fourteen communities at the leading edge of using local data highlighted the power of data for impacting population health outcomes. Findings included the need for: • access to local data and analytic resources • local partnerships to target local priorities • trust & governance – people want to know in advance how data about them and their community will be used	Report: The Community as a Learning System for Health: Using Local Data to Improve Local Health (December 2011)
2014	**Convened a roundtable, "Supporting Community Data Engagement"** Community leaders, data connector organizations and data suppliers identified needs and gaps in local data access and use, and suggested areas in which HHS could better support local efforts. Discussion themes: • The drive within communities for health equity needs support through improved access to sub-county data to identify hotspots. • The emergence of intermediaries and resources, which have ability to lead coordination and alignment, and their potential role.	Report: Supporting Community Data Engagement —An NCVHS Roundtable (October, 2014) Letter to the Secretary: Recommendations on supporting community data engagement by increasing alignment and coordination, technical assistance, and data stewardship education (May, 2015).
2015	**Convened a workshop, "Advancing Community-Level Core Measurement"** Identified a measurement framework of a balanced and parsimonious set of domains by which communities could assess, measure and improve local health and well-being. Version 1 of the Measurement Framework, created by the Office of the Assistant Secretary for Health, was presented and deemed a good start but needing a better and more varied balance of domains.	Report: Advancing Community-Level Core Measurement: A Progress Report and Workshop Summary (February, 2016)
2016	**Environmental Scan** NCVHS sponsored an environmental scan of a large sample of health and non-health centric frameworks of well-being and community health. The primary purpose was to identify existing measurement frameworks, core domains, indicators, and indicator data sets in health and non-health sectors	Report: Environmental Scan of Existing Domains and Indicators to Inform Development of a New Measurement Framework for Assessing the Health and Vitality of Communities (June, 2016)

2016	**Measurement Framework version 2** Drawing from the environmental scan, NCHVS created the Measurement Framework version 2, which was vetted by federal, academic, non-profit, and community and state organizations over the summer of 2016. Version 3 was created as a result of the input and brought to the next workshop.	
2016	**Convened a workshop, "Using Sub-county Data to Promote Multi-sector Approaches for Community Health and Well-being: Identifying Gaps and Opportunities."** The purpose was to advance three areas: • Enhance public/private collaboration to increase the availability of sub-county data • Improve HHS data collection to focus on sub-county data • Better align federal small area data estimation and sub-county data generation initiatives	Summary document in progress
2016	**Measurement Framework version 4** Version 4 of the Measurement Framework created drawing on input from the 2016 workshop.	Current document

Appendix 4.

Sample of Framework filled out with a limited set of example indicators and metrics

In the table below, a limited number of example indicators and metrics have been added to the framework. This table includes both metrics that have been measured at the sub-county level by a community indicator project as well as metrics that would be useful but have yet to be made available at that geographic level. The examples are only included to show how this Framework could be used and are not intended to be comprehensive or represent highest priority for all communities.

Domain	*Subdomain*	*Example Indicators*	*Example metrics that are measurable at sub-county level*	*Example metrics that are currently unavailable at sub-county level*
Community Vitality	Social capital	Residents who trust their neighbors	-Boston/% of adults who trust their neighbors	
		Neighborhood connections (resiliency)	- Cleveland/Density of neighborhood acquaintanceships	
	Governance	Stakeholder engagement for developing regulations		-OECD/average score on stakeholder engagement in the development of primary laws and subordinate regulations
		Public trust in government		-% of adults who trusts the local government to make good decisions
		Open data		% of government dataset that are API available
	Civic engagement	Registered voters and percent who vote	- Baltimore/ % persons 18+ years age registered to vote/City Board of Elections 2012 - Baltimore/ % registered voters who voted in last general election/City Board of Elections 2012	
		Public meeting attendance		- SF/% of Population attending public meetings in past year/US Census CPS 2008-2010
	Social inclusiveness	Residential mobility	- SF/% persons 1 Year and older living in the same house as one year ago/ACS 2005-2009	
		Perceived racial inclusiveness		-Reactions to race/BRFSSS state data

