PRAPARE
Protocol for Responding to and Assessing
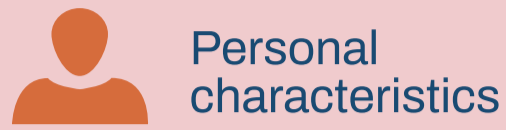Patients' Assets, Risks, and Experiences

Identifying Clusters of PRAPARE Social Determinants of Health Risk Factors Using Factor Analysis

Protocol for Responding to & Assessing Patients' Assets, Risks & Experiences (PRAPARE) is a national standardized patient risk assessment protocol designed to engage patients in assessing & addressing social determinants of health (SDOH). PRAPARE is evidence-based, designed through stakeholder engagement, paired with an Implementation and Action Toolkit, and standardized across ICD-10, LOINC, and SNOWMED. The PRAPARE core questions includes domains of

- Personal characteristics
- Family and Home
- Money and Resources
- Social and Emotional Health

For more information, please visit www.nachc.org/prapare. In this study, we collaborated with the Siouxland Community Health Center and the University of Chicago to identify clusters of risk factors in a population that included patients with diabetes and hypertension, two conditions highly impacted by social risk factors.

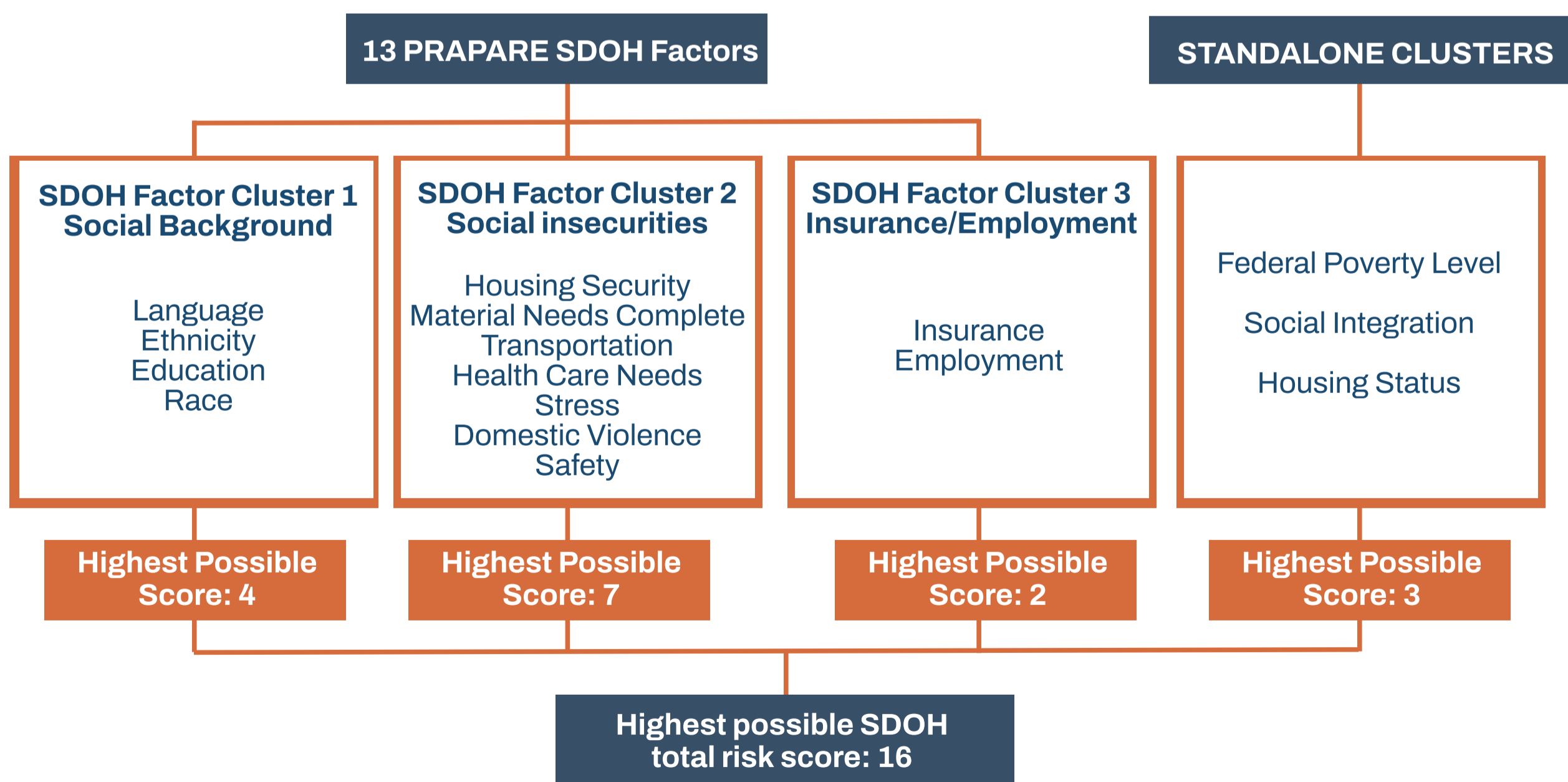## STUDY DESIGN AND POPULATION

- As one of the first PRAPARE pilot sites, Siouxland Community Health Center, located in Sioux City, Iowa, began implementing PRAPARE in 2015.
- Cross-sectional observational study.
- 11,773 adults, aged 18-75, who visited Siouxland Community Health Center (Sioux City, Iowa) between 1/1/2016 to 6/30/2018 and completed the PRAPARE survey.
- 716 patients had diabetes only, 2,388 had hypertension only, 1,477 had both, and 7,192 had neither disease.

7192
2388
1477
716

- Diabetes only (6.08%)
- Hypertension only (20.28%)
- Both (12.55%)
- Neither (61.09%)
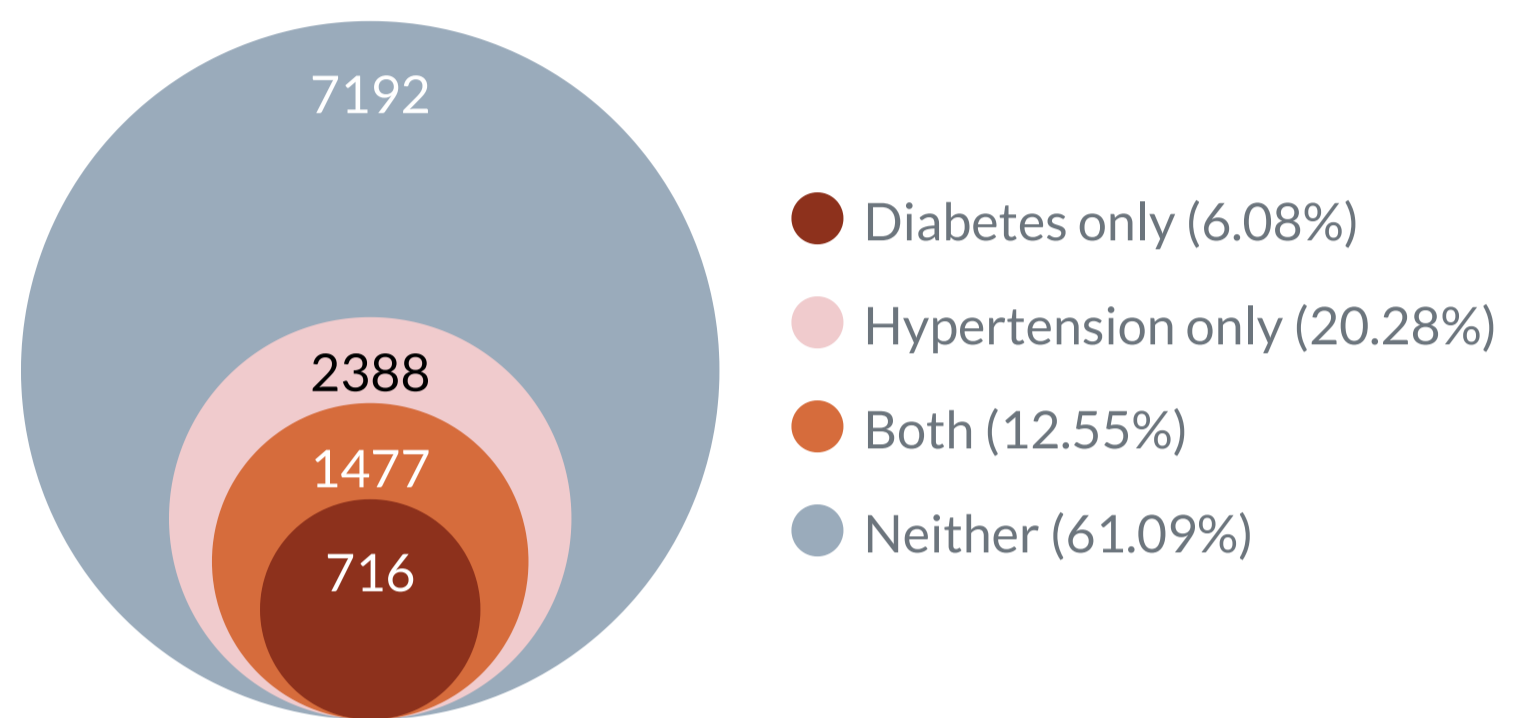
STUDY METHOD

