

Vulnerability To Adverse Health Outcomes Amongst Senior Housing Residents

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Presenters:

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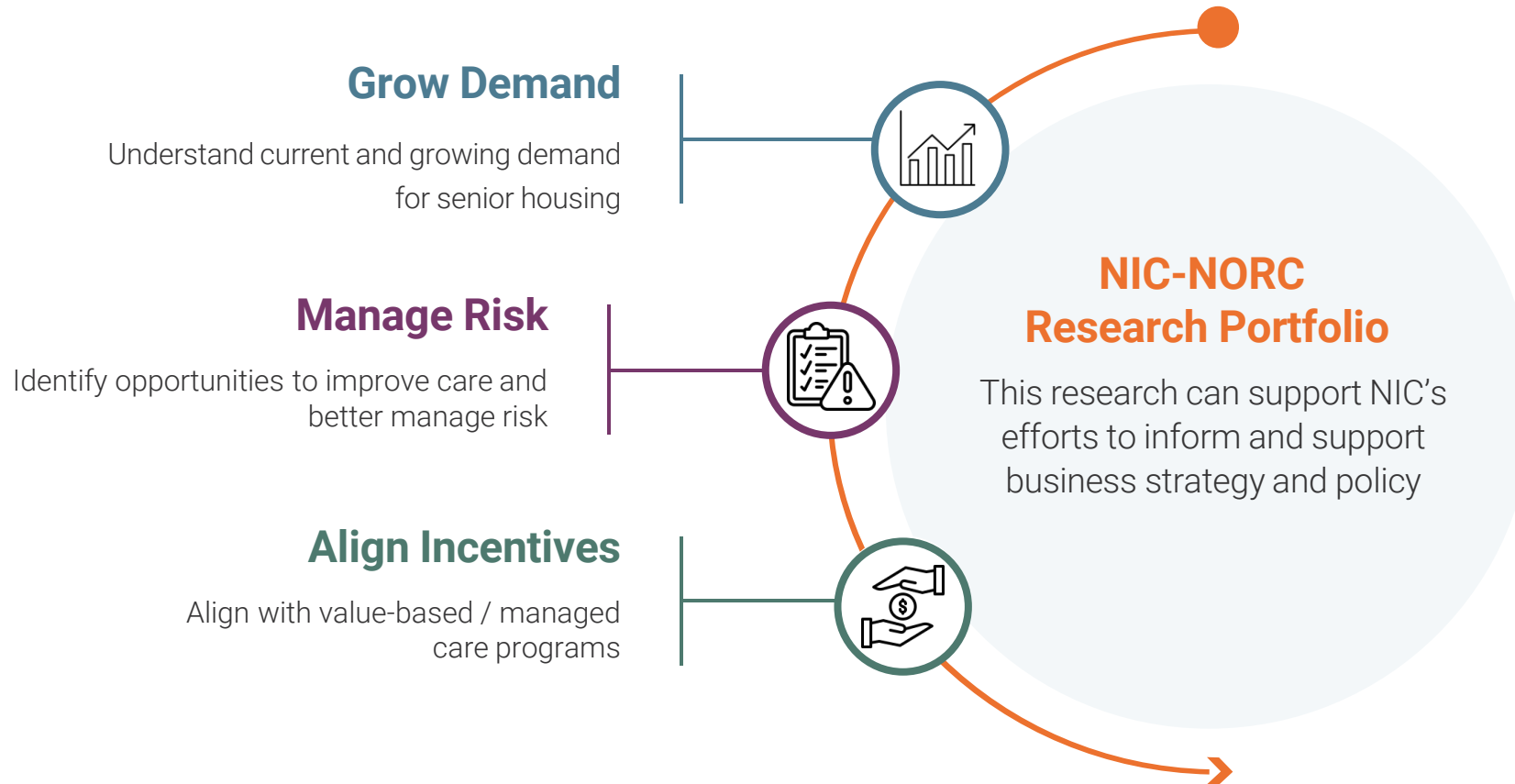




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NORC at the University of Chicago is an objective,
nonpartisan, research organization that delivers insights
and analysis decision-makers trust.

