Determining an Unmet Need Score (UNS)
Description of the Service Area Needs Assessment Methodology (SANAM) and Resulting UNS

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https://bphc.hrsa.gov/programopportunities/fundingopportunities/NAP/index.html

Key Points

- Provide information about the purpose of the Unmet Need Score (UNS) and how it is being used by HRSA
- Describe the measures and measure groups used in calculating the UNS
- Discuss the steps to calculate the UNS for ZIP Codes and service areas

Presentation Outline

- Background

- Overview of Measures and Data Sources

- Use in the New Access Point Funding Opportunity

- Calculating the Unmet Need Score (UNS)

- Modifications to data used in the UNS calculation for the U.S. Territories and the Freely Associated States where data is limited

Terminology

- UNS – Unmet Need Score
  - *Score* representing unmet need for primary and preventive health care services in a ZIP Code (converted to ZCTAs) or Service Area

- SANAM – Service Area Needs Assessment Methodology
  - SANAM is the *methodology* used to generate the UNS

The Unmet Need Score (UNS) Overview

Description	Calculation	Use	Benefit
SANAM generates an UNS which quantifies unmet need in geographically defined service areas	• Based on key measures of health determinants and health status relevant to the Health Center Program • Calculated for individual ZIP Codes which are aggregated to score larger service areas	• Used to evaluate need in New Access Point (NAP) funding applications • Complements the narrative that applicants use to describe unmet need in service area	• Automated to reduce applicant burden • Transparent methodology using data from reputable public sources

Selection of Methodology

- Multiple prototype methodologies for generating an UNS were developed
- The prototypes were evaluated and presented to Health Center Program stakeholders
- The selected prototype
  - Contains a comprehensive set of measures that align with Health Center Program statute and population health research
  - Selected based on evaluation and feedback from stakeholders

Overview of Measures Used to Calculate the UNS

HEALTH DETERMINANTS			HEALTH STATUS	
NON-ACCESS MEASURES	ACCESS OUTCOME MEASURES	ACCESS BARRIER MEASURES	PROXY MEASURES	DIRECT MEASURES
Violent Crime 2.5	Health Center Penetration 25.0	Below 200% Federal Poverty Level 10.88		All-Cause Mortality 2.0
	No Dentist in Past Year 3.25	Associate Degree or Higher 3.25		Unintentional Injury Mortality 2.0
	Pap Smear Screening 3.25	Housing Stress 3.25		Asthma 1.50
	Preterm Birth 3.25	No High School Diploma 3.25		Diabetes 1.50
	Prev. Hospital Stays 3.25	Single Parent Household 3.25		Poor Mental Health 1.50
		Unemployment 3.25		Poor or Fair Health 1.50
		Uninsured 10.88		Chlamydia 1.67
		Linguistic Isolation 3.25		Physical Inactivity 1.67
		Vehicle Access 3.25		Smoking 1.67

Legend:
- Socioeconomic Status Measure
- Measure Weight

See UNS Resource Guide available on the NAP Technical Assistance website for more information

