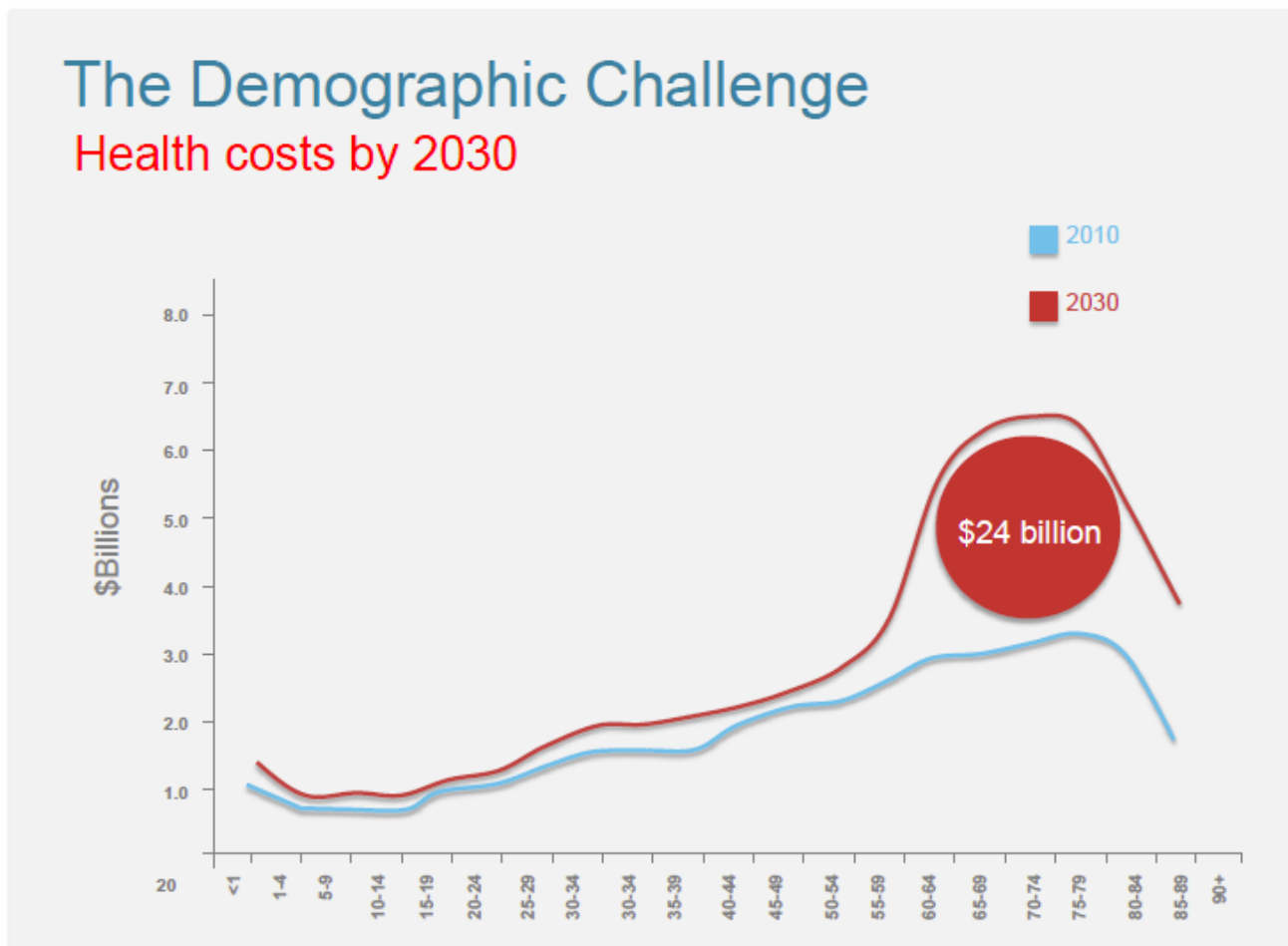


Strategic Issues in Long Term Care



Colin Preyra, PhD

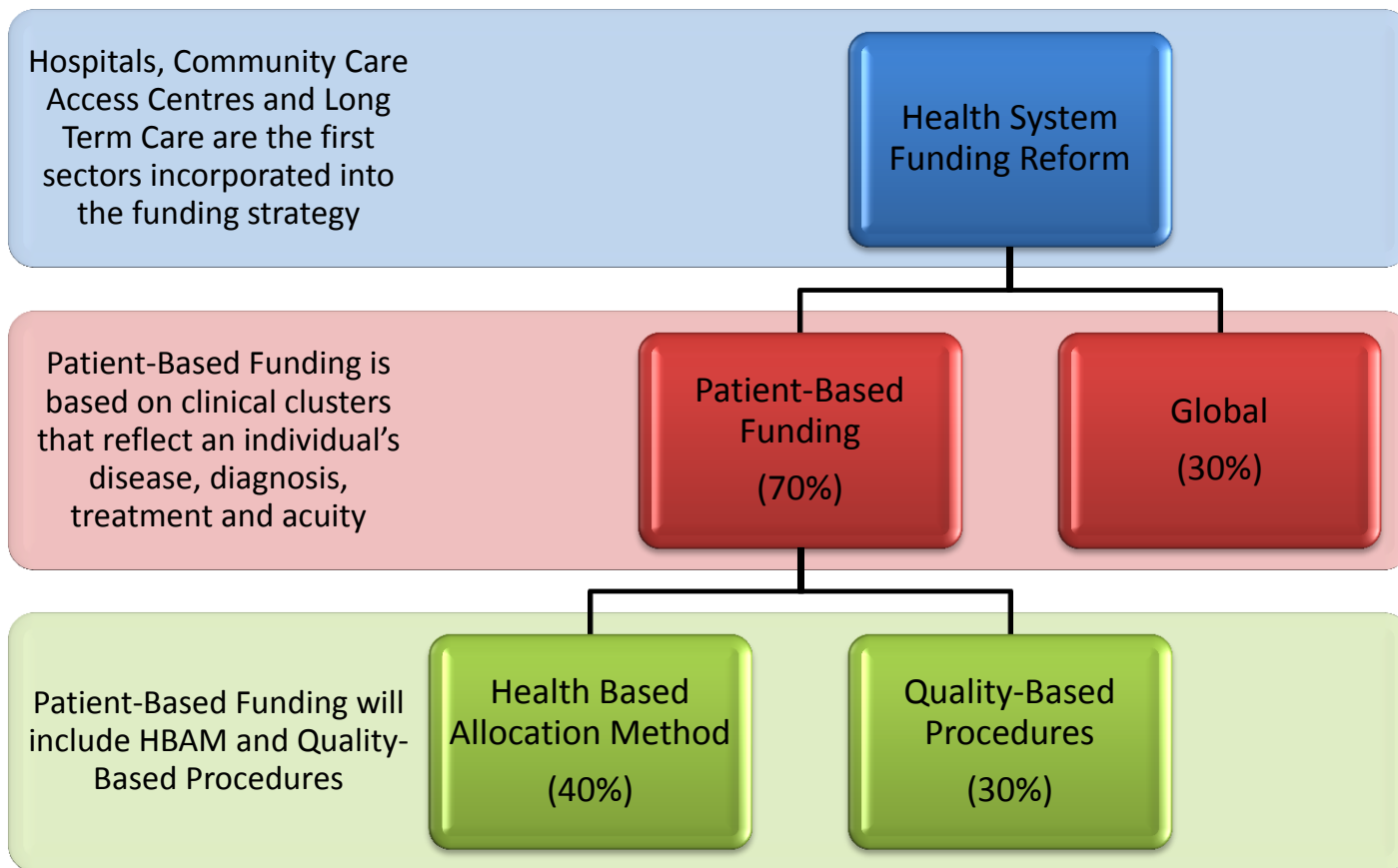
1. **Funding Reform and Integrated Care**
2. **Quality: Measurement, Reporting and Improvement**
3. **Improving Case Mix Measurement**
4. **Future Service Mix in LTC Homes**
 - **Role of Supportive Housing**
 - **Short Stay**
 - **LTC role in Redressing HBAM Service Variance**
 - **End of Life Care**
5. **Regional and Home Characteristics**
6. **Future Planning**
7. **Enhancing Services in Long Term Care: Sketching a Business Case**



Helen Angus, 2012. A Plan to Transform the Ontario Health Care System
Ontario Ministry of Health and Long-Term Care

The Provincial deficit is \$15 billion but is aimed for surplus in five years

The Health System Funding Reform comprises two core components that accelerate the transition from a provider-centred funding model towards a patient-centered funding model, where funding is based on services



| QBP | 2010/11 - 2011/12 Ontario Admissions | | | |
|---------------------------------------|--------------------------------------|-----------|------------------|----------------------------|
| | Total | % Age 75+ | % To or From LTC | % Residents with Diagnosis |
| Congestive Heart Failure | 42,866 | 65% | 7% | 12% |
| Chronic Obstructive Pulmonary Disease | 46,771 | 51% | 7% | 14% |
| Stroke - Hemorrhage | 3,012 | 53% | 7% | |
| Stroke - Ischemic | 17,029 | 54% | 6% | |
| Stroke - Transient Ischemic Attack | 5,785 | 57% | 3% | 21% |
| Stroke - Unspecified | 4,862 | 60% | 7% | |

Source: 2010/11 - 2011/12 DAD

- these are common conditions in long term care homes
- LTC care is an important component of the multidisciplinary/multisite care of these residents
- pharmacologic and non pharmacologic management in homes, including rehabilitation and other focused programs

“About one per cent of Ontario’s population accounts for 49 per cent of hospital and home care costs, and 10 per cent of the population accounts for 95 per cent of such costs, according to a 2010 study by the Canadian Health Services Research Group (CHSRG).” Commission on the Reform of Ontario’s Public Services. 2012.

Recommendation 5-17: Optimize the HBAM data set to identify and profile each LHIN’s high-use population to understand differences in treatment practice in each LHIN and apply best practices across the province. Use HBAM data to build specific strategies for co-ordinating health care for each high-use clinical group, for example: end-of-life care, avoidable complications, and care for those with mental health and addictions issues.

About Health Links

Ontario is improving care for seniors and others with complex conditions through Health Links. This innovative approach brings together health care providers in a community to better and more quickly coordinate care for high-needs patients

Health Link Region Population Health Profile

Describe the region or catchment area of your Health Link. Attach any maps or other supporting documentation as an appendix.

Identify how many Ontarians live within your Health Link region. Since the initial focus of Health Link activities will be on the one to five per cent of the population with complex health conditions and therefore extensive health service needs, estimate the number of these individuals in your region.