The NIC-NORC research portfolio will inform and support business strategy to improve older adults' housing and health



Executive Summary:

1. Seniors are more vulnerable to declining health outcomes prior to moving into senior housing
2. Upon moving into senior housing, vulnerability increases for a short period as residents settle into their new community before leveling off and showing improvement
3. Vulnerability to declining health outcomes, as defined by “frailty levels” of residents, is highest in communities with the most intensive available support services
4. Three of four residents in senior housing [NIC MAP properties] are vulnerable to adverse health outcomes



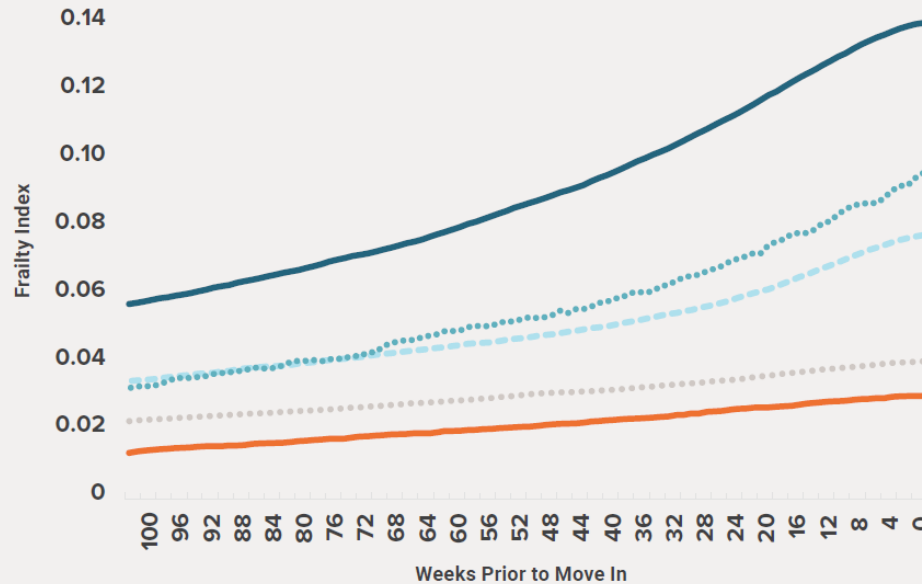
Seniors are more vulnerable to declining health outcomes in the year prior to move-in to senior housing community

Frailty accelerates ~week 22

NIC-NORC Senior Housing Research Series

- Nursing Care Community
- ⋯ Memory Care Community
- - - Assisted Living Community
- ⋯ Independent Living Community
- Continuing Care Retirement Community

