OBJECTIVE:
The Rockefeller University Center for Clinical and Translational Science/Clinical Directors Network (RU-CCTS/CDN) community-academic partnership engaged with Carter Burden Network (CBN), a multi-site senior community services organization serving East Harlem, NY, to develop a joint pilot-funded research project aligned around the need to identify a simple validated surrogate measure of overall health status in this population. Many seniors served by CBN are racial/ethnic minorities, live in poverty, suffer from multiple chronic conditions, depression, and food insecurity; there is no simple measure routinely used to characterize the health/health risks of program participants. Multiple biologic, musculoskeletal, psychosocial and nutritional factors collectively contribute to a frailty construct that is very clearly defined, and has been used as a surrogate or predictor for health outcomes.

AIMS:
- **Aim 1:** We will engage seniors, CBN leadership, New York City Department of Aging (DFTA), city agencies, staff and other stakeholders in research priority setting, joint protocol writing, research conduct, analysis and dissemination to cultivate a population of elder stakeholders interested in designing and participating in this future research.
- **Aim 2:** We will characterize the health status of the residential (Site 1) and senior center (Site 2) populations by collecting data across three sessions, including validated cardiorespiratory, musculoskeletal, chronic condition prevalence, quality of life, psychosocial and nutritional assessments.

OUTCOMES:
- **Primary outcome:** Frailty as measured by the validated walk/balance test, Short Physical Performance Battery (SPPB).
- **Secondary outcomes:** Rates of participation/retention in engagement and assessments, themes from qualitative research, placement of aims on the ToT-D spectrum, partnership assessment, characterization of health status of participants, relationship between health variables and services utilization; RIDCuP database that can be used for evaluation, tracking, and research purposes by all partners.

SIGNIFICANCE:
- By 2050, Americans aged 65 or older will number 84 million1; many will have complex health needs, loss of mobility and independence, and experience depression, reduced quality of life and increased healthcare costs all intensified by low income.
- Using a simple-to-implement validated surrogate measure of frailty is critical in order to standardize and streamline community-based translational research in this population and to study the impact of CBN’s services, including senior centers, social, arts and culture, meals and wellness programs, on health outcomes.

METHODS:
**Aim 1: Community Engaged Research Navigation**

**Method Aim 2:**
- Demographic and clinical variables were summarized using percentage for categorical variables and mean ± standard deviation for continuous variables.
- Comparisons by site were made using the chi-squared or Fisher’s exact test for categorical variables and t-test for continuous variables.
- Multivariable logistic regression was performed with SPPB frailty status as a binary outcome variable (Minimal/Mild vs. Moderate/Severe). Asian race was combined with Other race due to sparse counts for the logistic regression.

**RESULTS:**

**Aim 1:**
- **Sample:** 120 participants (96 from Site 1; 24 from Site 2).
- **Groups:** Site 1 (96) vs Site 2 (24).
- **Characteristics:** Age, Gender, BMI, Ethnicity, Education, Employment Status, Married Status, Marital Status, Employment Status, Other.
- **Findings:**
  - Age (Years, Mean ± SD): Site 1 (n = 96) 72 ± 8 vs. Site 2 (n = 24) 68 ± 11 (p = 0.001).
  - Gender (female): Site 1 (n = 96) 63% ± 6% vs. Site 2 (n = 24) 67% ± 6% (p = 0.04).
  - Race: Site 1 (n = 96) 18% ± 1% vs. Site 2 (n = 24) 18% ± 1% (p = 0.003).
  - Ethnicity: Site 1 (n = 96) 19% ± 1% vs. Site 2 (n = 24) 20% ± 1% (p = 0.002).
  - Education: Site 1 (n = 96) 18% ± 1% vs. Site 2 (n = 24) 18% ± 1% (p = 0.003).
  - Employment Status: Site 1 (n = 96) 5% ± 2% vs. Site 2 (n = 24) 13% ± 5% (p = 0.011).
  - Marital Status: Site 1 (n = 96) 16% ± 2% vs. Site 2 (n = 24) 18% ± 2% (p = 0.006).