- Exploratory Factor Analysis (EFA) to discover clusters.
- Confirmatory Factor Analysis to confirm the cluster constructs that were discovered from EFA.
- Thirteen variables were included for EFA: **Language, Ethnicity, Education, Race, Housing Security, Food Needs, Transportation Needs, Health Care Needs, Stress, Domestic Violence, Safety, Insurance Status, Employment.**
- Multiple linear and/or logistic regressions to assess the relationships between cluster scores and HbA1c and blood pressure (BP) values, $HbA1c \geq 9\%$, and $BP \geq 140/90$ mm 140/90 Hg.

WHAT WE LEARNED:
PRAPARE SDOH Factors Can Be Categorized Into 3 Clusters + 3 Standalone Factors

13 PRAPARE SDOH Factors

STANDALONE CLUSTERS

SDOH Factor Cluster 1 Social Background

Language
Ethnicity
Education
Race

Highest Possible Score: 4

SDOH Factor Cluster 2 Social insecurities

Housing Security
Material Needs Complete
Transportation
Health Care Needs
Stress
Domestic Violence
Safety

Highest Possible Score: 7

SDOH Factor Cluster 3 Insurance/Employment

Insurance
Employment

Highest Possible Score: 2

Federal Poverty Level
Social Integration
Housing Status

Highest Possible Score: 3

Highest possible SDOH total risk score: 16

AAPCHO ASSOCIATION OF ASIAN PACIFIC COMMUNITY HEALTH ORGANIZATIONS

AT THE FOREFRONT UChicago Medicine

Siouxland Community Health an iowahealth center

NATIONAL ASSOCIATION OF Community Health Centers

WHAT WE LEARNED:
PRAPARE SDOH Clusters Are Associated with Diabetes and Hypertension Outcomes

Demographics

Gender
The non-disease group had the highest percentage of female (66%)

Age
The disease groups had higher average age than the non-disease group. The group with both diabetes and hypertension had the highest average age (56)

The hypertension group had the highest percentage of Hispanic/ Latino patients (75%)

SDOH Factor Cluster 1
Social Background

The diabetes group had the highest percentages of Non-White (35%), Limited English Proficiency (39%), and Less Than High School Education (72%)

SDOH Factor Cluster 2
Social Insecurities

The 4 groups had similar rates in terms of Housing Security, Domestic Violence and Safety

The diabetes group had the highest needs for food (14%) and medicine/ health care (16%)

SDOH Factor Cluster 3
Insurance/Employment

The group with both diabetes and hypertension had the highest rate of transportation needs (14%)

The group with both diabetes and hypertension had the highest rates of unemployment (55%) and uninsured (71%)