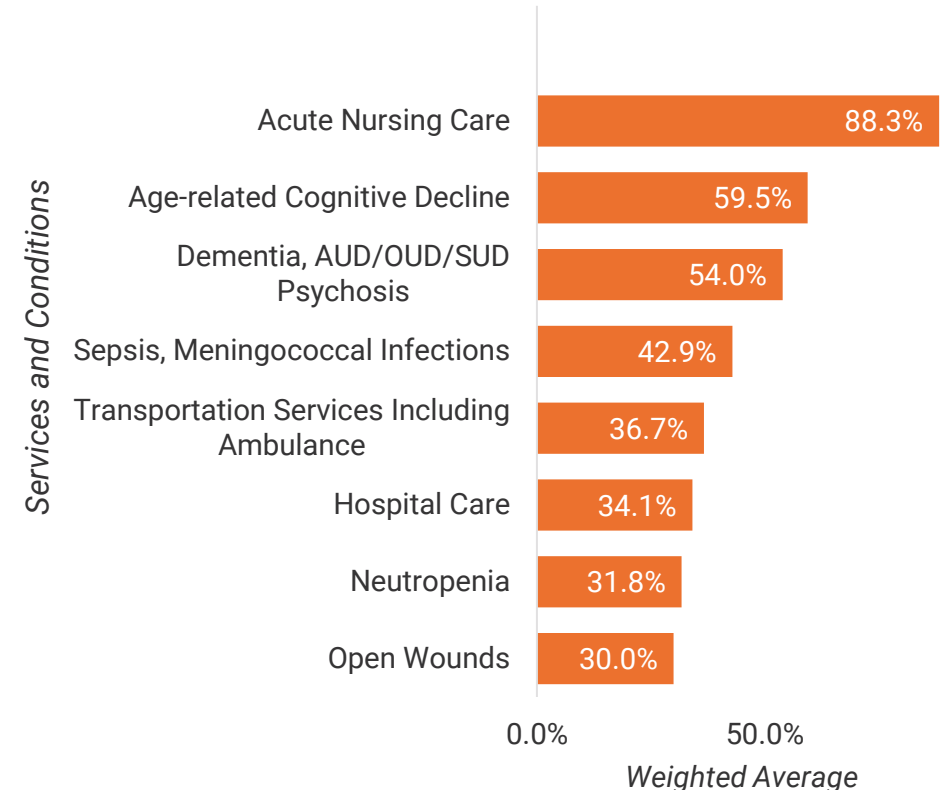
Older adults have heightened vulnerability to illness before entering senior housing



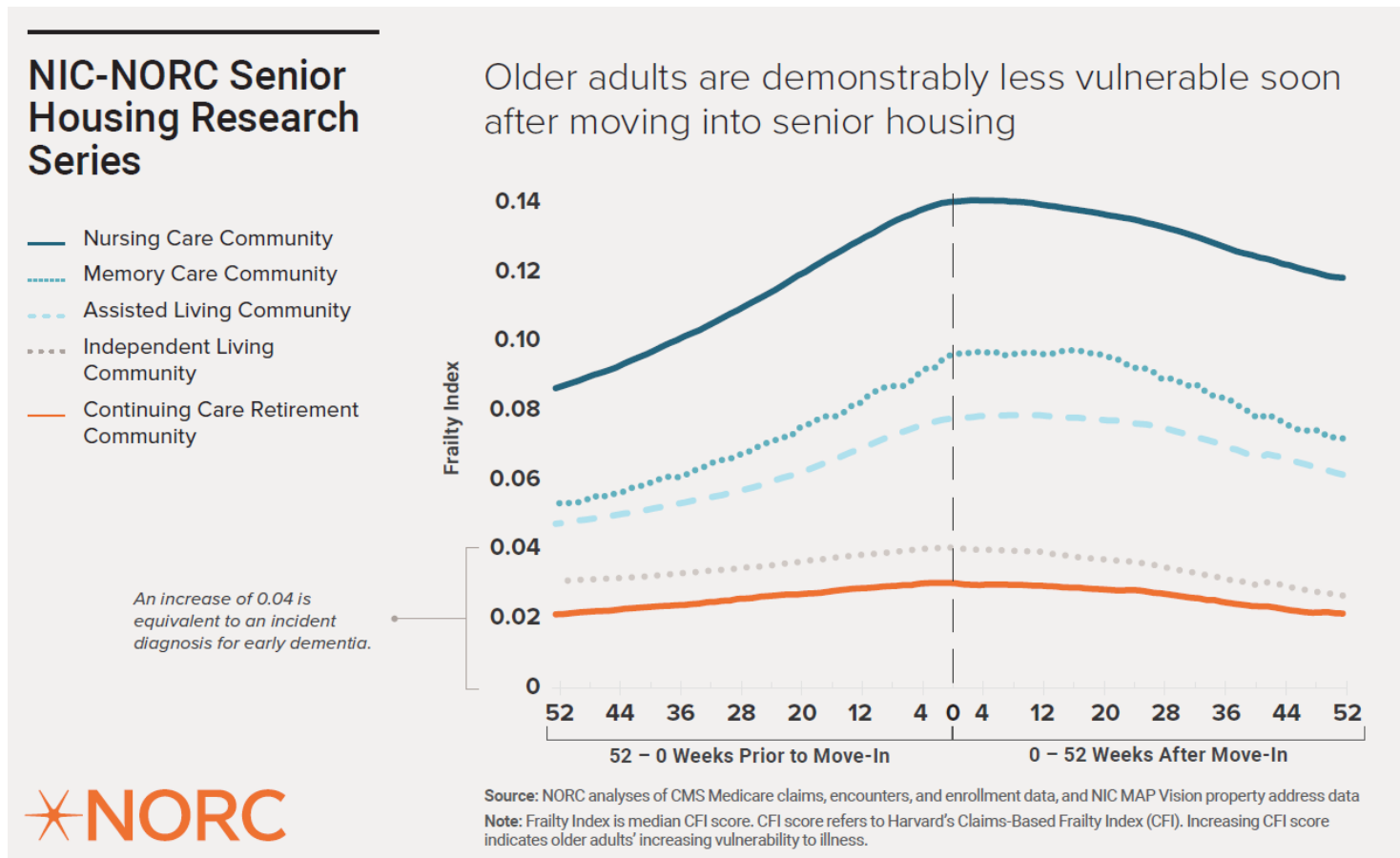
Source: NORC analyses of CMS Medicare claims, encounters, and enrollment data, and NIC MAP Vision property address data
 Note: Frailty Index is median CFI score. CFI score refers to Harvard's Claims-Based Frailty Index (CFI). Increasing CFI score indicates older adults' increasing vulnerability to illness.