**Aim 2:**
- **Sample:** Frailty was assessed using the Short Physical Performance Battery (SPPB).
- **Findings:**
  - SPPB scores were significantly lower in Site 2 compared to Site 1 (p < 0.0005).
  - The multivariable logistic regression model for SPPB frailty status, moderate/severe vs. minimal/mild (N = 218) showed a strong association with age, Hispanic Ethnicity (No = refer), and marital status.

**Figure 1. Distribution of Short Physical Performance Battery Scores**

**Figure 2. Distribution of Systolic and Diastolic Blood Pressures**

**Table 1. Characteristics of participative at Site 1 and 2 (N = 218)**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Site 1 (n = 96)</th>
<th>Site 2 (n = 24)</th>
<th>Overall (n = 218)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years, Mean ± SD)</td>
<td>72 ± 8</td>
<td>68 ± 11</td>
<td>70 ± 8.5</td>
</tr>
<tr>
<td>Gender (female)</td>
<td>63% ± 6%</td>
<td>67% ± 8%</td>
<td>66% ± 6.8%</td>
</tr>
<tr>
<td>Race</td>
<td>18% ± 1%</td>
<td>18% ± 1%</td>
<td>18% ± 1%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>19% ± 1%</td>
<td>20% ± 1%</td>
<td>19% ± 1%</td>
</tr>
<tr>
<td>Education</td>
<td>5% ± 1%</td>
<td>13% ± 5%</td>
<td>9% ± 3%</td>
</tr>
<tr>
<td>Employment Status</td>
<td>18% ± 2%</td>
<td>18% ± 2%</td>
<td>18% ± 2%</td>
</tr>
<tr>
<td>Marital Status</td>
<td>16% ± 2%</td>
<td>18% ± 2%</td>
<td>17% ± 2%</td>
</tr>
</tbody>
</table>

**Table 2. Multivariable logistic regression model for SPPB frailty status, moderate/severe vs. minimal/mild (N = 218)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years)</td>
<td>1.08</td>
<td>1.04 - 1.13</td>
<td>0.0062</td>
</tr>
<tr>
<td>Hispanic Ethnicity (No = refer)</td>
<td>3.08</td>
<td>1.01 - 9.45</td>
<td>0.05</td>
</tr>
<tr>
<td>Marital Status (Never married = refer)</td>
<td>1.13</td>
<td>0.01 - 9.45</td>
<td>0.01</td>
</tr>
<tr>
<td>Married or member of a couple</td>
<td>1.05</td>
<td>0.43 - 3.51</td>
<td>0.85</td>
</tr>
<tr>
<td>Systolic Blood Pressure</td>
<td>0.50</td>
<td>0.21 - 1.19</td>
<td>0.47</td>
</tr>
<tr>
<td>Diastolic Blood Pressure</td>
<td>2.01</td>
<td>1.32 - 2.20</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

**REFERENCES:**

**FININDS:**
- • The proportion of participants from Site 2 as compared to Site 1 are more likely to be male (67% vs. 53%).
- • Latino/a (68% vs. 45%).
- • Have income >$20,000 (29% vs. 4%).
- • Have graduated from high school (68% vs. 47%).
- • Have ever married (76% vs. 62%).
- • There are as many more moderately/severely frail participants in Site 1 when compared to Site 2.
- Site 1 participants have 8.6 times greater odds of being moderately or severely frail as compared to Site 2 participants.
- Poorly controlled blood pressure is very common in both populations (X: 137/76 ± SD:19/12)

**CONCLUSIONS:**
- • Through engagement of CBN, academic and lay stakeholders we were able to incorporate their priorities into the design and conduct of this study.
- • We were able to recruit, assess, and characterize the two senior populations who are high-risk, vulnerable, and affected by multiple health disparities.
- • The assessments revealed significant differences between the two populations, both frail high-need participants in Site 1 as compared to Site 2.
- • The frailty measure we used (SPPB) represents a practical easy-to-implement approach that distinguishes between populations.

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