If acute care costs alone were reduced by 10% for the top 1% of spenders, this could amount to \$360 million in savings. If LTC costs alone were reduced by 10% for this top 1%, \$177 million could be saved.

High Use Seniors in a LHIN, 2011/12

| Age | Seniors Admitted to Hospital | Seniors with ED Visits | Admissions | Hospital Days | | Average Comorbidities per Admission | % Seniors Died in Hospital | % Seniors to or from LTC/CCC | % Seniors to HC |
|-------------|------------------------------------|------------------------------|------------|---------------|-----------------------|---|----------------------------------|------------------------------------|--------------------|
| | | | | Total | Average per Senior | | | | |
| 65-69 | 784 | 680 | 1,922 | 27,442 | 35.0 | 2.7 | 24% | 12% | 38% |
| 70-74 | 870 | 748 | 2,190 | 37,476 | 43.1 | 2.9 | 27% | 15% | 38% |
| 75-79 | 968 | 861 | 2,337 | 40,479 | 41.8 | 3.0 | 29% | 21% | 33% |
| 80-84 | 1,067 | 951 | 2,526 | 45,920 | 43.0 | 3.0 | 29% | 27% | 34% |
| 85-89 | 767 | 704 | 1,784 | 36,885 | 48.1 | 3.0 | 34% | 33% | 30% |
| 90+ | 444 | 411 | 951 | 22,817 | 51.4 | 3.0 | 34% | 33% | 27% |
| All Seniors | 4,900 | 4,355 | 11,710 | 211,019 | 43.1 | 2.9 | 29% | 23% | 34% |

Source: 2011/12 DAD, NACRS

- 7,604 people used 50% of the LHIN's inpatient hospital resources in 2011/12. We identified the 4,900 75+ seniors in this group as the high use senior population in the LHIN.
- The above table shows the characteristics of these high use seniors:
 - Their average hospital resource use is 43 days
 - 29% of high user seniors died in hospital, 23% used CCC/LTC

Historical Resource Use, High Use Seniors in a LHIN

High Use Seniors in 2011/12

| Age Cohort | % Seniors to or from LTC, CCC | | | % Seniors to Home Care | | |
|-------------|-------------------------------|------------|-----------|------------------------|-------|-------|
| | 2011/12 (t) | t - 1 | t - 2 | 2011/12 (t) | t - 1 | t - 2 |
| 65-69 | 12% | 3% | 4% | 38% | 32% | 35% |
| 70-74 | 15% | 11% | 4% | 38% | 33% | 28% |
| 75-79 | 21% | 10% | 6% | 33% | 33% | 34% |
| 80-84 | 27% | 12% | 12% | 34% | 35% | 24% |
| 85-89 | 33% | 12% | 9% | 30% | 38% | 37% |
| 90+ | 33% | 11% | 5% | 27% | 28% | 48% |
| All Seniors | 23% | 10% | 7% | 34% | 33% | 33% |

*t-1 refers to 2010/11 and t-2 refers to 2009/10

Source: 2009/10 - 2011/12 DAD, NACRS

- High use seniors are more likely to be discharged to LTC/CCC over time. They are increasingly frail

The US Center for Medicare and Medicaid Services publicly reports quality indicators in nursing homes since 1998, through the *Nursing Home Compare website*

There is one overall 5-star rating for each nursing home, and a separate rating for each of the following three sources of information:

- Health Inspections
- Staffing
- Quality Measures: has information on 9 different physical and clinical measures for nursing home residents

The evidence is not strong so far that consumers use the information to choose providers, but this is expected to change over time. The evidence so far points to providers paying attention to the fact that this data is going to be published, and some impact on quality outcomes have been reported (Konetzka, 2006 & 2010; Werner, 2009)

Health Quality Ontario (HQO) recently launched a Long-Term Care public reporting website

This system is based on five attributes, defined as: accessible, effective, safe, appropriately resourced, and focused on population health.

