The Hilltop Institute

analysis to advance the health of vulnerable populations

The Use of Clinical and Functional Assessment Instruments

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UMBC

AN HONORS UNIVERSITY IN MARYLAND

The Goal: Perfect Information

With the vast amount of data available to state policymakers, there is amazing potential to pull individual-level information together to form a complete picture of a program population.

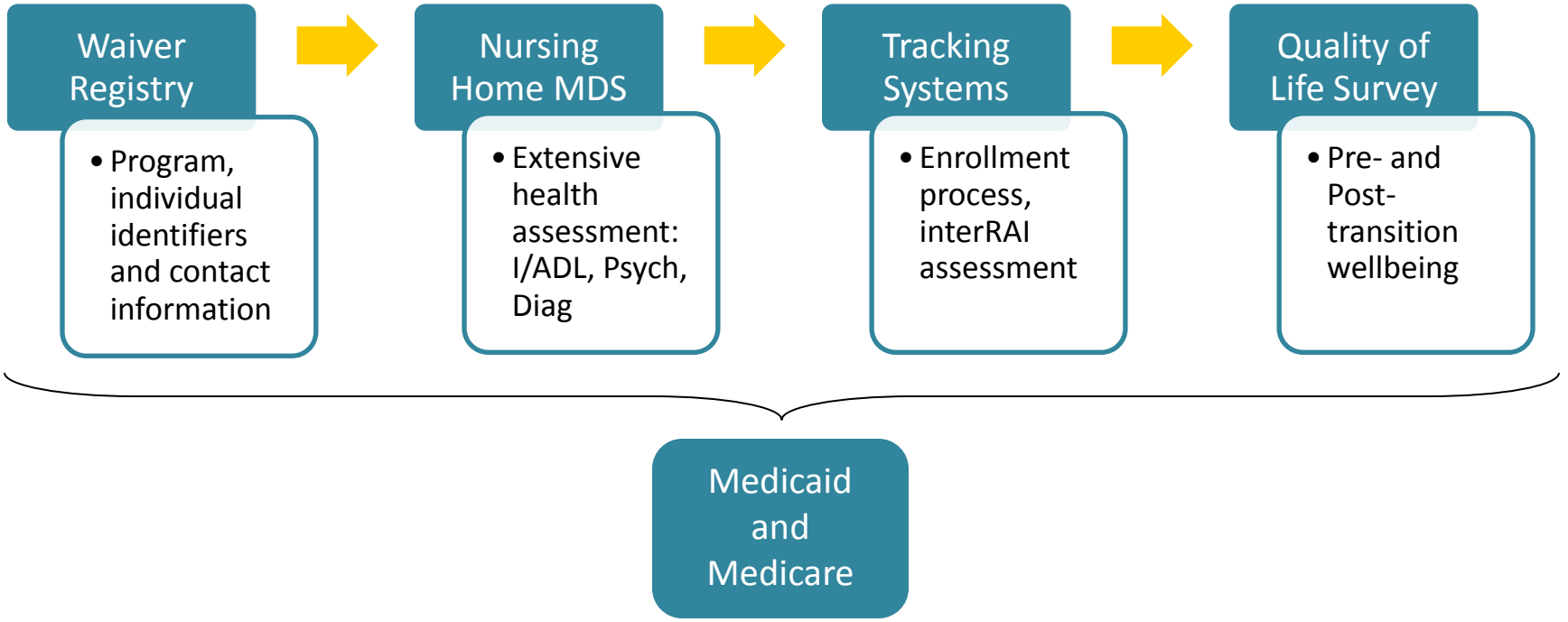
Current Sources: Minimum Data Set (MDS)

- This federally mandated tool gathers a vast array of information on the health and functional status of nursing home residents.
- Containing over 300 variables, the MDS was used to supply information on activity of daily living (ADL) deficiencies, discharge preference, length of stay, and other characteristics.

