**APPENDIX 5A**


**SPECIFICATIONS FOR TIER 1 AND TIER 2 OUTCOME MEASURES**


The precise quantification of the outcome indicators resulted in a set of outcome measures that can be used to compare outcomes among sites and within a PACE site. This appendix provides the specifications for computing the Tier 1 and Tier 2 outcome measures recommended for implementation. The measure specifications presented in this appendix are a subset of specifications considered during the course of defining the outcome measures for the PACE quality monitoring and OBCQI system. An examination of distributional properties of the various outcome measure specifications resulted in the selection of those measures most promising for quality monitoring and OBCQI.

**TABLE 5A.1: Specifications for Tier 1 and Tier 2 Outcome Measures (SYFT Version).[a]**

| Measure Label | Measure Specification[b] |
|---|---|
| **Tier 1 Outcome Measures** | |
| Decrease in Nutritional Risk | If NUTRITION = 0 exclude from measure.<br>0 if NUTRITION <= NUTRITION[2], 1 if NUTRITION > NUTRITION[2] |
| Improvement in Urinary Continence | If C0440_1 = 0 then exclude from measure.<br>0 if C0440_1 <= C0440_1[2], 1 if C0440_1 > C0440_1[2] |
| Improvement in Dyspnea | If C0420 = 0 then exclude from measure.<br>0 if C0420 <= C0420[2], 1 if C0420 > C0420[2] |
| Improvement in Edema | If Edema_Legs_Present, Edema_Legs_R, and Edema_Legs_L all valid then Edema = 0.<br>If C0430_Legs_R = 1 then Edema = 1, if C0430_Legs_L = 1 then Edema = Edema + 1.<br>If Edema = 0 then exclude from measure.<br>0 if Edema <= Edema[2], 1 if Edema > Edema[2] |
| Increase in Pain Interfering with Daily Activities | If C0270_4 is blank, then C0270_4 = 0, If C0270_4[2] is blank then C0270_4[2] = 0.<br>If C0270_4 is 4 exclude from measure.<br>0 if C0270_4 >= C0270_4[2], 1 if C0270_4 < C0270_4[2] |
| Decline in Edema | If Edema_Legs_Present, Edema_Legs_R, and Edema_Legs_L all valid then Edema = 0.<br>If C0430_Legs_R = 1 then Edema = 1, if C0430_Legs_L = 1 then Edema = Edema + 1.<br>If Edema = 2 then exclude from measure.<br>0 if Edema >= Edema[2], 1 if Edema < Edema[2] |
| Percent of Participants Immunized for Influenza | Missing if left blank. 0 if C0350 = 0, 2. 1 if C0350 = 1. |
| Decrease in Number of Activities Limited by Health | If any of C0530PNA - C0530PNH or C0530PNA[2]-C0530PNH[2] are missing then measure is missing.<br>0 if sum of C0530PNA through C0530PNH <= sum of C0530PNA[2] through C0530PNH[2].<br>1 if sum of C0530PNA through C0530PNH > sum of C0530PNA[2] through C0530PNH[2] |
| Decline in Management of Oral Medications | If C0490 = 2 or NA then exclude from measure.<br>0 if C0490 >= C0490[2], 1 if C0490 < C0490[2] |
| Decrease in Depression/Depressive Symptoms | If DEPRESSION = 0 then exclude from measure.<br>0 if DEPRESSION <= DEPRESSION[2], 1 if DEPRESSION > DEPRESSION[2] |
| Decrease in Self-Report of Loneliness | If C0780_2 = 0 then exclude from measure.<br>0 if C0780_2 <= C0780_2[2], 1 if C0780_2 > C0780_2[2] |
| Decrease in Number of Behavioral Problems | If BEHAVIORNUM = 0 exclude from measure.<br>0 if BEHAVIORNUM <= BEHAVIORNUM[2], 1 if BEHAVIORNUM > BEHAVIORNUM[2] |
| Increase in Depression/Depressive Symptoms | If DEPRESSION = 10 then exclude from measure.<br>0 if DEPRESSION >= DEPRESSION[2], 1 if DEPRESSION < DEPRESSION[2] |
| Improvement in Ability to Understand Others | If C0740 = 0 then exclude from measure.<br>0 if C0740 >= C0740[2], 1 if C0740 < C0740[2] |
| Improvement in Ability to Speak to Others | If C0750 = 0 then exclude from measure.<br>0 if C0750 >= C0750[2], 1 if C0750 < C0750[2] |
| Decline in Ability to Speak to Others | If C0750 = 4 then exclude from measure.<br>0 if C0750 <= C0750[2], 1 if C0750 > C0750[2] |
| Improvement in Satisfaction with Frequency of Social Interactions | If C0760 = 2 then exclude from measure.<br>0 if C0760 >= C0760[2], 1 if C0760 < C0760[2] |
| Decline in Satisfaction with Frequency of Social Interactions | If C0760 = 0 then exclude from measure.<br>0 if C0760 <= C0760[2], 1 if C0760 > C0760[2] |
| Improvement in Therapy Adherence | If C0510 = 2 then exclude from measure.<br>0 if C0510 >= C0510[2], 1 if C0510 < C0510[2] |
| Decrease in Informal Caregiver Stress | If C0810 is 0 then exclude from measure.<br>0 if C0810 <= C0810[2], 1 if C0810 > C0810[2] |
| Improvement in Informal Caregiver Coping | If C0820_1 is 0 then exclude from measure.<br>0 if C0820_1 <= C0820_1[2], 1 if C0820_1 > C0820_1[2] |