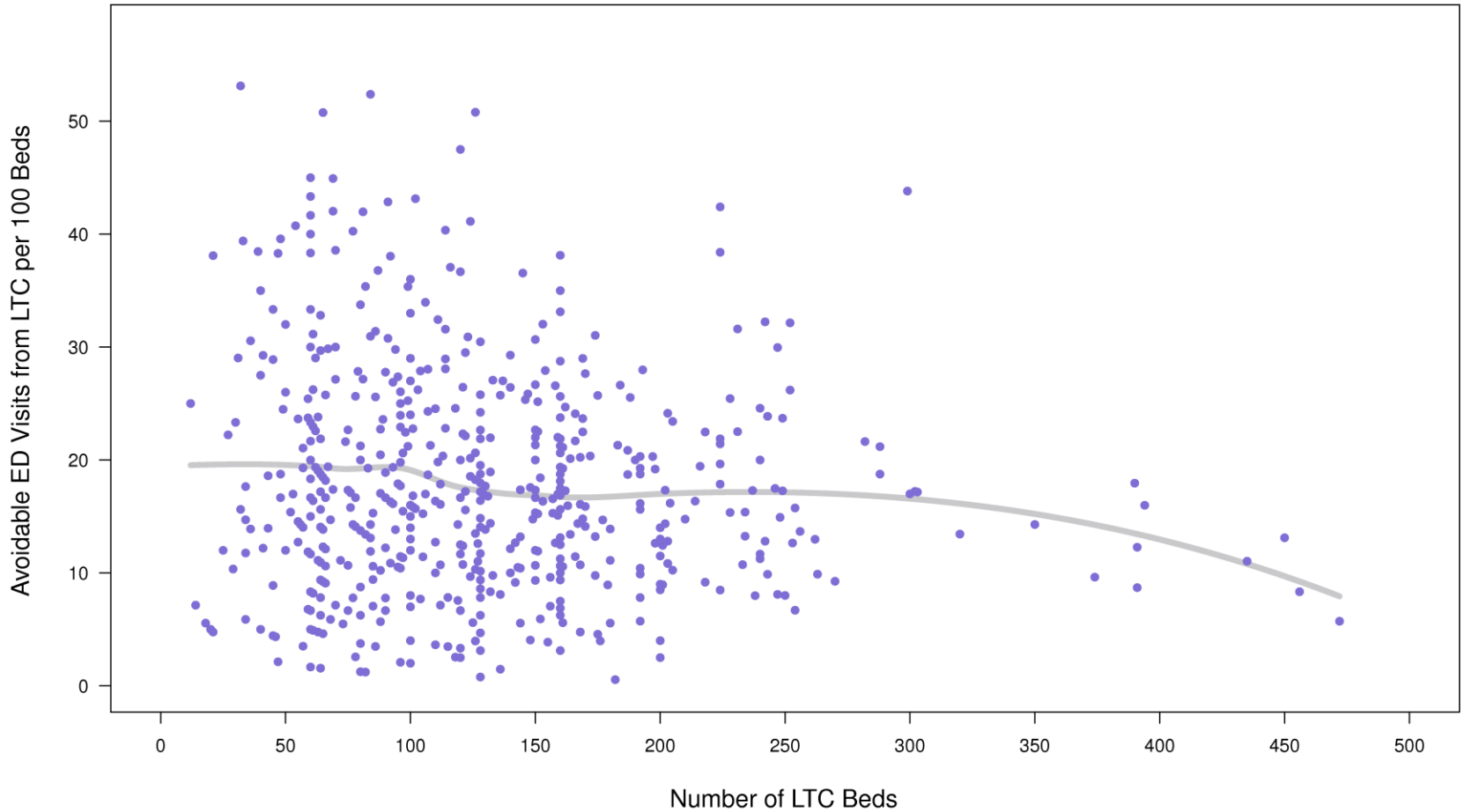
It reports provincially aggregated wait times, quality indicators in nine categories (incontinence, ADL, cognitive function, pain, falls, pressure ulcers, physical restraints, medication safety, and infections), ED visits, and provincially aggregated staffing levels.

Only four quality indicators are reported at the individual LTCH facility level:

- Falls
- Incontinence
- Pressure ulcers
- Physical restraints

Case mix adjustment is important for fair comparisons

Avoidable ED Visits from LTC per 100 Beds by Home Size



| <i>Most Common Potentially Avoidable Hospitalizations for Senior ED Patients</i> | <i>Ontario % Total Visits from LTC</i> |
|--|--|
| Injury | 20% |
| Injury: Open Wounds : Head Neck & Trunk | 5% |
| Injury: Hip Fracture | 4% |
| Injury: Trauma to Skin & Subcutaneous Tissue | 3% |
| Injury: Fracture Sprain Strain & Dislocation | 3% |
| Injury: Traumatic Injury : MSK | 1% |
| Injury: Open Wounds : Extremities | 1% |
| Injury: Fracture of Neck Lumbar Spine Pelvis | 1% |
| ADE: Possible | 9% |
| Urinary Tract Infections Including Pyelonephritis | 7% |
| Heart Failure | 4% |
| Dehydration and Gastroenteritis | 2% |
| Chronic Obstructive Pulmonary Disease | 3% |
| Septicemia or Severe Sepsis | 1.7% |
| Visits with any ASC | 52% |
| All ED Visits | |

fiscal years: 2009/10
- 2011/12

- Injuries are the most common cause of avoidable ED visits in senior patients in Province

| <i>10 Most Common Minor Therapeutic Procedures for Senior ED Patients</i> | <i>Ontario</i> |
|---|------------------------------------|
| | <i>% Total Visits from LTC</i> |
| Suture of Skin and Subcutaneous Tissue | 32% |
| Bladder Procedures | 24% |
| Therapeutic Intervention Body NEC | 9% |
| Vascular/Venous, Other | 10% |
| Ear Nose and Throat | 4% |
| Respiratory Procedures | 11% |
| Gastric Tube : Management & Removal | 2% |
| Nasogastric Aspiration | 2% |
| Total ED Visits with a Minor Therapeutic Procedure | |

fiscal years: 2009/10 -
2011/12

- Sutures and urinary catheter procedures are the most common minor therapeutic procedure received by senior patients visiting the emergency department

| Characteristic | within +/- 1 year |
|---|-------------------|
| Percent of Residents with Inpatient Admission | 60% |
| Acute Days per Resident | 10 |
| ALC Days per Resident | 9.6 |
| Mortality Rate | 37% |