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Non-Access Measures

Violent Crime 2.5

■ Measure Weight

- All measures under Health Determinants focus on access, except for Violent Crime
- High crime rates negatively influence physical and mental wellbeing
- Other reputable needs assessment instruments use the Violent Crime measure
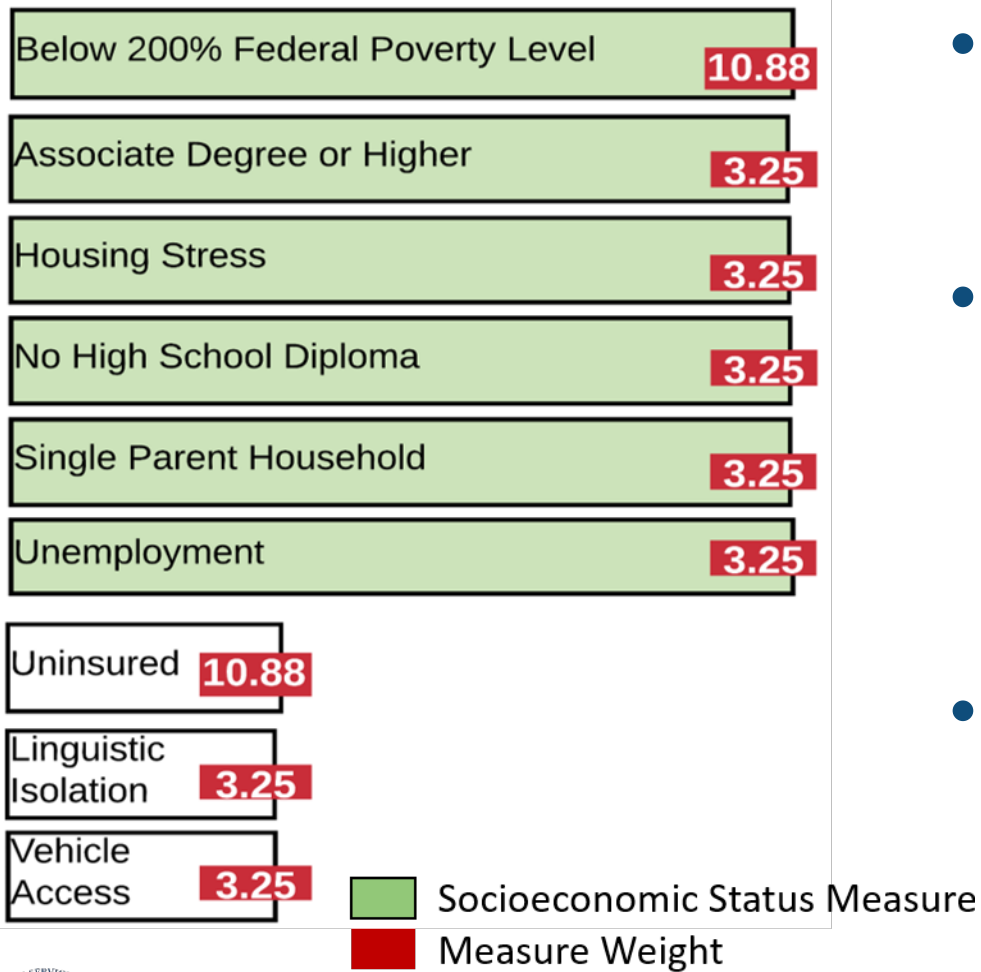
Access Outcome Measures

Measure	Weight
Health Center Penetration	25.0
No Dentist in Past Year	3.25
Pap Smear Screening	3.25
Preterm Birth	3.25
Prev. Hospital Stays	3.25

█ Measure Weight

- Measures capture information about outcomes involving access to primary and preventive health care services
- Together with access barrier measures, these measures capture multiple dimensions of access
- Higher weight for Health Center Penetration measure reflects importance of estimating unmet need for health center services
  - Approximates extent to which population in an area is utilizing health center services

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Access Barrier Measures / Proxy Measures of Health Status

Below 200% Federal Poverty Level — 10.88
Associate Degree or Higher — 3.25
Housing Stress — 3.25
No High School Diploma — 3.25
Single Parent Household — 3.25
Unemployment — 3.25
Uninsured — 10.88
Linguistic Isolation — 3.25
Vehicle Access — 3.25

Socioeconomic Status Measure
Measure Weight

- Social determinants of health that capture information on impediments to timely access to care
- Six out of nine measures assess socioeconomic status (SES) and serve as proxy measures of health status
  - SES is a well-established driver of health outcomes and health disparities
- Below 200% Federal Poverty Level and Uninsured have higher weights
  - Reflects population that could benefit from sliding scale payment for health services