| Measure Label | Measure Specification[b] |
|---|---|
| Increase in Informal Caregiver Stress | If C0810 is 4 then exclude from measure.<br>0 if C0810 >= C0810[2], 1 if C0810 < C0810[2] |
| Participant Satisfaction with Staff Communications | If C1020_d, _e, _f, or _g = NA then recode to 0.  0 if all C1020_a through C1020_d, C1020_f, C1020_g <= 1, 1 if any of C1020_a through C1020_d, C1020_f, C1020_g = 2. |
| Participant Satisfaction with Day Health Center Services | 0 if C1040_a or C1040_b = 2, 1 if C1040_a and C1040_b < 2. |
| Participant Satisfaction with Transportation | 0 if C1020_e, C1040_c or C1040_d > 1, 1 if C1020_e, C1040_c, and C1040_d <= 1 |
| Participant Satisfaction with Obtaining Needed Services/ Assistance | 0 if any C1030_a through C1030_d = 2, 1 if all C1030_a through C1030_d < 2. |
| Informal Caregiver Satisfaction with Provider-Family Communications | If C1070_d, _e, _f, or _g = NA then recode to 0.  0 if all C1070_a through C1070_d, C1070_f, C1070_g <= 1, 1 if any of C1070_a through C1070_d, C1070_f, C1070_g = 2. |
| Informal Caregiver Satisfaction with Transportation | 0 if C1070_e, C1090_c or C1090_d > 1, 1 if C1070_e, C1090_c, and C1090_d <= 1. |
| Percent of Participants with Signed Advance Directive | Missing if left blank.  C0650_1. |
| **Tier 2 Outcome Measures** | |
| Decrease in Pain Interfering with Daily Activities | If C0270_4 is blank, then C0270_4 = 0.<br>If C0270_4[2] is blank then C0270_4[2] = 0.<br>If C0270_4 is 0 or 1 exclude from measure.<br>0 if C0270_4 <= C0270_4[2], 1 if C0270_4 > C0270_4[2] |
| Decline in Dyspnea | If C0420 = 4 then exclude from measure.<br>0 if C0420 >= C0420[2], 1 if C0420 < C0420[2] |
| Decline in Urinary Continence | If C0440_1 = 5 then exclude from measure.<br>0 if C0440_1 >= C0440_1[2], 1 if C0440_1 < C0440_1[2] |
| Improvement in Ambulation | If C0850 = 0 then exclude from measure.  0 if C0850 <= C0850[2], 1 if C0850 > C0850[2] |
| Improvement in Management of Oral Medications | If C0490 = 0 or NA then exclude from measure.<br>0 if C0490 <= C0490[2], 1 if C0490 > C0490[2] |
| Improvement in Transferring | If C0860 = 0 the exclude from measure.<br>0 if C0860 <= C0860[2], 1 if C0860 > C0860[2] |
| Decline in Ambulation | If C0850 = 5 then exclude from measure.<br>0 if C0850 >= C0850[2], 1 if C0850 < C0850[2] |
| Decline in Transferring | If C0860 = 5 the exclude from measure.<br>0 if C0860 >= C0860[2], 1 if C0860 < C0860[2] |
| Increase in Number of Activities Limited by Health | If any of C0530a - C0530h or C0530a[2]-C0530h[2] are missing then measure is missing.<br>0 if sum of C0530Pna through C0530PNh >= sum of C0530Pna[2] through C0530PNh[2].<br>1 if sum of C0530Pna through C0530PNh < sum of C0530Pna[2] through C0530PNh[2] |
| Increase in Self-Report of Loneliness | If C0780_2 = 4 then exclude from measure.<br>0 if C0780_2 >= C0780_2[2], 1 if C0780_2 < C0780_2[2] |
| Increase in Number of Behavior Problems | If BEHAVIORNUM = 5 exclude from measure.<br>0 if BEHAVIORNUM >= BEHAVIORNUM[2], 1 if BEHAVIORNUM < BEHAVIORNUM[2] |
| Decline in Ability to Understand Others | If C0740 = 4 then exclude from measure.<br>0 if C0740 <= C0740[2], 1 if C0740 > C0740[2] |
| Improvement in Self-Rated Quality of Life | If C0790 = UA then C0790 is missing.<br>If C0790[2] = UA then C0790[2] is missing.<br>If C0790 is 1 then exclude from measure.<br>0 if C0790 <= C0790[2], 1 if C0790 > C0790[2] |
| Decline in Self-Rated Quality of Life | If C0790 = UA then C0790 is missing. If C0790[2] = UA then C0790[2] is missing.<br>If C0790 is 4 then exclude from measure.<br>0 if C0790 >= C0790[2], 1 if C0790 < C0790[2] |
| Decline in Therapy Adherence | If C0510 = 0 then exclude from measure.<br>0 if C0510 <= C0510[2], 1 if C0510 > C0510[2] |
| Decline in Informal Caregiver Coping | If C0820_1 is 4 then exclude from measure.<br>0 if C0820_1 >= C0820_1[2], 1 if C0820_1 < C0820_1[2] |