Long Term Care residents are typically multimorbid and shift between acute and sub acute health status

| <i>Clinical Setting</i> | <i>Classification System</i> |
|--|--|
| Acute Inpatient | HBAM Inpatient Groups (HIG) |
| Emergency Department Inpatient | Comprehensive Ambulatory Care Classification System (CACCS) |
| Rehabilitation Complex | Rehabilitation Patient Groups (RPG) |
| Continuing Care | Resource Utilization Group III (44-Group) |
| Long Term Care Inpatient Mental Health | Resource Utilization Group III (34-Group) System for Classification of In-Patient Psychiatry (SCIPP) |

- improve case mix adjustment
- compare cost in LTC with other settings, including cost savings of avoidance
- MEDPAC recommends use of hospital data to inform case mix adjustment
- RUG criticized for not accurately targeting payments for nontherapy ancillary (NTA) services, such as drugs, and for encouraging the provision of unnecessary therapy services
- CMS move from 44 to 53 RUG model (9 new groups for extensive services and rehabilitation)
- *Most residents are candidates for nursing-based rehabilitative care that focuses on maintaining and expanding self involvement in ADLs (CMS RAI Manual)*

Diagnoses and Comorbidities; Sample

ALZHEIMER'S DISEASE /DEMENTIA
 RESPIRATORY INFECTIONS & INFLAMMATIONS
 WEIGHT LOSS
 HIP FRACTURE
 KIDNEY & URINARY TRACT INFECTION
 FRACTURE OF NECK LUMBAR SPINE PELVIS : NEC
 DEGENERATIVE NERVOUS SYSTEM DISORDERS
 SEPTICEMIA OR SEVERE SEPSIS
 ORGANIC DISTURBANCES
 SIMPLE PNEUMONIA & PLEURISY
 DIABETES : WITH COMPLICATIONS
 FLUID & ELECTROLYTE DISORDERS
 MAJOR INTESTINAL INFECTIONS-BACTERIAL
 STROKE : UNSPECIFIED
 ISCHEMIC STROKE
 FRACTURE SPRAIN STRAIN & DISLOCATION:
 EXCEPT FEMUR HIP PELVIS & THIGH

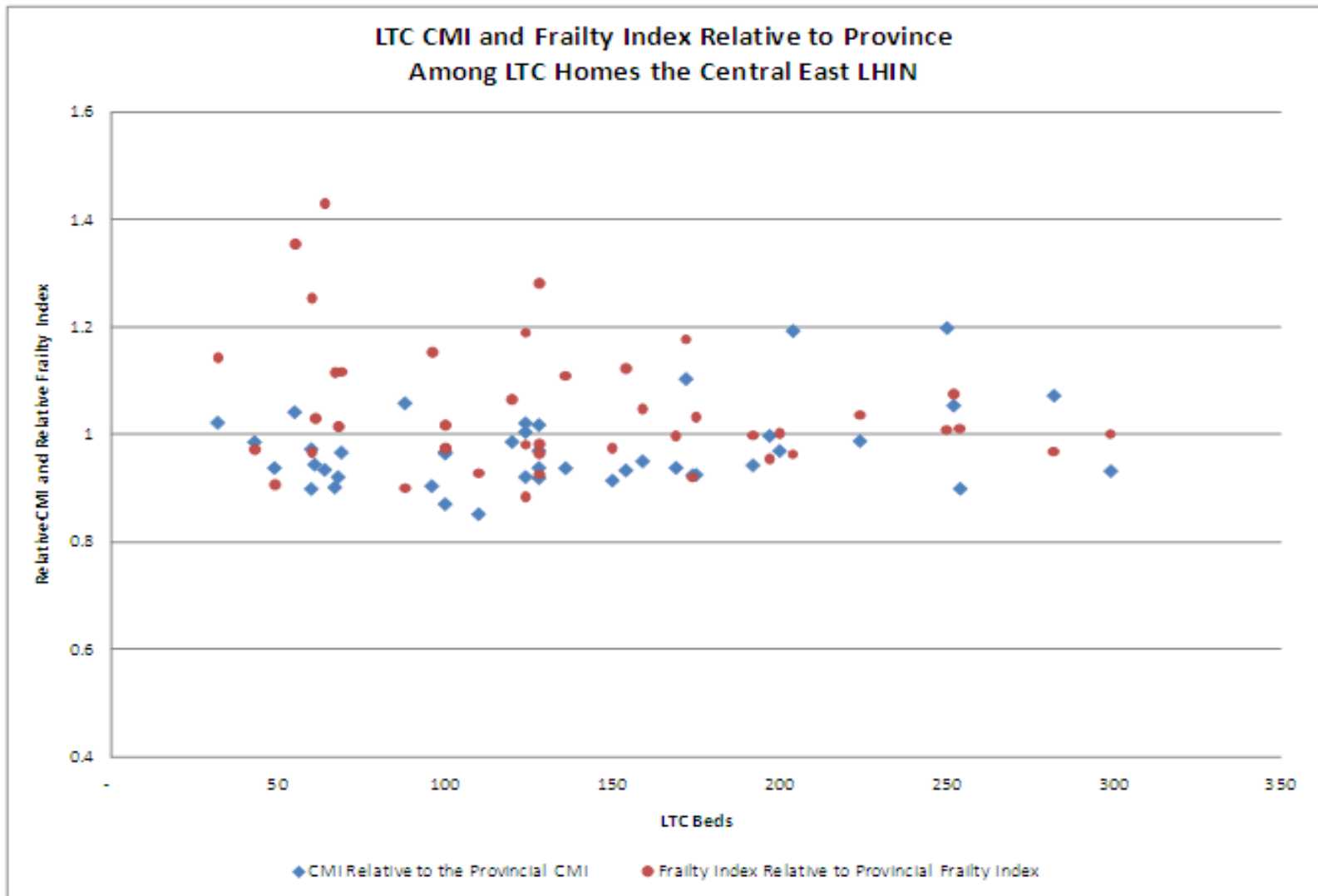
PATHOLOGICAL FRACTURE
 OTHER NERVOUS SYSTEM DISORDERS
 OTHER SIGNS & SYMPTOMS
 SEIZURES & HEADACHES
 RENAL DISEASE
 CELLULITIS
 BACK INJURIES
 INTRACRANIAL HEMORRHAGE
 TRAUMA TO SKIN & SUBCUTANEOUS TISSUE
 INTRACRANIAL INJURY
 GI BLEEDING
 DIABETES WO OR W MINOR COMPLICATION
 ATHEROSCLEROSIS : PERIPHERAL & OTHER
 CHRONIC PULMONARY DISEASE
 HEART FAILURE