Nursing and cognitive support increasingly common



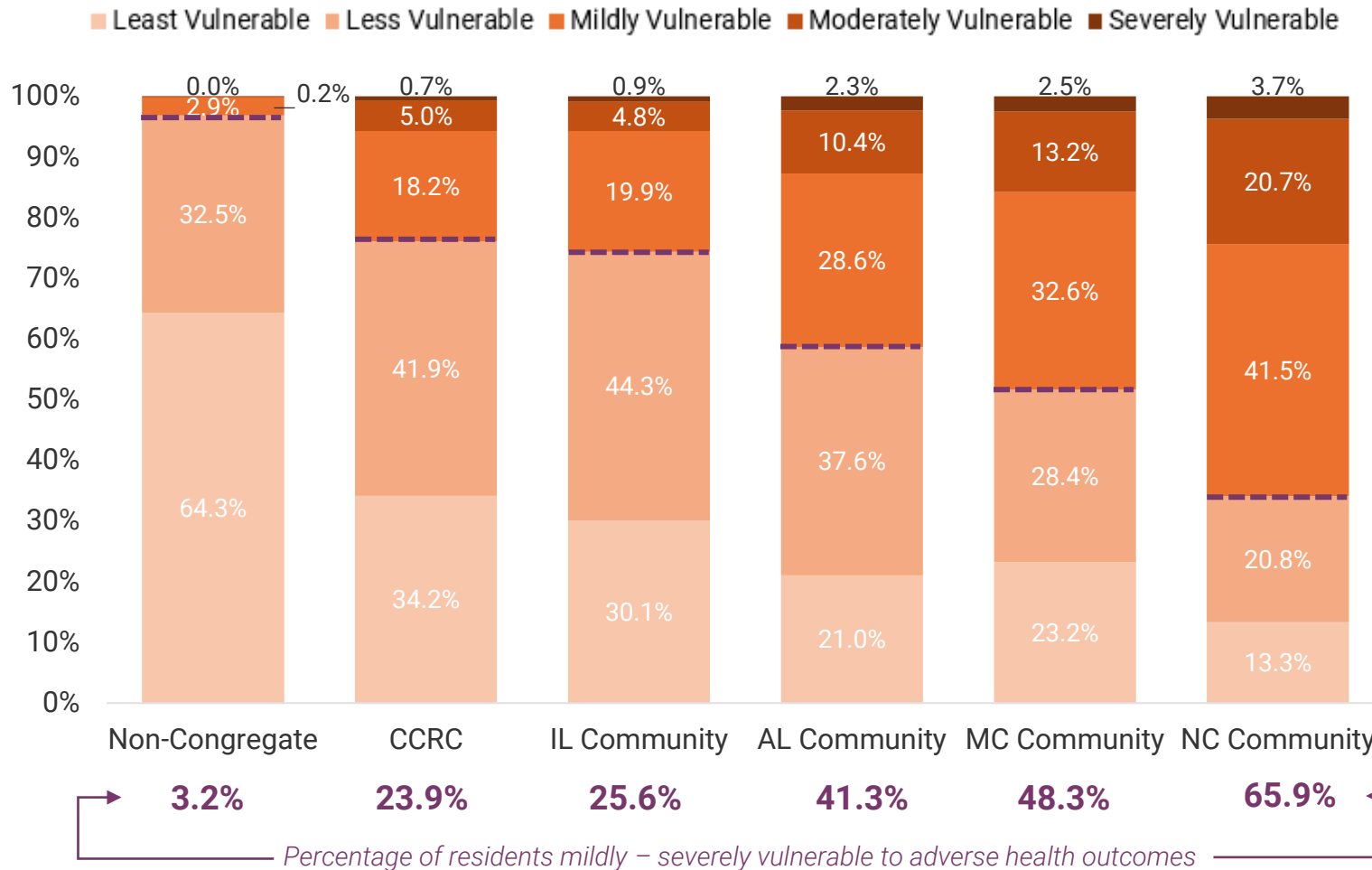
Upon moving into senior housing, vulnerability increases for a short period as residents settle into their new community before leveling off and showing improvement



Vulnerability to adverse health outcomes **levels off / decreases** approximately 3 months after move-in.

Analyses of changes in frailty in the **12 months prior** to residency move-in can be helpful to understand **demand for senior housing**.

The proportion of increasingly vulnerable residents increases with expected community acuity



Vulnerability to declining health outcomes, as defined by “frailty levels” of residents, is **highest in communities with the most intensive available support services**

Across all NIC MAP properties, 41.5% of residents are frail, as defined by mildly through severely frail.

Source: NORC analyses of CMS Medicare Claims, Encounters, and Enrollment data, and NIC MAP Vision Property Address Data

Three of four residents in senior housing—NIC MAP properties—are pre-frail or frail, and vulnerable to adverse health outcomes

Levels of Vulnerability	CFI Score ¹
Least Vulnerable	< 0.15 "Non-Frail"
Less Vulnerable	0.15 to < 0.25 "Pre-Frail"
Mildly Vulnerable	0.25 to < 0.35 "Mildly Frail"
Moderately Vulnerable	0.35 to < 0.45 "Moderately Frail"
Severely Vulnerable	≥ 0.45 "Severely Frail"



Higher claims-frailty scores are associated with²:

- Lower mean gait speed
- Weaker grip strength
- ADL and I-ADL disability³
- Hospitalization, SNF use
- Mortality

1. The Harvard CFI Scores use frailty labels where we use language that speaks to the vulnerability to adverse health outcomes as CFI score increases