| Measure Label | Measure Specification[b] |
|---|---|
| **Baseline Measure Computations** | |
| NUTRITION and NUTRITION[2] | NUTRITION is missing if C0410_01 – C0410_12 are left blank.<br>0 if each of C0410_01 – C0410_12 >= 0.  Scale created whereby:<br>2 points awarded if C0410_01 = 1.<br>3 points awarded if C0410_02 = 1.<br>2 points awarded if C0410_03 = 1.<br>2 points awarded if C0410_04 = 1.<br>2 points awarded if C0410_05 = 1.<br>4 points awarded if C0410_06 = 1.<br>1 point awarded if C0410_07 = 1.<br>1 point awarded if C0410_08 = 1.<br>2 points awarded if C0410_09 = 1.<br>2 points awarded if either C0410_10 or C0410_11 = 1.<br><br>NUTRITION[2] is missing if C0410_01[2] – C0410_12[2] are left blank.<br>0 if each of C0410_01[2] – C0410_12[2] >= 0.  Scale created whereby:<br>2 points awarded if C0410_01[2] = 1.<br>3 points awarded if C0410_02[2] = 1.<br>2 points awarded if C0410_03[2] = 1.<br>2 points awarded if C0410_04[2] = 1.<br>2 points awarded if C0410_05[2] = 1.<br>4 points awarded if C0410_06[2] = 1.<br>1 point awarded if C0410_07[2] = 1.<br>1 point awarded if C0410_08[2] = 1.<br>2 points awarded if C0410_09[2] = 1.<br>2 points awarded if either C0410_10[2] or C0410_11[2] = 1. |
| DEPRESSION and DEPRESSION[2] | DEPRESSION is missing if C0680_A through C0680_J are left blank.  0 if all of C0680_A through C0680_J are 0.  1 for each of C0680_A through C0680_J > 1.<br><br>DEPRESSION[2] is missing if C0680_A[2] through C0680_J[2] are left blank.  0 if all of C0680_A[2] through C0680_J[2] are 0.  1 for each of C0680_A[2] through C0680_J[2] > 1. |
| BEHAVIORNUM and BEHAVIORNUM[2] | BEHAVIORNUM is missing if left blank.  One point for each value of C0690_A through C0690_E >= 2.<br><br>BEHAVIORNUM[2] is missing if left blank.  One point for each value of C0690_A[2] through C0690_E[2] >= 2. |

---

[a] Specifications for utilization measures are not included due to insufficient data collected during the SYFT.

[b] The presence of [2] at the end of a field name in the Measure Specification column indicates that this data item is taken from the follow-up time point.

**APPENDIX 5B**


**POTENTIAL RISK FACTORS FOR TIER 1 OUTCOME MEASURES**


Based on clinical and empirical guidance, a set of potential risk factors was identified for each of the Tier 1 outcome measures and is presented in Table 5B.1 of this appendix. Preliminary logistic regression models were developed for each measure based on the proposed risk factors, with each risk factor statistically tested in the context of empirically estimating the model. Risk factors were retained in the model if they were significant at $p<.10$. Once an initial model had been estimated, review was undertaken to ensure that the model was clinically logical and that non-significant coefficients were not present in the model. Therefore, some of the risk factors identified for a specific outcome measure in Table 5B.1 were not present in the final model.

**TABLE 5B.1:  Potential Risk Factors Identified for Tier 1 Outcome Measures.[1]**

| Risk Factor | Data Item(s)/Measure | Decrease in Nutritional Risk | Improvement in Urinary Continence | Improvement in Dyspnea | Improvement in Edema | Increase in Pain Interf. w/Daily Activ. | Decline in Edema | Decrease in Number of Activities Limited by Health | Decline in Mgmt of Oral Meds | Decrease in Depression/Depr. Symp. | Decrease in Self-Rpt of Loneliness | Decrease in # of Behavior Problems | Increase in Depression/Depr. Symp. | Improvement in Abil. to Underst. Others | Improvement in Abil. to Speak to Others | Decline. in Abil. to Speak to Others | Improvement in Freq. of Social Interact. | Decline in Freq. of Social Interact. | Decrease in Informal Cgvr Stress | Improvement in Informal Cgvr Coping | Improvement in Informal Cgvr Stress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Demographics** | | | | | | | | | | | | | | | | | | | | | |
| Age (in years) | Age | | | | X | | | | | X | | | | | | | | | | | |
| Gender:  female (0-1) | Gender | X | X | | | | X | | | | | | X | | X | | | | | | |
| Marital Status: Married | Married | | | | | | | | | | | | | | | | | | | | |
| Race/ethnicity | Asian (A), Black (B), Hispanic (H), White (W) | A, W | B, A | H | B, A | | | B, W | A | B, W | H | | A W | | B | | H | B, A | | | |
| Education level | C0150 | | | X | | | | | | | | | | | | | | | | | |
| **Length of Enrollment** | | | | | | | | | | | | | | | | | | | | | |
| Length of enrollment | D = Total Days in Pace <1, 1-3, 3-5, >5 (years) | | | | | | <1, 3-5 | 1-3 | | | | D <1, >5 | 3-5 | | <1 | | | | | 3-5 | <1 1-3 |
| **Current Living Situation** | | | | | | | | | | | | | | | | | | | | | |
| Lives in own home | Lives Home | | | | | | X | | | | | | | | | | | X | | | |
| Patient lives alone (0-1) | Lives Alone | | X | | | | | X | | | | | | | X | | | X | X | | |
| Patient lives home with others (0-1) | Home Others | | | | | | | X | | X | | | X | | X | | | X | | | |
| Structural barriers in home | C1010 | | | | | | | | | | | | | | | | X | | | | |
| **Assisting Persons** | | | | | | | | | | | | | | | | | | | | | |
| Number of informal caregivers | C0610 (if no ICG than 0) | X | | | | | | | | | | | | | | | | | | | |
| Participant has unpaid live-in help (0-1) | Assist Home | | | | | | X | X | | X | | | X | | | | | | | | |
| Participant has paid help | Paid Help | | | | | | X | | | X | | | | | | | | | | | X |
| Infrequency of caregiver assistance (1-7) | Frequency of Assistance | | X | | | | | | | X | X | X | | | | | | X | X | | |