Domain	Subdomain	Example Indicators	Example metrics that are measurable at sub-county level	Example metrics that are currently unavailable at sub-county level
Demographics	Total	Total Population		
	Distributions	Distribution by:		
		Age	% by age (0-9, 10-17, 18-24, 25-44, 45-64, 65+)	
		Sex	% female/male	
		Race/ethnicity	% non-Hispanic white/non-Hispanic black/other non-Hispanic/Hispanic/	
		Primary language	% Non-English speaking	
		Disability	% disabled based on 6 qx	
		Gender identity		% persons identified as transgender
Economy	Income and wealth	Persons living in poverty	- New Orleans/ % People living in poverty/ACS 2010-2014	
		Total community income		Tax base of community-individual & business combined
		Income inequality		Gini Index of household income inequality
		Net worth		Asset information is not collected in a way usable at the sub-county level
	Employment	Unemployment rate	- Baltimore/% persons 16-64 years of age formally employed or self-employed and earning a formal income/ACS 2009-2013	
		Job training and adult wait lists	- Columbus/% of unemployment/Ohio Dept. of Job and Family Services	- Boston/Wait list for Adult Basic Education & English as 2nd Language/MA Dept of Elementary and Secondary Education
		Job Accessibility	-Cleveland/# of jobs within average commute times by skill level and quality	
Education	Infrastructure & capacity	Funding for early education		- Boston/Funding for MA Dept of Early Education & Care 2012

Domain	Subdomain	Example Indicators	Example metrics that are measurable at sub-county level	Example metrics that are currently unavailable at sub-county level
		Child care	-Detroit/child care locations	
		Teachers per students in public schools	- Boston/Ratio of students to teachers in regular education programs in public schools/Boston Public Schools 2011-2012	
	Participation & achievement	Math attainment	-% 8th graders who are proficient in math/National Assessment of Education Progress (NAEP)	
		High school graduation rate	- Charlotte/% 12th graders successfully completing high school in 4 years/NC Dept. of Public Instruction	
Environment	Natural environment	Air and water quality	- Baltimore/Median daily water consumption in cubic meters/City Dept Public Works	- Boston/# of days with poor air quality/State Dept. Environmental Protection
			-Benton-Franklin/Turbidity Water Quality Index	% children tested with elevated blood lead levels
	Built environment	Walkability score	- Baltimore/Score (0-100) for walking distance to amenities in nine different categories/walkscore.com 2013	
		Impervious surfaces	- SF/% of ground covered with impervious surfaces/USGS 2006 National Land Cover Database	
		Traffic proximity & volume by average income & racial composition of community	-EJSCREEN/Count of vehicles (AADT, avg. annual daily traffic) at major roads within 500 meters, divided by distance in meters/DOT traffic data	
	Neighborhood characteristics	Amenities	-Detroit/child care locations	

Domain	Subdomain	Example Indicators	Example metrics that are measurable at sub-county level	Example metrics that are currently unavailable at sub-county level
		Broadband cost and speed		% of residents who have access to three or more wireline Internet service providers, and two or more providers that offer maximum download speeds of 50 megabits per second
Food and Agriculture	Food Availability	Food store availability	SF/Food Market score	
		Food deserts		County Food Environment Index/USDA
		Value of production	-Benton-Franklin/Total market value of crops	
		Food safety	-Alameda Co./ Restaurant inspection results	
	Nutrition	Adequate fresh food intake		% adults who eat 5 fruits and vegetables per day/state BRFSS
		Food insecurity		% of households in which food intake is reduced/normal eating patterns are disrupted because the household lacks money and other resources for food/CPS
Health	Health care infrastructure	Health insurance coverage		% of persons with health care coverage/community survey
		Preventable hospitalizations		# asthma and diabetes hospitalizations/ population/hospital records
		Hospital care	Amount of hospital charity care/Benton-Franklin Trends	
		Investment in prevention		% of public health funds allocated to prevention vs. treatment
		Public health capacity	PHAB accredited local health department	Average # days of waiting time for appointments at STD clinics