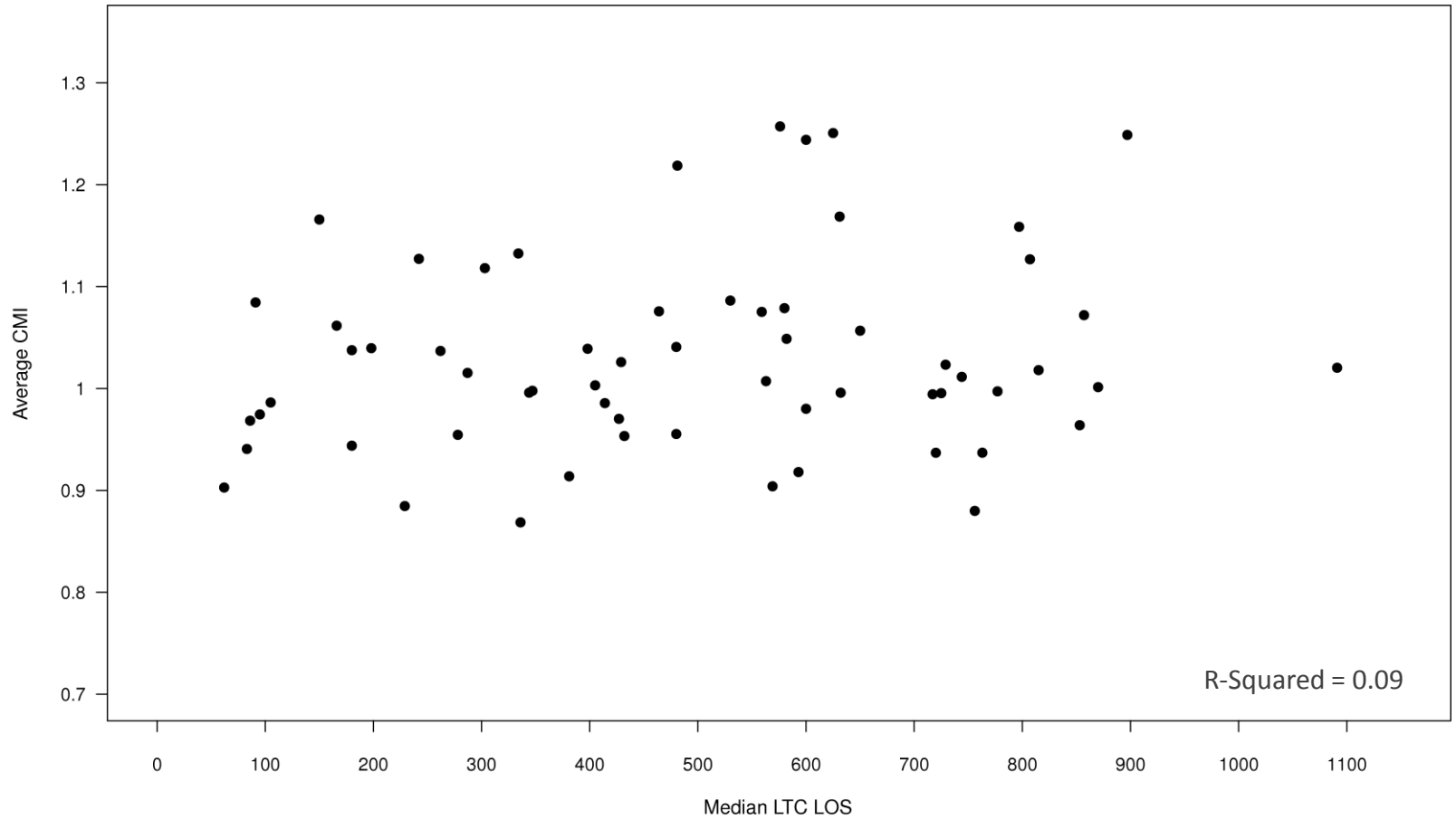
| <i>Number of Comorbid Conditions</i> | <i>Age</i> | <i>Frail /At Risk</i> | <i>Number of Comorbid Conditions</i> | <i>Age</i> | <i>Frail /At Risk</i> |
|--------------------------------------|------------|-----------------------|--------------------------------------|------------|-----------------------|
| 4+ | 90+ | Most Likely | 3 | 65-69 | Less Likely |
| 3 | 90+ | Most Likely | 2 | 70-74 | Less Likely |
| 2 | 90+ | Most Likely | 1 | 75-79 | Less Likely |
| 4+ | 85-89 | Most Likely | 0 | 80-84 | Less Likely |
| 1 | 90+ | Very Likely | 4+ | <=59 | Less Likely |
| 3 | 85-89 | Very Likely | 3 | 60-64 | Less Likely |
| 4+ | 80-84 | Very Likely | 2 | 65-69 | Less Likely |
| 2 | 85-89 | Very Likely | 1 | 70-74 | Less Likely |
| 0 | 90+ | Very Likely | 2 | 60-64 | Less Likely |
| 3 | 80-84 | Very Likely | 0 | 75-79 | Less Likely |
| 4+ | 75-79 | Very Likely | 3 | <=59 | Less Likely |
| 1 | 85-89 | Very Likely | 1 | 65-69 | Less Likely |
| 2 | 80-84 | Very Likely | 1 | 60-64 | Least Likely |
| 4+ | 70-74 | Likely | 0 | 70-74 | Least Likely |
| 3 | 75-79 | Likely | 2 | <=59 | Least Likely |
| 0 | 85-89 | Likely | 0 | 65-69 | Least Likely |
| 4+ | 65-69 | Likely | | | |
| 1 | 80-84 | Likely | | | |
| 2 | 75-79 | Likely | | | |
| 4+ | 60-64 | Likely | | | |
| 3 | 70-74 | Likely | | | |