| Risk Factor | Data Item(s)/Measure | Decrease in Nutritional Risk | Improvement in Urinary Continence | Improvement in Dyspnea | Improvement in Edema | Increase in Pain Interf. w/Daily Activ. | Decline in Edema | Decrease in Number of Activities Limited by Health | Decline in Mgmt of Oral Meds | Decrease in Depression/Depr. Symp. | Decrease in Self-Rpt of Loneliness | Decrease in # of Behavior Problems | Increase in Depression/Depr. Symp. | Improvement in Abil. to Underst. Others | Improvement in Abil. to Speak to Others | Decline. in Abil. to Speak to Others | Improvement in Freq. of Social Interact. | Decline in Freq. of Social Interact. | Decrease in Informal Cgvr Stress | Improvement in Informal Cgvr Coping | Improvement in Informal Cgvr Stress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Type of Informal Caregiver Assistance** | | | | | | | | | | | | | | | | | | | | | |
| ADL/IADL assistance provided by caregiver (0-1) | ADL Help | X | | | | | | | | X | | | X | | X | | | | X | | |
| Environmental Support | Environmental | X | | | X | | | | | | | | | | | | | | | | |
| Participant Advocacy | Advocacy | X | X | | | | | | | | | | | | | | | | | | |
| **Caregiver QOL** | | | | | | | | | | | | | | | | | | | | | |
| Caregiver stress | C0810 | | | | | | | | | | | | | | X | | | | X | | X |
| Caregiver Social support | C0830 | | | | | X | | | X | | | | | | | | | | X | X | X |
| **Participant QOL** | | | | | | | | | | | | | | | | | | | | | |
| Self-rated health | C0520 | X | | | | | | | | | | | | | | | | | | | |
| Life Event Scale | Life Event | | | X | | | X | | | X | | | | | X | | | | | | |
| Loneliness | C0780-2 | X | | X | | | | | | X | X | X | X | X | X | | X | | | | |
| Frequency of Day Health Center attendance | C0570 | | X | | | X | | | | | | | | | | | | X | | | X |
| Social isolation | C0780-1 | | | | | | | | | X | | | | X | X | | | X | | X | |
| **Advanced Directives** | | | | | | | | | | | | | | | | | | | | | |
| Signed Living Will(%) | Living will | | | | | X | | | | X | | | | X | X | | | | | | |
| **Prognosis** | | | | | | | | | | | | | | | | | | | | | |
| Overall prognosis (0-1) | Prognosis | | | X | X | | | | | | | | | X | | | | | | | |
| Rehabilitation prognosis (0-1) | Rehab Prognosis | | | X | X | | | | X | | | | | | X | | | | | | |
| Drug dependency (0-1) | C0320_4 | | | | | | | | | | | | | | | | | | | | |
| Heavy smoking (0-1) | C0320_1 | | | | | | | | | X | | | X | | X | | | | | | |
| Obesity (0-1) | C0320_2 | | | | | | | | | | | | | | | | | | | | |

# TABLE 5B.1:  Potential Risk Factors Identified for Tier 1 Outcome Measures.[1]  (Cont'd)

| Risk Factor | Data Item(s)/Measure | Decrease in Nutritional Risk | Improvement in Urinary Continence | Improvement in Dyspnea | Improvement in Edema | Increase in Pain Interf. w/Daily Activ. | Decline in Edema | Decrease in Number of Activities Limited by Health | Decline in Mgmt of Oral Meds | Decrease in Depression/Depr. Symp. | Decrease in Self-Rpt of Loneliness | Decrease in # of Behavior Problems | Increase in Depression/Depr. Symp. | Improvement in Abil. to Underst. Others | Improvement in Abil. to Speak to Others | Decline. in Abil. to Speak to Others | Improvement in Freq. of Social Interact. | Decline in Freq. of Social Interact. | Decrease in Informal Cgvr Stress | Improvement in Informal Cgvr Coping | Improvement in Informal Cgvr Stress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alcohol Dependency (0-1) | C0320_3 | | | | | | | | | | X | | | X | X | | X | | X | | |
| **Physiologic Status** | | | | | | | | | | | | | | | | | | | | | |
| Dyspnea (0-4) | Dyspnea | | X | X | X | X | | | | | | | | | | | | X | | | |
| Edema (Legs/Feet) | Edema (leg) | | | | | X | | | | | | | | | | | | X | X | | |
| Flu Immunization (%) | Immunization | | | | | | | | | X | | X | | | | | | | | | X |
| Urinary incontinence (0-1) | C0440_1 | | X | | | | | | | | | | | | | | | | | | |
| Bowel incontinence frequency (0-5) | Bowel Incontinence | | X | | | | | | | | | | | | X | | | X | X | | |
| Severity of Pain (0-1-, scale avg.) | Pain Severity | X | | X | | | X | | | | | | | | | | | | | | |
| Pain interfering with activity (0-3) | Pain | | | | | X | | X | | | | | | | | | | | | | |
| Intractable pain (0-1) | Intractable Pain | X | | | | | | X | | X | | | X | | | | | | X | | |
| **Falls** | | | | | | | | | | | | | | | | | | | | | |
| Number of injuries due to falls | Falls | X | | | X | X | | | | | | | | | | | | | | | |
| Number of falls | C0470_1 | | | | | | | | | | | | | | | | | | | | |
| **Sensory Status** | | | | | | | | | | | | | | | | | | | | | |
| Vision impairment (0-2) | Vision | | | | | | | | | | | | | | | | | | | | |
| Hearing impairment (0-4) | Hearing | | | | | | | | | | | | | | | | | | | | |
| Language Comprehension Impairment (0-2) | Language Comp | | X | | X | | | | | X | | | | X | X | X | | | | | |
| Language Expression Impairment (0-2) | Language Exp | X | X | | | | | | | X | | | | X | | | X | | | | |
| **ADL Disabilities** | | | | | | | | | | | | | | | | | | | | | |
| Endurance | C0840 | X | X | | | | | | X | | | | | X | | | | | X | | |
| Disability in eating (0-5) | Eating | | X | | | X | | | | | | | | X | X | | | | X | | X |