Direct Measures of Health Status
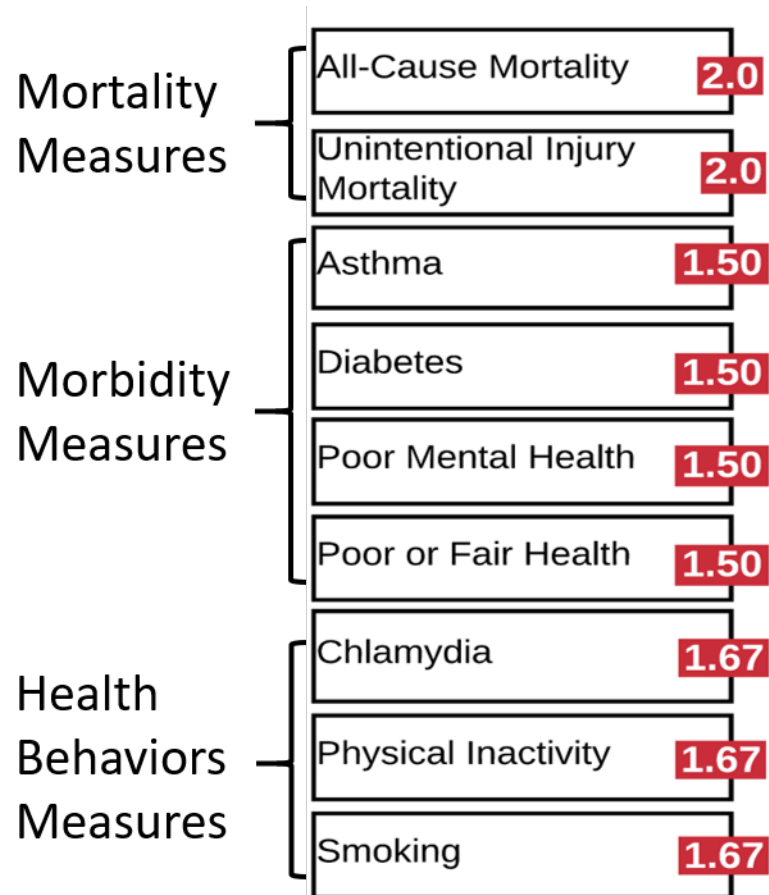
- Direct measures of mortality
  - Approximate burden of excess and preventable mortality
  - Unintentional injury mortality includes opioid and other drug overdoses
- Direct measures of morbidity
  - Top drivers of morbidity, mortality, and health care cost burden
  - Indicative of presence of health harming physical and social conditions
- Direct measures of health behaviors
  - Top behaviors that lead to high burdens of preventable mortality and morbidity, and increased health care cost for underserved communities

Data Sources for Measures in the UNS

American Community Survey	Dartmouth Atlas of Health Care	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Behavioral Risk Factor and Surveillance Survey	Diabetes Atlas	National Vital Statistics System
County Health Rankings	Housing and Urban Development	Uniform Data System (UDS) Mapper

Data reported at the state, county, or census-tract level are extrapolated to ZIP Codes (see UNS Resource Guide available on the NAP Technical Assistance website for details)

Using the UNS for the NAP Funding Opportunity

- Applicants define the proposed service area by listing the service area ZIP Codes in Form 5B of the NAP application
- UNS is calculated automatically based on the proposed service area ZIP Codes
- Workbook available on the NAP Technical Assistance website for applicants to view the UNS and its components

ZIP Code Tabulation Areas

- ZIP Codes defining the proposed service area in Form 5B are translated to ZIP Code Tabulation Areas (ZCTAs) to calculate the UNS
  - The ZCTA is a construction of the U.S. Census Bureau to represent U.S. Postal Service ZIP Code service areas
  - Each ZCTA is associated with one or more ZIP Codes
  - Applicant ZIP Codes are mapped to ZCTAs using a crosswalk available at UDS Mapper: *https://www.udsmapper.org/zcta-crosswalk.cfm*

UNS Calculation Overview

- The UNS is calculated for each **ZCTA** by standardizing and weighting measure values then computing a weighted sum

- The **service area** UNS is calculated by aggregating scores for each ZCTA in the service area using a population-based weighted average

Standardize ZCTA Measure Values Using Percentile Ranks

Example percentile rank calculation for the Uninsured measure:

Uninsured value from UDS Mapper

Divide measure rank by number of available values and multiply by 100 to calculate Percentile Rank (i.e. (6,899/32,600)×100= 21.16)

Measure	Measure Value (from Data Source)	Measure Rank	Number of Available Values	Percentile Rank
Uninsured	0.059	6,899	32,600	21.16

Rank all available Uninsured values from lowest to highest need. The Uninsured value of 0.059 places this ZCTA at the rank of 6,899 out of the 32,600 ZCTAs with available values.