2. <https://academic.oup.com/biomedgerontology/article/74/8/1271/5079800>

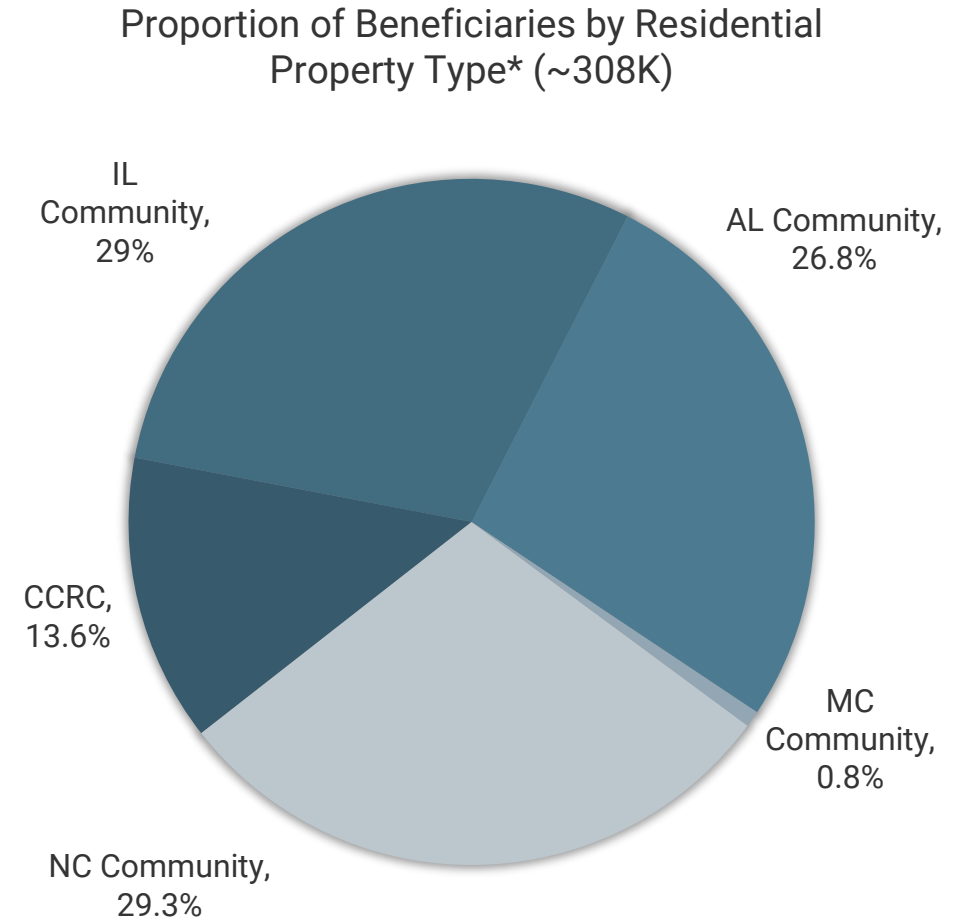
3. Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (I-ADLs)

Methodology Overview

NORC identified 495,099 Medicare (FFS & MA) beneficiaries residing at a NIC Map Vision property to define our frailty population