| Risk Factor | Data Item(s)/Measure | Decrease in Nutritional Risk | Improvement in Urinary Continence | Improvement in Dyspnea | Improvement in Edema | Increase in Pain Interf. w/Daily Activ. | Decline in Edema | Decrease in Number of Activities Limited by Health | Decline in Mgmt of Oral Meds | Decrease in Depression/Depr. Symp. | Decrease in Self-Rpt of Loneliness | Decrease in # of Behavior Problems | Increase in Depression/Depr. Symp. | Improvement in Abil. to Underst. Others | Improvement in Abil. to Speak to Others | Decline. in Abil. to Speak to Others | Improvement in Freq. of Social Interact. | Decline in Freq. of Social Interact. | Decrease in Informal Cgvr Stress | Improvement in Informal Cgvr Coping | Improvement in Informal Cgvr Stress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dependence in personal care (0-1) | Personal Care | | X | | | | | | | | | X | | | | | X | | X | | |
| Impaired mobility (0-1) | Immobility | | X | | | | | | | | | | | | | | | | | | |
| **IADL Disabilities** | | | | | | | | | | | | | | | | | | | | | |
| Disability in telephone use (0-5) | Phone Use | | X | | | | | | | | | X | X | | | | | X | | | |
| Disability in mgt. of oral medications (0-2) | Oral Meds | | X | | | | | | X | | | X | | X | X | | X | | | X | |
| Dependence in living skills (0-1) | Living Skills | | X | | | | | | | | | | | | | | | X | | | |
| **Neuro/Emotional/Behavioral Status** | | | | | | | | | | | | | | | | | | | | | |
| Disability in cognitive functioning (0-4) | C0710 | | X | | X | X | | | | | | X | | | | | | | | | |
| Impaired decision-making | C0730 | | X | | X | X | | | | X | | X | | | | | | X | | | |
| Memory deficit | C0720_1 or C0720_2 | | X | | | | | | | X | | X | X | | | | | X | | | |
| Memory loss requiring supervision | C0720_3 | | X | | | X | | | | | | X | | | | | | X | | | |
| Anxiety level (0-3) | C0660 | X | | X | X | | | | | X | | X | X | | X | | | | X | X | |
| Depression/Depressive symptoms | Depression | | | | | | | X | | X | X | | X | | | | | | | | |
| Behavior problem | Behavior | | | | | | | | | | | | | | | | | | | | |
| Wandering | C0700 | | X | | | | | | | | | | X | | | X | | | | | |
| Adherence to medications | C0500 | | | | | | | | | X | X | | X | | | | | | | | |
| Adherence to medical interventions/treatments other than medications (e.g., rehab, diet, etc.) | C0510 | | | | | | | | | X | X | | X | | | | X | | X | X | |
| Nutritional Risk | Nutrition Risk | X | | | X | | | | | X | | | | | | | X | | | | |
| **Diagnosis** | | | | | | | | | | | | | | | | | | | | | |
| Diagnosis: infectious/ parasitic diseases (0-1) | HCDG1 | | | X | | X | | | | | | | | X | | | X | X | X | | |

## TABLE 5B.1: Potential Risk Factors Identified for Tier 1 Outcome Measures.[1]  (Cont'd)

| Risk Factor | Data Item(s)/Measure | Decrease in Nutritional Risk | Improvement in Urinary Continence | Improvement in Dyspnea | Improvement in Edema | Increase in Pain Interf. w/Daily Activ. | Decline in Edema | Decrease in Number of Activities Limited by Health | Decline in Mgmt of Oral Meds | Decrease in Depression/Depr. Symp. | Decrease in Self-Rpt of Loneliness | Decrease in # of Behavior Problems | Increase in Depression/Depr. Symp. | Improvement in Abil. to Underst. Others | Improvement in Abil. to Speak to Others | Decline. in Abil. to Speak to Others | Improvement in Freq. of Social Interact. | Decline in Freq. of Social Interact. | Decrease in Informal Cgvr Stress | Improvement in Informal Cgvr Coping | Improvement in Informal Cgvr Stress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diagnosis: neoplasms (0-1) | HCDG2 | | | | | | | | | | | | | X | | | | | | | |
| Diagnosis: endocrine/ nutritional/metabolic (0-1) | HCDG3 | | | | | | X | | | X | | X | | | | | X | | | | |
| Diagnosis: blood diseases (0-1) | HCDG4 | | | | | | | | | X | | | | | | | | | | | |
| Diagnosis: mental disease (0-1) | HCDG5 | | | | | | | | | | | | | | | | | | | | |
| Diagnosis: nervous system disorder (0-1) | HCDG6 | | | | | | | | | | | | | | | | | | | | |
| Diagnosis: circulatory system diseases (0-1) | HCDG7 | | | | | | | | | | | | | | | | X | | | | |
| Diagnosis: respiratory system diseases (0-1) | HCDG8 | | | | | | | X | | | | X | | | | | | X | | | |
| Diagnosis: digestive system diseases (0-1) | HCDG9 | | X | | | | X | X | | X | | | | | X | | X | | | | |
| Diagnosis: genitourinary system diseases (0-1) | HCDG10 | | | | X | | | | | | | | | | | X | | | | | |
| Diagnosis: skin/ subcutaneous diseases (0-1) | HCDG12 | | X | | | | | X | | | | | | | X | | | | | | |
| Diagnosis: musculoskeletal system diseases (0-1) | HCDG13 | | X | | | | | | X | | | | | | | | | | | | |
| Diagnosis: ill-defined conditions (0-1) | HCDG15 | | X | | | | X | | | | | | | | | | | | | | |
| Diagnosis: fractures (0-1) | HCDG16 | | | | | | | | | | | | | | X | | | | | X | |
| Diagnosis: other injury (0-1) | HCDG18 | | X | | | | | | | | | | | | | | | | | | |
| Life Expectancy | C0260 | | | | | | X | | | | | | | | | | | | | | X |

_____

[1] This table includes risk factors used in OASIS risk models, selected risk factors suggested by PACE clinical panels, and additional potential risk factors identified by the project team.  Risk factor measure specification can be found in Appendix 5C.