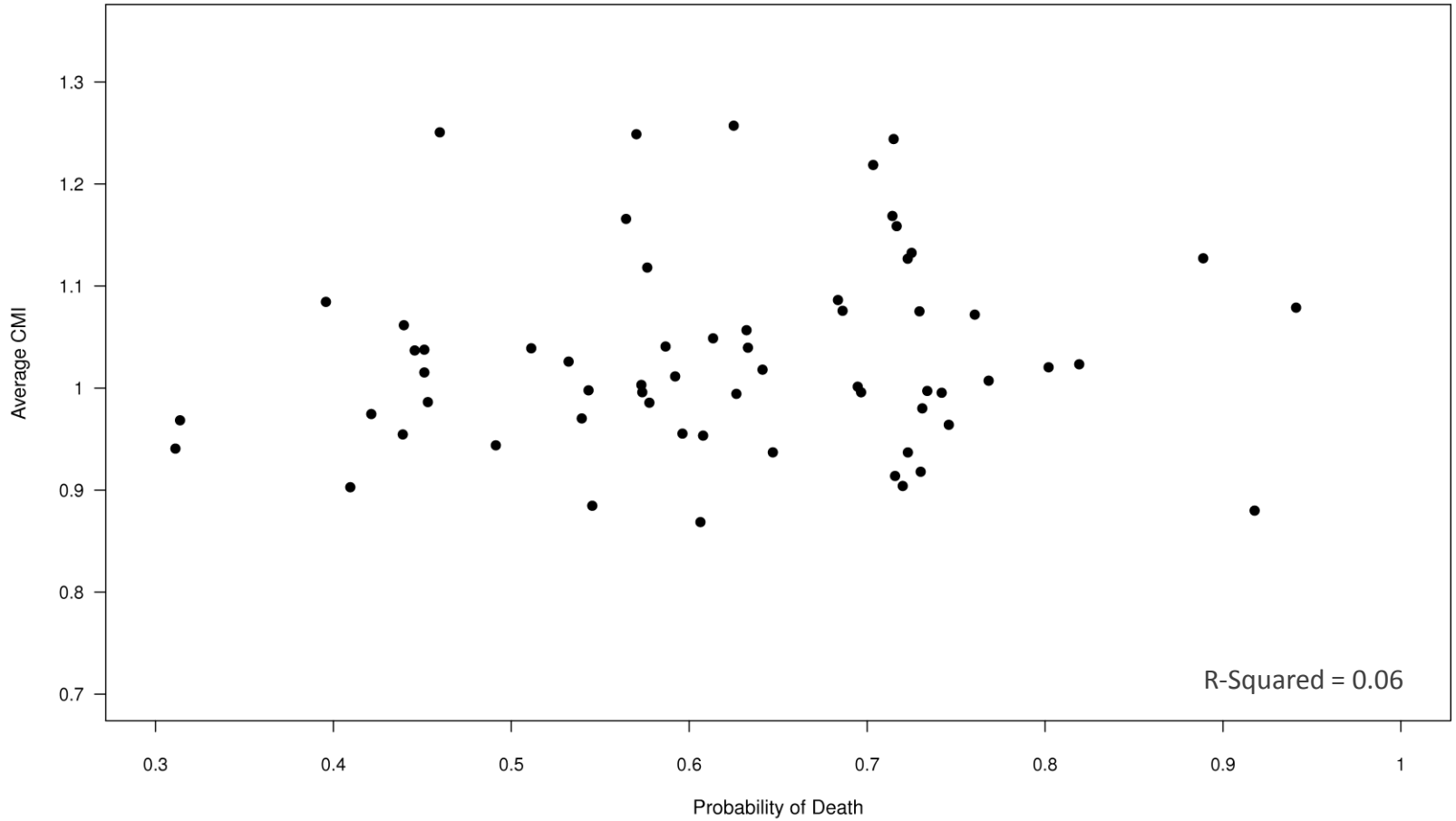
| <i>Frail/At Risk</i> | <i>Inpatient Discharges Per Year</i> | <i>Probability LTC</i> |
|----------------------|--------------------------------------|------------------------|
| Least Likely | 102,458 | 2% |
| Less Likely | 170,202 | 5% |
| Likely | 80,690 | 11% |
| Very Likely | 88,675 | 18% |
| Most Likely | 25,798 | 28% |