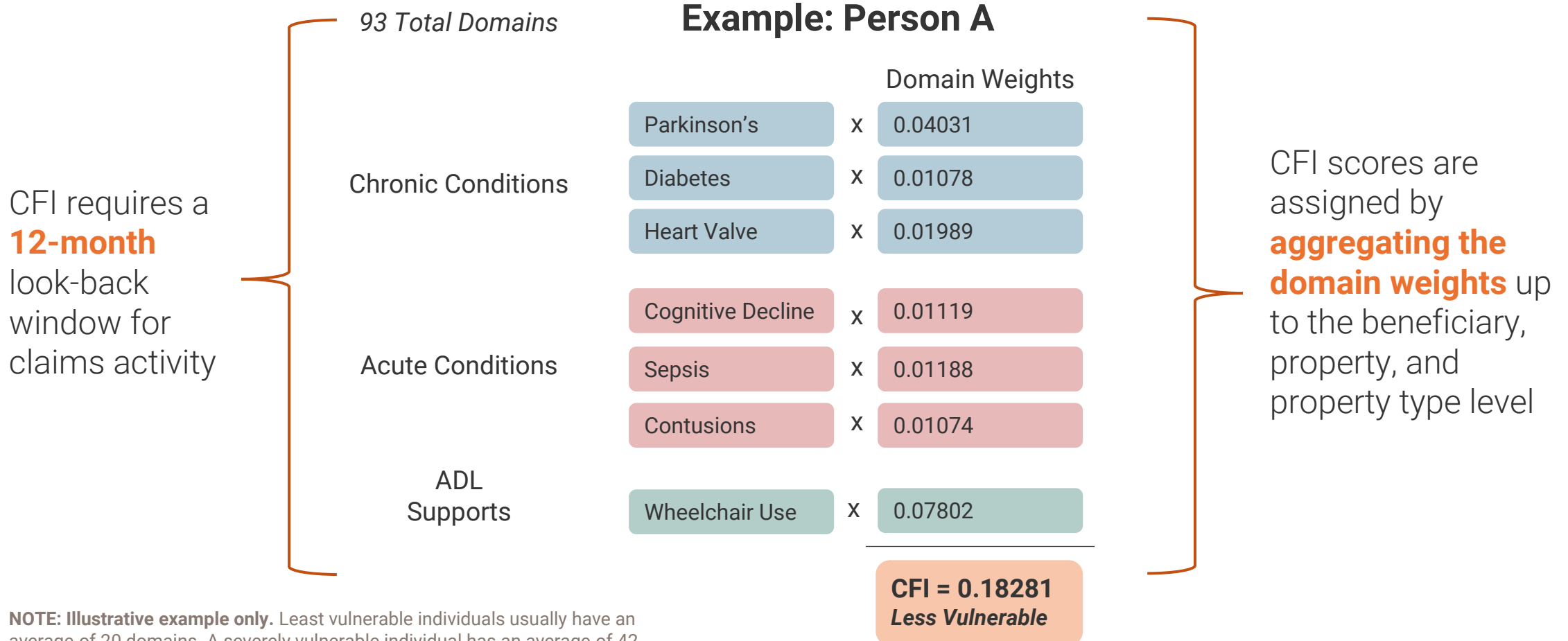
Property Type	Property Count	Zip Count
CCRC	1,056	8,794
IL Community	1,804	16,462
AL Community	4,897	17,385
MC Community	553	690
NC Community	5,299	5,720
Unknown	n/a	36,933

NORC's study uses both FFS and MA data, making our sample the most robust compared to others in the market.



* Beneficiaries with Community and Claims Data

Claims-Based Frailty Index allows researchers to analyze and use frailty as a predictor of risk, outcomes, and demand for senior housing



NOTE: Illustrative example only. Least vulnerable individuals usually have an average of 20 domains. A severely vulnerable individual has an average of 42 domains.