**APPENDIX 5C**


**COCOA-B RISK FACTOR AND PARTICIPANT CHARACTERISTICS MEASURES SPECIFICATIONS (SYFT VERSION)**


      This appendix contains measure specifications for the risk factors and participant characteristic measures developed during the course of the project. Several of the measures specified in Table 5C.1 were used for both preliminary risk adjustment of the Tier 1 outcome measures and for the Participant Characteristics Reports sent to PACE sites that participated in the SYFT.

**TABLE 5C.1: COCOA-B Risk Factor and Participant Characteristics Measure Specifications (SYFT Version).**

| Label | Measure Specification | PCR[a] | Risk Factor |
|---|---|---|---|
| **Demographics** | | | |
| Age (average in years) | Year of Assessment – Year of Birth. (C0050, C0080) | X | X |
| Gender: Female (%) | 0 if C0070 = 1 and 1 if C0070 = 2. | X | X |
| Married (%) | Missing if left blank. 0 if C0140 = 2, 3, 4, 5. 1 if C0140 is 1. | X | X |
| Race/Ethnicity: Asian (%) | Missing if marked unknown or left blank. 0 if C0130_2 = 0. 1 if C0130_2 = 1. | X | X |
| Race/Ethnicity: Black or African American (%) | Missing if marked unknown or left blank. 0 if C0130_3 = 0. 1 if C0130_3 = 1. | X | X |
| Race/Ethnicity: Hispanic or Latino (%) | Missing if marked unknown or left blank. 0 if C0130_4 = 0. 1 if C0130_4 = 1. | X | X |
| Race/Ethnicity: Non-Hispanic White (%) | Missing if marked unknown or left blank. 0 if C0130_6 = 0. 1 if C0130_6 = 1 and C0130_4. | X | X |
| Education Level | Missing if left blank. C0150. | | X |
| **Length of Enrollment** | | | |
| < 1 Year (%) | Date Assessment Completed - Program Enrollment Date <= 364. (C0050, C0060) | X | X |
| 1-3 Years (%) | Date Assessment Completed - Program Enrollment Date >= 365 and <= 1094. (C0050, C0060) | X | X |
| 3-5 Years (%) | Date Assessment Completed - Program Enrollment Date >= 1095 and <= 1824. (C0050, C0060) | X | X |
| > 5 Years (%) | Date Assessment Completed - Program Enrollment Date >= 1825. (C0050, C0060) | X | X |
| **Current Living Situation** | | | |
| Lives in Own Home | Missing if C0580 is blank. 0 initially. 1 if C0580 = 1 | | X |
| Lives Alone (%) | Missing if C0590_1 is blank. 0 initially. 1 if C0590_1 = 1 and C0580 = 1, 3, 5 | X | X |
| Home With Others (%) | Missing if C0580 is blank or C0590 is blank. 0 initially. 1 if C0580 = 1, 2 and (C0590_2 is 1 or C0590_3 is 1 or C0590_4 is 1 or C0590_5 is 1 or C0590_6 is 1 or C0590_7 is 1). | X | X |
| Group Living Situation (%) | Missing if C0580 is blank or C0590 is blank. 0 initially. 1 if C0580 = 4, 6, 7 or (C0580 = 3, 5 and C0590_1 = 0). | X | |
| Nursing Home (%) | Missing if C0580 is blank. 0 if C0580 = 1, 2, 3, 4, 5, 6, 7, 10. 1 if C0580 = 8 or 9. | X | |
| Structural Barriers in the Home | Missing if left blank. One point for each positive response for C1010_1 to C1010_6. | | X |
| **Assisting Persons** | | | |
| Number of Informal Caregivers | Missing if left blank. C0610. 0 if C0600_0 = 1. | | X |
| Residing in Home (%) | Missing if left blank. C0600_2. | X | X |
| Residing Outside Home (%) | Missing if left blank. C0600_1. | X | |
| Paid Help (%) | Missing if left blank. 0 if C0590_5 = 0 and C0590_6 = 0. 1 if C0590_5 = 1 or 0590_6 = 1. | X | X |
| Frequency of Assistance (0-5, scale avg.) | Missing if left blank. C0620. | X | X |
| **Type of Informal Caregiver Assistance** | | | |
| ADL/IADL (%) | Missing if left blank. 0 if C0630_1 = 0 and C0630_2 = 0. 1 if C0630_1 = 1 or C0630_2 = 1 | X | X |
| Environmental Support (%) | Missing if left blank. 0 if C0630_3 = 0 and C0630_4 = 0 and C0630_5 = 0. 1 if C0630_3 = 1 or C0630_4 = 1 or C0630_5 = 1. | X | X |
| Participant Advocacy (%) | Missing if left blank. 0 if C0630_6 = 0 and C0630_7 = 0 and C0630_8 = 0. 1 if C0630_6 = 1 or C0630_7 = 1 or C0630_8 = 1 | X | X |