Current Sources: interRAI HC

- The chosen Medicaid core standardized assessment under Community First Choice.
- The interRAi tool covers much of the same information as MDS, but even similar questions may be worded differently, have different potential responses, or have different assessor coding instructions.

Typical Flow



Level of Care

- Formal, assessment-based LoC criteria can be automated, removing or limiting subjective influence.
- However, it is not clear that a single LoC algorithm can span both institutional and community settings due to differing response patterns.
- **Example:** Instructional and temporal differences between interRAI and MDS.

Risk

- Assessment data can be used to identify an individual's risk of a specific incident or outcome.
- The determination of relative risk from a cost perspective is key when building a capitated rate structure.
  - This is important for new enrollees because the best cost predictor (prior costs) is missing.
  - Having up-to-date data allows frequent rebasing.
- **Example:** Acuity indicators and personal care use.

Budgeting

- Program budgets can be population sensitive; upper and lower bounds could reflect different expected case mixes.
- Clients can have individual budgets that reflect their assessed care needs.
  - Pre-implementation modeling can identify individuals who would gain or lose services.
- **Example:** Determining the “baseline” and the “spread.”

About The Hilltop Institute

The Hilltop Institute at UMBC is a non-partisan health research organization—with an expertise in Medicaid and in improving publicly financed health care systems—dedicated to advancing the health and wellbeing of vulnerable populations. Hilltop conducts research, analysis, and evaluations on behalf of government agencies, foundations, and nonprofit organizations at the national, state, and local levels. Hilltop is committed to addressing complex issues through informed, objective, and innovative research and analysis.

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Correlates of Nursing Facility Occupancy

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Arlington, VA September 18, 2014

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Hendrickson Development

Purpose

Gain better understanding of factors affecting NF occupancy. Built two models and studied important zero-order correlations.

1. First model is % Medicaid Occupancy in NFs. The percentage of residents whose stay is paid for by Medicaid.

2. Second model is nursing facility population as percent of persons aged 75 and older. Why do some states have higher percentages of older persons in NFs?

Data Set

- 29 variables from AARP Rising Expectations
- 4 variables from OSCAR data
  - % Medicaid
  - % Medicare
  - % State NF occupancy
  - Total NF population by state
- 9 variables from U.S. Census
- 7 combinations of the above

Take Aways

Six-variable model accounts for 82% of variance in the state NF Medicaid Occupancy %

Four-variable model accounts for 67% of variance in state NF Population/number of Persons Age 75+

- AARP new Effective Transitions Dimension has internal coherence;
- Aging and Disability Resource Centers have an Impact;
- Cost of services and household Income have broad effect;
- Pressure Sores make a Difference, as does
- Access to Housing Alternatives instead of NF bed

These Two Models Study Different Measures of NF Occupancy

- Began by thinking that the models would be two different ways to study the effect of level of care definitions. Wrong assumption.

- Zero order correlation between Medicaid Occupancy % and NF population/persons aged 75 + is **-.106**.

Medicaid Occupancy % Model Analysis

Six-variable model accounts for 82% of variance in the state NF Medicaid Occupancy %

1. Two collinear measures of nursing home cost. NF cost as % of household income age 65+ (.369) and NF private room cost (.422) Both positively correlated with Medicaid occupancy possibly because you spend down faster in higher cost states.

Medicaid Occupancy % Model Analysis

2. Home health aides per 1000 age 65+ positively correlated with Medicaid occupancy (.377). Tendency for more home health aides in larger states with higher income and more public assistance. Home health aides per 1000 positively correlated with:

- % of adults with disability below 250% FPL receiving assistance **(.430)**;
- Medicaid LTSS use (**.687**);
- Total number of persons age 65+ **(.304)** and 75+ **(.301)**, and
- Total population in state (**.356**).

Medicaid Occupancy Model % Analysis

3. States with higher rates of employment of persons with disabilities have lower Medicaid NF occupancy, (-**.394**)

4. % of home health admissions to hospital positively correlated (.418) with high rates of Medicaid NF occupancy. Assume persons go from hospital to NFs. Any process that sends persons to hospitals will be correlated with NF occupancy.