Domain	Subdomain	Example Indicators	Example metrics that are measurable at sub-county level	Example metrics that are currently unavailable at sub-county level
	Health behaviors	Substance abuse		% high school students who currently smoke cigarettes/state YRBS
		Physical activity	% of commuters who bike at least some of the time/ACS	% and # hours public school tracks available for community exercise
		Nutrition		% adults who eat 5 fruits and vegetables per day/state BRFSS
	Health conditions & diseases	Depression	-Benton-Franklin Co. WA/Rate suicides and suicide attempts by youth per 100,00	% high school students who have seriously contemplated suicide/state YRBS # of ED admissions for suicide attempts/population
		Obesity	% children who are obese/school records	Boston/% adults who are obese/State BRFSS
	Health outcomes	Life expectancy	- Baltimore/life expectancy at birth in years/City Health Dept. 2013	
		Self-reported health		% reporting fair or poor health/community survey
		Self-reported well-being	-100M Lifes/Common Measures for Adult Well-being	
		Functional status	Health Risk Assessment questions	
Housing	Infrastructure/capacity	Trends in public funding for housing		-SF/Proportion of housing production to housing need by income category/SF Bay Area Housing Needs Plan (2007-2014)
		Overcrowding	- Baltimore/median # persons living in household/Census 2010	
	Quality	Housing health & safety violation	- Baltimore/ % non-vacant residential properties that received at least one housing code violation/City Dept Housing 2013	

Domain	Subdomain	Example Indicators	Example metrics that are measurable at sub-county level	Example metrics that are currently unavailable at sub-county level
		Median age of house		- Charlotte/median age of housing in years/Census 2010 & ACS 2014
	Use/affordability	Affordable rental housing stock	- New Orleans/% Renter occupied paying 30% or more of income on housing/ACS 2010-2014	
		Median home price	- Denver/Median residential appraised valuation/County Assessor	
		Housing insecurity	% households paying >50% of their income on housing/ACS	
Public Safety	Infrastructure	Funding for police departments		- Boston/Data not available on website
	Perceptions of public safety	Resident public perception of safety	- SF/ Proportion of residents who feel safe walking alone in their neighborhood during the day and night/City Services Auditor-2011 City Survey	- Boston/Data on trusting neighbors not available on website
		Lethal force use by police		# of events of police officers using a firearm per 10,000 residents
	Crime	Violent crimes	- Cleveland/rate of violent crimes reported to police per 1000 residents/ City Police Dept.	
		Number of abused or neglected children		- Charlotte/Child abuse or neglect victims per 1000 children/UNC Institute for Families 2011
		Intimate partner violence	- Cleveland/Calls to 911 for domestic disputes /911 calls	
		Gun violence	-Benton-Franklin /Gun crimes per 10,000 residents	
	Injuries	Traffic Accidents	- Baltimore/ # 911 calls for accidents involving motor vehicles per 1,000 residents/ City Police Dept 2013	

Domain	Subdomain	Example Indicators	Example metrics that are measurable at sub-county level	Example metrics that are currently unavailable at sub-county level
		Cyclists in Traffic Accidents		- Charlotte/cyclists in traffic accidents per 100M vehicle miles traveled/UNC Highway Safety Research Center
Transportation	Infrastructure/ capacity	Transportation funding by mode		- Boston/Federal, state, and city transportation funding by type of infrastructure/MA Bay Transportation Authority 1991-2012
		Bike lanes and paths	- Baltimore/Linear miles of designated bike lanes within roadway system/Dept Transportation	
		Accessibility	-NNIP/Location of transit stops	
	Quality	Public transit score	- SF/ relative measure of the number of transit routes within one mile, weighted by frequency and distance/SF public transit operators & MTC Bay Area Transit Geodatabase 2008	
		Travel time to work	- New Orleans/% workers 16+ years of age by average travel time to work/ACS 2010-2014	
	Use/affordability	Traffic density	- SF/ average daily miles of vehicle travel per square kilometer/SF County Transportation Authority 2010	
		Commuters by commuting means	- New Orleans/% workers 16+ years of age by type of transportation/ACS 2010-2014	