Computing Weighted Measures

Example weighted measure calculation for the Uninsured measure:

Each measure is assigned a weight in the UNS

Measure	Measure Value (from Data Source)	Measure Rank	Number of Available Values	Percentile Rank	Measure Weight (%)	Weighted Measure
Uninsured	0.059	6,899	32,600	21.16	10.875	2.30

The weighted measure is the percentile rank multiplied by measure weight: $21.16 \times 10.875\% = 2.30$

Sum and Rescale Weighted Measure

Example weighted measures values:

Measure	Weighted Measure	Measure	Weighted Measure	Measure	Weighted Measure
Health Center Penetration	9.60	Pap Smear Screening	1.27	Unintentional Injury Mortality	0.51
Below 200% Federal Poverty Level	4.24	Preterm Births	0.61	Chlamydia	1.20
Uninsured	2.30	Preventable Hospital Stays	0.90	Physical Inactivity	0.64
Associate Degree or Higher	0.53	Single-Parent Household	1.96	Smoking	1.13
Housing Stress	1.68	Unemployment	0.76	Asthma	0.89
Linguistic Isolation	2.11	Vehicle Access	2.58	Diabetes	0.23
No Dentist in Past Year	0.93	Violent Crime	1.26	Poor Mental Health	0.07
No High School Diploma	0.92	All-Cause Mortality	0.79	Poor or Fair Health	0.48

- Once each measure is standardized and weighted, ZCTA UNS is calculated by:
  - Summing the weighted measures
  - Rescaling the sum to ensure minimum score is 0 and maximum score is 100 (see UNS Resource Guide for more information)

Example ZCTA UNS calculation:

	Value
Sum of Weighted Measures	*37.6*
ZCTA UNS (Rescaled)	*30.2*

Calculating the Service Area UNS

- The percentage of the total service area population in each ZCTA is calculated (i.e., the population-based weight)
- The population-based weighted UNS score for each ZCTA is calculated by multiplying the ZCTA UNS by the population-based weight
- The UNS for the service area is the sum of each ZCTA's population-based weighted UNS
- The UNS is converted to a 20 point scale for the NAP application by dividing by 5 and rounding up

Example Population-based Weighted UNS Calculations

ZCTA	ZCTA UNS	Population Size	Population-based Weight (%)	Population-based Weighted UNS
ZCTA 1	75.1	10,000	20	15.0
ZCTA 2	44.2	20,000	40	17.7
ZCTA 3	61.7	20,000	40	24.7