| Label | Measure Specification | PCR[a] | Risk Factor |
|---|---|:---:|:---:|
| **Caregiver Quality of Life** | | | |
| Caregiver Stress | Missing if left blank. C0810. | | X |
| Caregiver Social Support | Missing if left blank. C0830. | | X |
| **Participant Quality of Life** | | | |
| Self-rated Health | Missing if left blank. C0520. | | X |
| Life Event Scale | Missing if left blank. 0 if C0670_1 = 0. C0670_2. | | X |
| Loneliness | Missing if left blank. C0780_2. | | X |
| Frequency of Day Health Center Attendance | Missing if left blank. C0570. | | X |
| Social Isolation | Missing if left blank. C0780_1. | | X |
| **Advance Directives** | | | |
| Signed Living Will (%) | Missing if left blank. C0650_1. | X | X |
| **Prognoses** | | | |
| Overall Prognosis (0-2, scale avg.) | Missing if left blank. C0250. | X | X |
| Functional Rehab Prognosis (0-2, scale avg.) | Missing if left blank. C0990. | X | X |
| Drug Dependency | Missing if left blank. C0320_4. | | X |
| Heavy Smoking | Missing if left blank. C0320_1. | | X |
| Obesity | Missing if left blank. C0320_2. | | X |
| Alcohol Dependency | Missing if left blank. C0320_3. | | X |
| **Respiratory Status** | | | |
| Dyspnea (0-4, scale avg.) | Missing if left blank. C0420. | X | X |
| **Edema** | | | |
| Legs/Feet (%) | 0 if C0430_legs_none = 1. 1 if C0430_legs_R = 1 or C0430_L = 1. | X | X |
| **Immunizations** | | | |
| Flu Immunization (%) | Missing if left blank. 0 if C0350 = 0, 2. 1 if C0350 = 1. | X | X |
| **Elimination Status** | | | |
| UTI Within Past 14 Days (%) | Missing if left blank. C0450. | X | |
| Urinary Incontinence | Missing if left blank. C0440_1. | | X |
| Urinary Incontinence (%) | Missing if C0440_1 = 5. 0 if C0440_1 = 0. 1 if C0440_1 = 1, 2, 3, or 4. | X | |
| Incontinent Day and Night (%) | Missing if C0440_1 = 5. 0 if C0440_2 = 0 or 1. 1 if C0440_2 = 2. | X | |
| Urinary Catheter (%) | 0 initially. 1 if C0440_1 = 5. | X | |
| Bowel Incontinence (0-6, scale avg.) | Missing if left blank. C0460. 6 if C0460 = NA | X | X |
| **Pain** | | | |
| Severity of Pain (0-10, scale avg.) | Missing if C0270_2_UA is 1. 0 if C0270_1 = 0. CO270_2. | X | X |
| Pain Interfering with Activity (0-4, scale avg.) | Missing if left blank. 0 if C0270_1 = 0. C0270_4. | X | X |
| Intractable Pain (%) | Missing if left blank. 0 if C0270_1 = 0. C0270_5. | X | X |
| **Falls** | | | |
| Fall Resulting in Injury (%) | Missing if left blank. 0 if C0470_1 = 0 or C0470_2 = 0. 1 if C0470_2 >= 1. | X | X |
| **Sensory Status** | | | |
| Vision Impairment (0-2, scale avg.) | Missing if left blank. C0360. | X | X |
| Hearing Impairment (0-2, scale avg.) | Missing if left blank. C0370. | X | X |

**TABLE 5C.1: COCOA-B Risk Factor and Participant Characteristics Measure Specifications (SYFT Version). (Cont'd)**

| Label | Measure Specification | PCR[a] | Risk Factor |
|---|---|---|---|
| Language Comprehension Impairment (0-2, scale avg.) | Missing if left blank. C0740. | X | X |
| Language Expression Impairment (0-2, scale avg.) | Missing if left blank. C0750. | X | X |
| **ADL Disabilities** | | | |
| Endurance | Missing if left blank. C0840. | | X |
| Grooming (0-3, scale avg.) | Missing if left blank. C0880. | X | |
| Upper Body Dressing (0-3, scale avg.) | Missing if left blank. C0890. | X | |
| Lower Body Dressing (0-3, scale avg.) | Missing if left blank. C0900. | X | |
| Bathing (0-5, scale avg.) | Missing if left blank. C0870. | X | |
| Toileting (0-5, scale avg.) | Missing if left blank. C0910. | X | |
| Transferring (0-5, scale avg.) | Missing if left blank. C0860. | X | |
| Ambulation (0-5, scale avg.) | Missing if left blank. C0850. | X | |
| Eating (0-5, scale avg.) | Missing if left blank. C0920. | X | X |
| Dependence in Personal Care (%) | 0 initially. 1 if (C0870 = 3, 4, 5 or C0880 = 2, 3) and ((C0890 = 2, 3) or (C0900 = 2, 3)). | X | X |
| Impaired Ambulation/ Mobility (%) | 0 initially. 1 if C0910 = 3, 4, 5 or C0860 = 2, 3, 4, 5 or C0850 = 2, 3, 4, 5. | X | X |
| **IADL Disabilities** | | | |
| Light Meal Preparation (0-2, scale avg.) | Missing if left blank. C0930. | X | |
| Transportation (0-2, scale avg.) | Missing if left blank. C0980. | X | |
| Laundry (0-2, scale avg.) | Missing if left blank. C0960. | X | |
| Housekeeping (0-4, scale avg.) | Missing if left blank. C0950. | X | |
| Shopping (0-3, scale avg.) | Missing if left blank. C0940. | X | |
| Phone Use (0-5, scale avg.) | Missing if left blank. C0970. | X | X |
| Management of Oral Meds (0-2, scale avg.) | Missing if left blank. C0490. | X | X |
| Dependence in Living Skills (%) | 0 initially. 1 if C0930 = 1, 2 and ((C0960 = 1, 2 and C0980 = 1, 2) or (C0960 = 1, 2 and C0950 = 3, 4) or (C0960 = 1, 2 and C0940 = 2, 3) or (C0960 = 1, 2 and C0970 = 4, 5) or (C0980 = 1, 2 and C0950 = 3, 4) or (C0980 = 1, 2 and C0940 = 2, 3) or (C0980 = 1, 2 and C0970 = 4, 5) or (C0950 = 3, 4 and C0940 = 2, 3) or (C0950 = 3, 4 and C0970 = 4, 5) or (C0940 = 2, 3 and C0970 = 4, 5)). | X | X |
| **Neuro/Emotional/Behavioral Status** | | | |
| Moderate Cognitive Disability (%) | Missing if left blank. 0 if C0710 = 0, 1. 1 if C0710 >= 2. | X | |
| Disability in Cognitive Functioning | Missing if left blank. C0710. | | X |
| Impaired Decision-Making | Missing if left blank. C0730. | | X |
| Memory Deficit | Missing if left blank. 0 if C0720_1 = 0 and C0720_2 = 0. 1 if C0720_1 = 1 or C0720_2 = 1. | | X |
| Memory Loss Requiring Supervision | Missing if left blank. C0720_3. | | X |
| Severe Anxiety Level (%) | Missing if left blank. 0 if C0660 = 0, 1. 1 if C0660 >= 2. | X | |
| Anxiety Level | Missing if left blank. C0660. | | X |