Medicaid Occupancy % Model Analysis

5. Percent below poverty age 18+ positively correlated (.375) with Medicaid NF occupancy %.

6. Percent rural and age 65+. Negatively correlated with Medicaid NF occupancy %, (-.543). Less use of public assistance among rural and old. NF also less expensive (**-.387**) in rural areas.

Assisted Living and Residential units per 1000 Age 65+ almost made model. Negatively correlated with Medicaid NF occupancy % **(-.410**) indicating alternative housing with services has impact.

NF Population Model Analysis

Four-variable model accounts for 67% of variance in state NF Population/Age 75+

NF Population Model Analysis

1. Median Household Income Age 65+. Zero order correlation is **-.431** The less the income the higher the number of persons aged 75+ in NF. Having more income helps you buy alternative to NFs.

2. Percent of Nursing Home Residents with Low Care Needs (**.500**). The larger the population in NF the higher the percentage of low care needs.

NF Population Model Analysis

3. Percent of People with 90+ Day Nursing Home Stays Successfully Transitioning Back to the Community. Zero order correlation is **-.712.** Transition efforts associated with lower NF occupancy.

4. Percent of New Medicaid Aged/Disabled LTSS Users First Receiving Services in the Community Zero order correlation is **-.427.** The more persons receive their service in the community the fewer are in nursing homes. State LTSS programs make a difference not only to Medicaid populations but state as a whole.