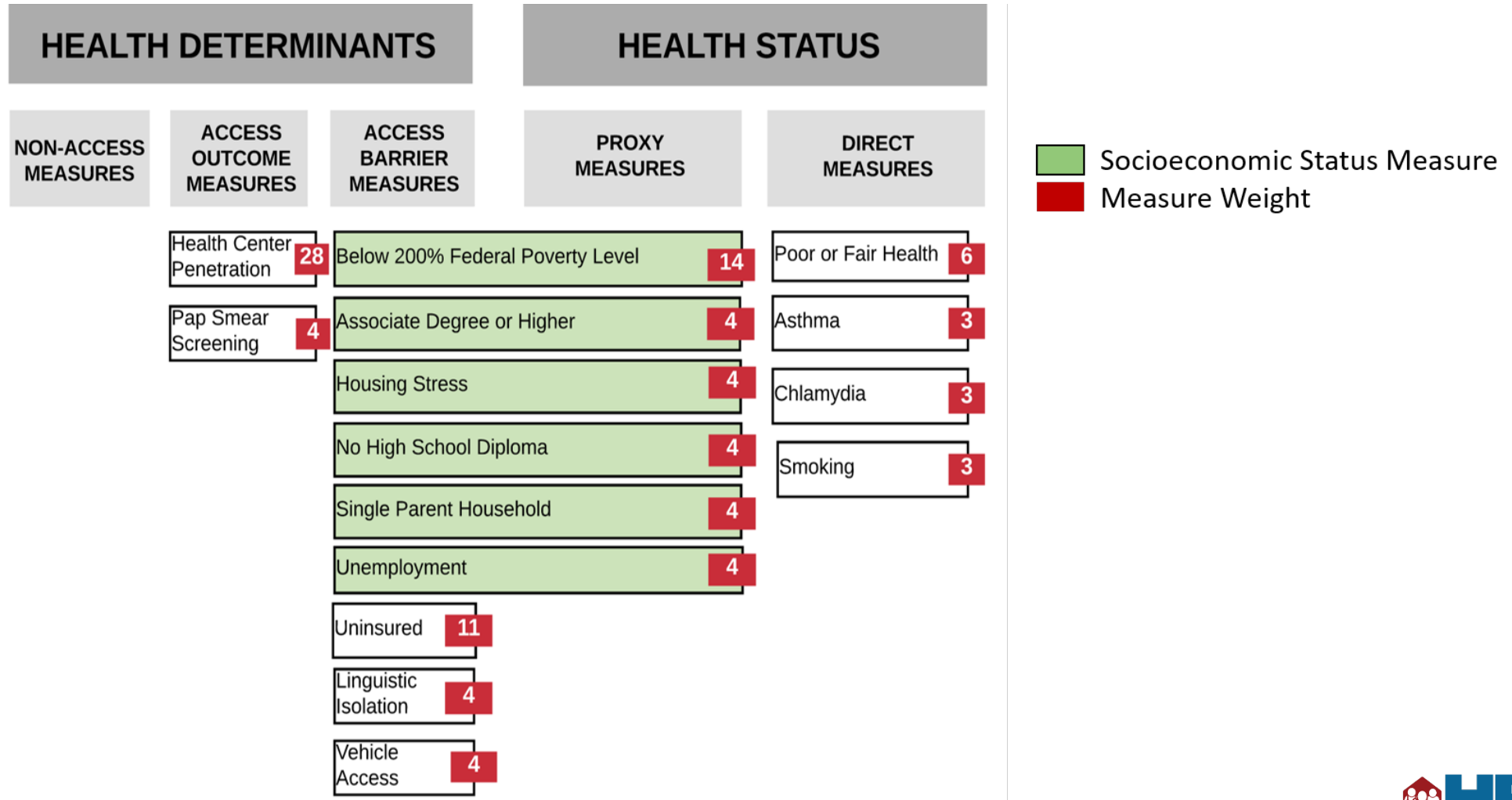## Example Service Area UNS Calculation

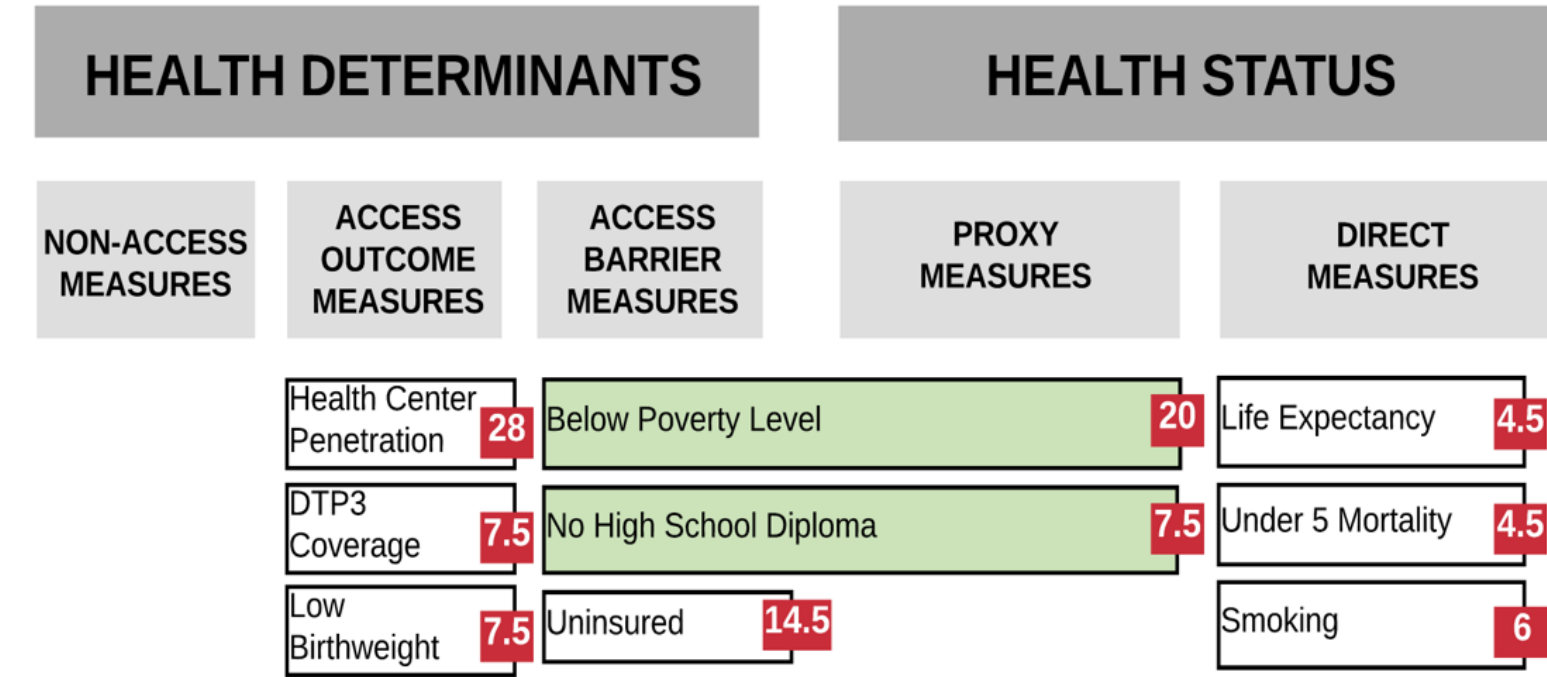|	UNS Value
Service Area UNS (100-point scale)	57.4
Converted UNS (20-point scale)	12

UNS for U.S. Territories and Freely Associated States

- Availability of data is limited for U.S. Territories and the Freely Associated States

- Based on the available data, 3 separate methodologies developed for Puerto Rico, the remaining U.S. Territories, and the Freely Associated States

- Measures selected to align with key drivers of morbidity and mortality

- For more information on the measures see the UNS Resource Guide available on the NAP Technical Assistance website

UNS Measures and Weights for Puerto Rico

	HEALTH DETERMINANTS			HEALTH STATUS	
NON-ACCESS MEASURES	ACCESS OUTCOME MEASURES	ACCESS BARRIER MEASURES		PROXY MEASURES	DIRECT MEASURES
	Health Center Penetration **28**	Below 200% Federal Poverty Level **14**			Poor or Fair Health **6**
	Pap Smear Screening **4**	Associate Degree or Higher **4**			Asthma **3**
		Housing Stress **4**			Chlamydia **3**
		No High School Diploma **4**			Smoking **3**
		Single Parent Household **4**			
		Unemployment **4**			
		Uninsured **11**			
		Linguistic Isolation **4**			
		Vehicle Access **4**			