Appendix 5

Potential Data Sources available for use in the Framework for Community Well-being including domains and example metrics

Federal
American Community Survey/Census
> Demographics (age, sex, race, Hispanic origin, birth state or country, English speaking ability, disability)
> Education (highest education level)
> Health (health insurance coverage, disability)
> Housing (household composition, building type, length of residence, ownership, rent, mortgage, value of building)
> Economics (Supplemental Nutrition Assistance Program (SNAP) recipient, rent, mortgage, weeks worked in past year, # hours worked per week, type of employer, type of work, sources & amount of income in past year)
> Social Cohesion and Civic Vitality (Internet access & type of service)
> Transportation (transportation to work, commute time)

County Business Patterns/Census
> Economics (# jobs, firms by type and size)
> Health behavior (grocery stores/population, liquor stores/population)
> Environment (built) (grocery stores/population, liquor stores/population)

AirData/EPA
> Environment (Location & amount of pollutants emitted, Amount of air pollutants at different monitoring locations)

Water discharge permits/EPA
> Environment (Location of wastewater discharge sources)

Toxics Release Inventory/EPA
> Environment (Amount of toxic chemical releases, type of chemical released)

Nonprofit organizations/National Center for Charitable Statistics of the Urban Institute or IRS
> Social Cohesion and Civic Vitality (# nonprofit organizations by type)

State
UI claimant file/State employment services agencies
> Economics (% change in total employment)

Vital records/State vital statistics agencies or local birth and death registrar
> Health (% pregnancies with adequate prenatal care, Teen births, death rates by specific causes, life expectancy, years of potential life lost before age 75)

Liquor licenses/State Liquor control agency
> Health (# and type of outlets)

State Health Planning Office
> Health (licensed hospital beds per 100,000 population and hospital bed occupancy rates)

Child care licenses/Sate agency responsible for child care licensing OR local child care resource & referral network
        Education (# child care slots by type, % increase in child care slots)

Automobile registrations and licenses/State motor vehicle agencies
        Transportation (# cares per capita, % population with valid driver's licenses)

State or local
Municipal police department records/Local police departments
        Public Safety (# crimes per population, % crimes committed by residents vs nonresidents

911 calls/Local police departments or regional agency
        Public Safety (# calls for domestic violence, % change in calls over time)

Local
Juvenile Court Filings/Juvenile courts
        Public Safety (% juvenile filings that are for violent offenses, juvenile crime rate)

Coroners' reports/Local coroner
        Health (# suicides involving drugs, % homicides involving firearms)
        Public safety (% homicides involving firearms)

School systems/Boards of education
        Education (# Students enrolled in public school, % children absent more than 20% of days, % children passing proficiency exams)
        Health (% children entering school appropriately immunized)

Head start records/Boards of education
        Education (% eligible children attending Head Start)

Voter records/Local boards of elections
        Social Cohesion and Civic Vitality (% eligible voters who are registered)

Real property records maintained for taxing purposes/Local tax assessor
        Housing (% properties that are residential)
        Economics (% properties tax delinquent, Median housing assessed value)

Records of deed transfers/Local recorder of deeds or property transfers
        Economics (Median sales price, # sheriff's sales)

Planning & engineering agencies/City and regional planning agencies
        Environment (Square miles designated as parks or nature preserves, Miles of bike trails, % street miles with sidewalks)