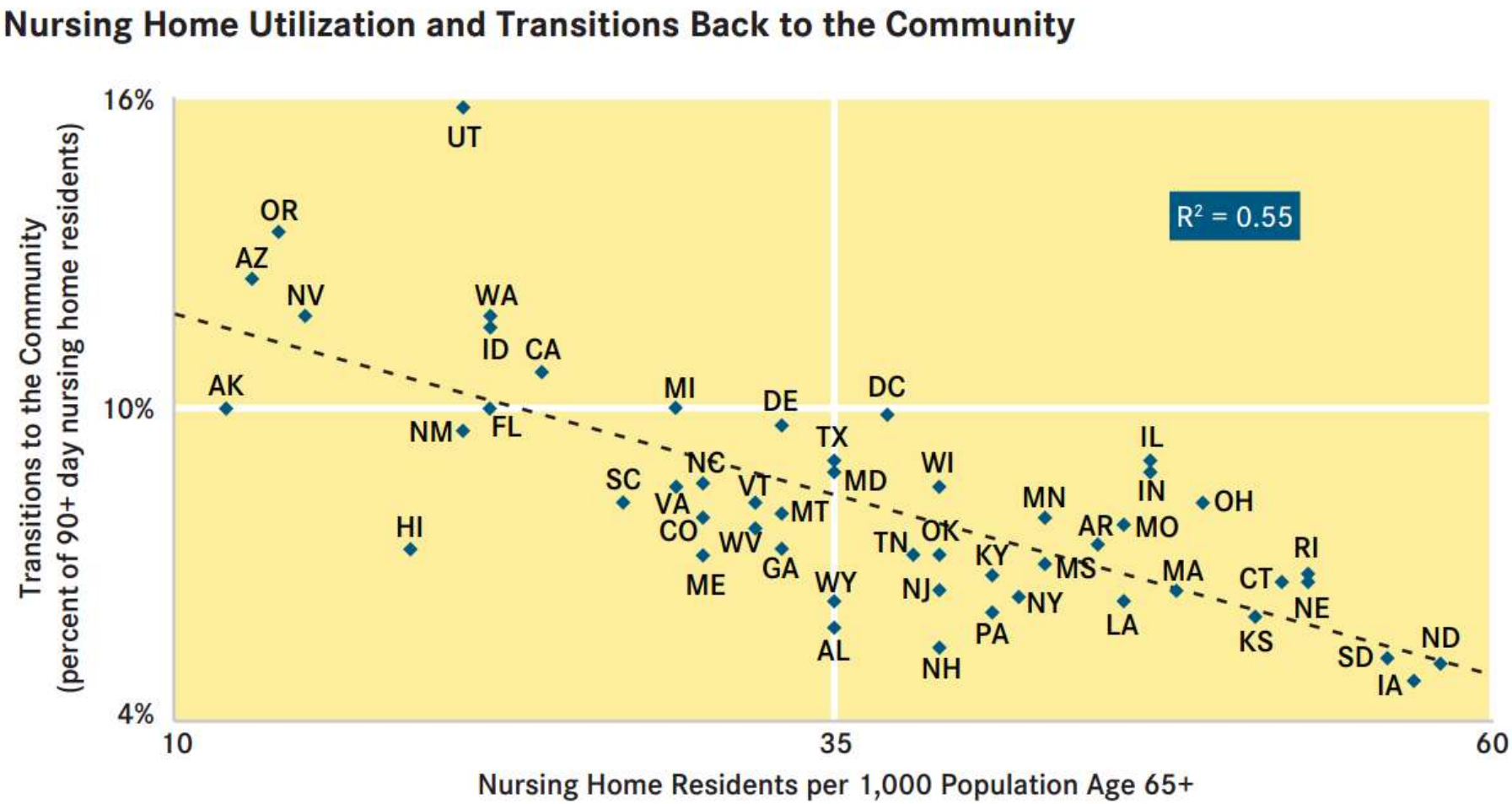
Zero Order Correlations

AARP Successful in its New Effective Transitions Dimension

Percent of New Nursing Home Stays Lasting 100 Days or More

Correlated with	Correlations
Percent of Home Health Patients with a Hospital Admission	0.721
Percent of Long-Stay Nursing Home Residents Hospitalized within a Six-Month Period	0.67
Percent of Nursing Home Residents with Moderate to Severe Dementia with One or More Potentially Burdensome Transitions at End of Life	0.603

Transitions back to the Community Strongly Correlated with Low Nursing Home Use



Data: Transitions to the Community: 2009 Chronic Conditions Warehouse Timeline File; Nursing Home Utilization: 2010 *Across the States, 2012.*
Source: State Long-Term Services and Supports Scorecard, 2014.

Importance of Aging and Disability Resource Centers

Aging and Disability Resource Center Functions (Composite Indicator, scale 0-70)	-0.773
Nursing Facility Population/Persons aged 65+	

Cost and Income's Broad Effects

Percent Below Poverty Level Age 18+

Correlated with	Correlations
30 Hours/Week of Home Care	-0.725
Percent of Nursing Home Residents with Moderate to Severe Dementia with One or More Potentially Burdensome Transitions at End of Life	0.659

Pressure Sores Make a Difference

Percent of High-Risk Nursing Home Residents with Pressure Sores

Correlated with	**Correlations**
Percent of Long-Stay Nursing Home Residents Hospitalized within a Six-Month Period	0.648
Percent of Nursing Home Residents with Moderate to Severe Dementia with One or More Potentially Burdensome Transitions at End of Life	0.741

Access to Housing Alternatives

Assisted Living and Residential Care Units per 1,000 Population Age 65+

Correlated with	**Correlations**
Percent of Long-Stay Nursing Home Residents Hospitalized within a Six-Month Period	-0.605
Percent of Medicaid Aged or with Disabilities LTSS Users First Receiving Services in the Community	0.336
30 Hours/Week of Home Care	0.453

Take Aways – Summary

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References

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- Weiner et. al. Why nursing home utilization rates are declining, http://nasuad.org/sites/nasuad/files/hcbs/files/160/7990/SCGNursing.pdf
- Hendrickson and Kyzr-Sheeley Determining Nursing Home Eligibility, http://nasuad.org/sites/nasuad/files/hcbs/files/137/6814/Nursing_Facility_Level_of_Care_FINAL.pdf

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- For copy of Presentation go to http://hendrickson-consulting.com/publications/