Socioeconomic Status Measure
Measure Weight

UNS for U.S. Territories excluding Puerto Rico

UNS for the Freely Associated States
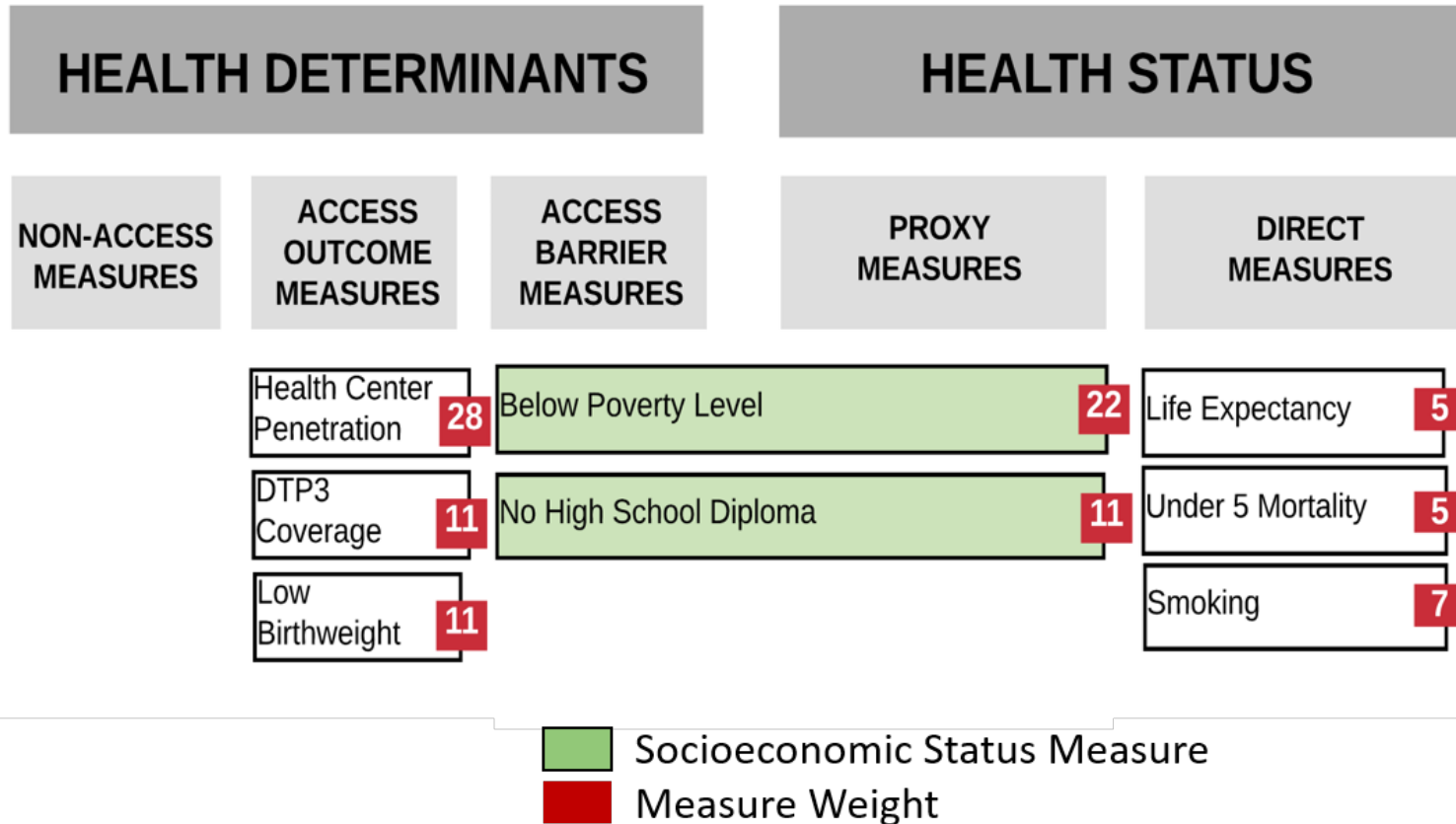
Key Takeaways

- The UNS quantifies unmet need for primary and preventive health services in a service area

- UNS calculation uses reputable measures and data sources

- The UNS calculation is transparent and automated for NAP applications to reduce applicant burden

- Due to data limitations, the measures used in the UNS calculations for U.S. Territories and the Freely Associated States are different

Thank You!

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