| Label | Measure Specification | PCR[a] | Risk Factor |
|---|---|:---:|:---:|
| Depressive Symptoms Occurring > Monthly (0-10, scale avg.) | Missing if C0680_A through C0680_J are left blank.  0 if all of C0680_A through C0680_J are 0.  1 for each of C0680_A through C0680_J > 1.  Max value = 10. | X | X |
| Behavioral Problems > Monthly (%) | 0 if C0690_A < 2 and C0690_B < 2 and C0690_C < 2 and C0690_D < 2 and C0690_E < 2. 1 if C0690_A >= 2 or C0690_B >= 2 or C0690_C >= 2 or C0690_D >= 2 or C0690_E>=2. | X | |
| Behavior Problems | Missing if left blank.  One point for each value of C0690_A through C0690_E >= 2. | | X |
| Wandering (%) | Missing if left blank.  0 if C0700 = 0, 1.  1 if C0700 >= 2. | X | |
| Wandering | Missing if left blank.  C0700. | | X |
| **Adherence to Treatment** | | | |
| Poor Adherence to Medications (%) | Missing if left blank.  0 if C0500 = 1.  1 if C0500 = 0. | X | |
| Adherence to Medications | Missing if left blank.  C0500. | | X |
| Poor Adherence to Therapy/Interventions (%) | Missing if left blank.  0 if C0510 = 1.  1 if C0510 = 0. | X | |
| Adherence to Therapy/Interventions | Missing if left blank.  C0510. | | X |
| **Nutritional Risk** | | | |
| Nutritional Risk (%) | Missing if C0410_01 – C0410_12 are left blank. 0 if each of C0410_01 – C0410_12 >= 0.  Scale created whereby 2 points awarded if C0410_01 = 1. 3 points awarded if C0410_02 = 1. 2 points awarded if C0410_03 = 1. 2 points awarded if C0410_04 = 1. 2 points awarded if C0410_05 = 1. 4 points awarded if C0410_06 = 1. 1 point awarded if C0410_07 = 1. 1 point awarded if C0410_08 = 1. 2 points awarded if C0410_09 = 1. 2 points awarded if either C0410_10 or C0410_11 = 1. C0410_12 not counted.  Measure = 0 if scale <= 5, 1 if scale >= 6. | X | X |
| **Current Diagnoses** | | | |
| Infections/parasitic diseases (%) | If any diagnosis falls within the ranges given below and the associated severity is > 0 then they are assigned a value of 1 for the HCDG. | X | X |
| Neoplasms (%) | If icd gt 0 and icd le 139 then HCDG1 if icd ge 140 and icd le 239 then HCDG2 | X | X |
| Endocrine/nutrit./metabolic (%) | if icd ge 240 and icd le 279 then HCDG3 if icd ge 280 and icd le 289 then HCDG4 | X | X |
| Blood diseases (%) | if icd ge 290 and icd le 319 then HCDG5 if icd ge 320 and icd le 389 then HCDG6 | X | X |
| Mental diseases (%) | if icd ge 390 and icd le 459 then HCDG7 if icd ge 460 and icd le 519 then HCDG8 | X | X |
| Nervous system diseases (%) | if icd ge 520 and icd le 579 then HCDG9 if icd ge 580 and icd le 629 then HCDG10 if icd ge 630 and icd le 677 then HCDG11 | X | X |
| Circulatory system diseases (%) | if icd ge 680 and icd le 709 then HCDG12 if icd ge 710 and icd le 739 then HCDG13 | X | X |
| Respiratory system diseases (%) | if icd ge 740 and icd le 759 then HCDG14 if icd ge 780 and icd le 799 then HCDG15 | X | X |

| Label | Measure Specification | PCR[a] | Risk Factor |
|---|---|---|---|
| Digestive system diseases (%) | if icd ge 800 and icd le 848 then HCDG16<br>if icd ge 850 and icd le 854 then HCDG17<br>if icd ge 860 and icd le 959 then HCDG18<br>if icd ge 960 and icd le 999 then HCDG19 | X | X |
| Genitourinary system diseases (%) | | X | X |
| Skin/subcutaneous diseases (%) | | X | X |
| Musculoskeletal system diseases (%) | | X | X |
| Ill-defined conditions (%) | | X | X |
| Fractures (%) | | X | X |
| Other injury (%) | | X | X |
| Iatrogenic conditions (%) | | X | X |
| Life Expectancy | Missing if left blank.  C0260. | | X |

_____

[a] Measures included on the Participant Characteristics Reports sent to sites after completion of the SYFT.