	Less Vulnerable	Mildly Vulnerable	Moderately Vulnerable	Severely Vulnerable
Chronic Conditions	<p>Schizophrenia, BPD, Mental/Behavioral Health</p> <p>Heart valve/A-fib</p> <p>Hypertension related diseases</p> <p>Arthritis (non spinal)</p> <p>Alcohol/Drug/Substance Use</p> <p>Asthma</p> <p>Diabetes</p> <p>Kidney diseases</p>	<p>Dementia, AUD/ODU/SUD Psychosis</p> <p>Alzheimer's, Dystonia, Movement Disorders</p> <p>Schizophrenia, BPD, Mental/Behavioral Health</p> <p>Heart valve/A-fib</p> <p>Hypertension related diseases</p> <p>Arthritis (non spinal)</p> <p>Alcohol/Drug/Substance Use</p> <p>Asthma</p> <p>Diabetes</p> <p>Kidney diseases</p>	<p>Dementia, AUD/ODU/SUD Psychosis</p> <p>Alzheimer's, Dystonia, Movement Disorders</p> <p>Diabetes</p> <p>Kidney diseases</p>	N/A
Acute Conditions	<p>Atherosclerosis/CABG</p> <p>Subarachnoid Hemorrhage/Cerebral Infarction</p> <p>Phlebitis and thrombophlebitis</p> <p>Sepsis, Meningococcal infections</p> <p>Contusions</p> <p>Urinary system disorders</p>	<p>Subarachnoid Hemorrhage/Cerebral Infarction</p> <p>Phlebitis and thrombophlebitis</p> <p>Sepsis, Meningococcal infections</p> <p>Influenza/Pneumonia</p> <p>Age-related cognitive decline</p> <p>Contusions</p> <p>Urinary system disorders</p>	<p>Open wounds</p> <p>Atherosclerosis/CABG</p> <p>Influenza/Pneumonia</p> <p>Age-related cognitive decline</p> <p>Contusions</p>	<p>Open wounds</p> <p>Sepsis, Meningococcal infections</p>
ADL Supports	<p>Transportation services including ambulance</p>	<p>Walking aids and attachments</p> <p>Nursing facility care - subsequent</p> <p>Transportation services including ambulance</p>	<p>Hospital beds and associated supplies</p> <p>Wheelchairs, components, and accessories</p> <p>Walking aids and attachments</p> <p>Accessories for oxygen delivery devices</p> <p>Diabetic footwear</p> <p>Other supplies including diabetic supplies and contraceptives</p> <p>Nursing facility care - subsequent</p> <p>Transportation services including ambulance</p>	<p>Hospital beds and associated supplies</p> <p>Wheelchairs, components, and accessories</p> <p>Accessories for oxygen delivery devices</p> <p>Diabetic footwear</p> <p>Other supplies including diabetic supplies and contraceptives</p>

NORC created vignettes of Frailty levels to illustrate the meaningful differences across the frailty levels

Least Vulnerable < 0.15

A 76-year-old woman who goes for a yearly physical and eye exam. She is moderately overweight but presents no other chronic health issues.

Less Vulnerable 0.15 to < 0.25

A 79-year-old man who goes for a yearly physical. He presents with depression, has a heart valve, asthma, and recently used an ambulance after a meningococcal infection. He is overweight and pre-diabetic.

Mildly Vulnerable 0.25 to < 0.35

A 78-year-old woman with dystonia who uses a walking aid. She presents with age-related cognitive decline and commonly has kidney infections. She has a heart valve.

Moderately Vulnerable 0.35 to < 0.45

A 76-year-old man with congestive heart failure. He uses a wheelchair, has early-stage Alzheimer's disease, and has type 2 diabetes. He uses diabetes footwear and other diabetic supplies. He has several open wounds in need of attention.

Severely Vulnerable ≥ 0.45

A 75-year-old woman with advanced Alzheimer's disease. She uses a wheelchair and was recently hospitalized for a heart attack. She has had repeated meningococcal infections and is on oxygen.

Using the domains weighted above 0.01, we looked at the **marginal difference in characteristics across each of the groups to understand the meaningful distinction between the frailty levels**. By doing so, we were able to identify the domains that best characterize escalation from one frailty level to the next.

This research is part of a series commissioned by NIC; together, they describe current health and housing needs.

Vulnerability

NORC implemented and applied Harvard's frailty index to examine distribution of frailty scores by property type and matched non-congregate residents

Access to Healthcare Providers

NORC analysis will examine access to services among residents and practice pattern differences among providers serving senior housing residents

Longevity

NORC will test whether adjusting for population differences, do residents of senior housing properties live as long or longer than similar seniors not residing in a congregate community

Health Outcomes

NORC will explore if senior housing communities' health management services yield better outcomes relative to similar beneficiaries residing in their homes


Select deliverables will be shared during the 2023 NIC Fall Conference

Select deliverables will be shared during the 2024 NIC Spring Conference



Thank you.

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