LTC CMI and Frailty Index Relative to Province among LTC Homes in the CE LHIN







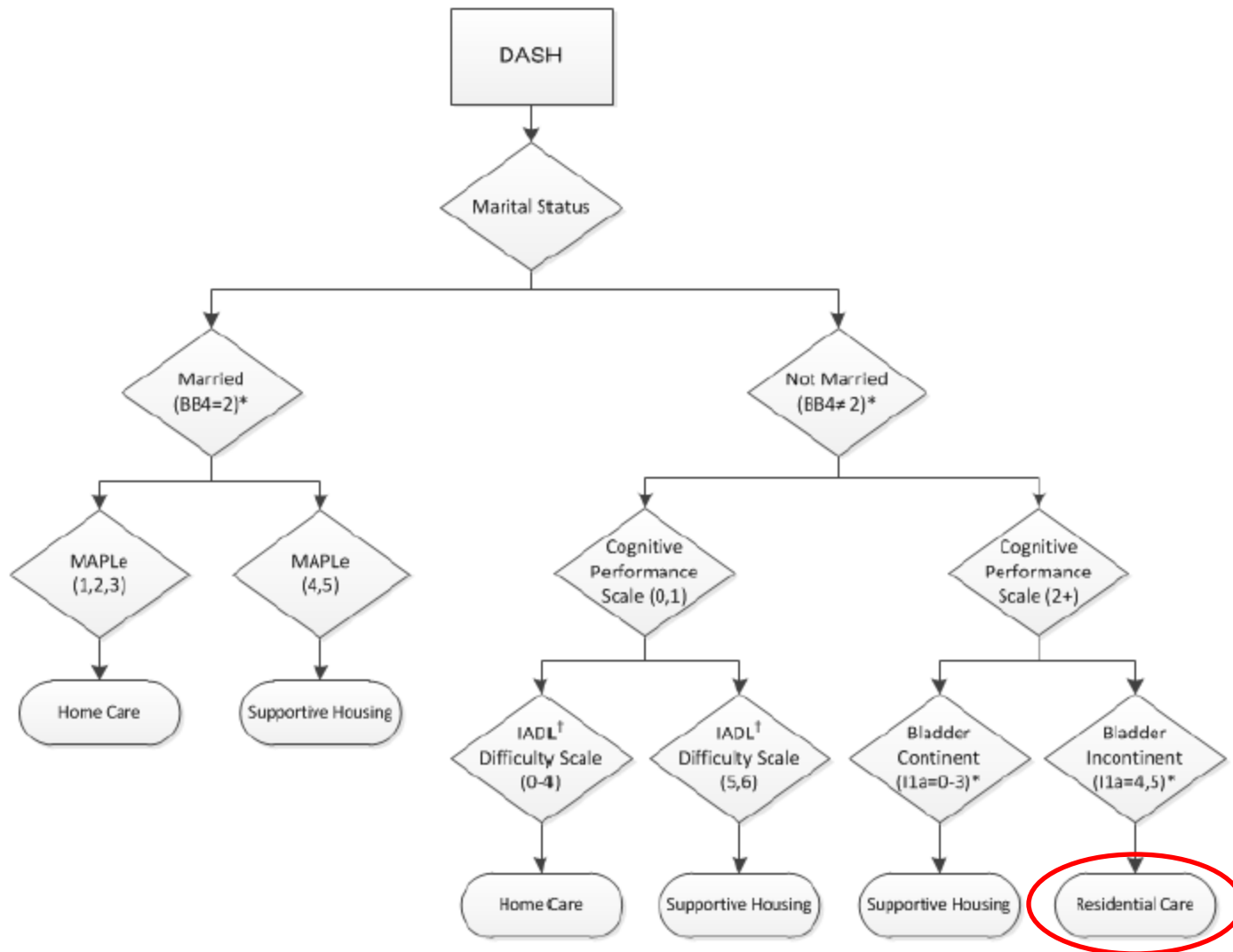
We designed spending scenarios for the following programs

- Community Support Services
- Assisted Living Services in Supportive Housing
- Community Care Access Centres (Age 65+)
- Long Term Care Homes
- Complex Continuing Care (Age 65+)
- Inpatient Rehabilitation (Age 65+)
- Acute Inpatient and Day Surgery (Age 65+)

| | CSS | ALSSH | CCAC | LTC | CCC | REHAB | Acute IP&DS | Total |
|----------------------|-------|-------|-------|---------|-------|-------|----------------|---------|
| 09 Central East | \$154 | \$62 | \$662 | \$1,849 | \$290 | \$202 | \$2,360 | \$5,579 |
| High Performing LHIN | \$187 | \$153 | \$523 | \$1,316 | \$408 | \$251 | \$2,158 | \$4,996 |
| Best Practice LHIN | | | | | | | | |
| Province | \$172 | \$103 | \$655 | \$1,688 | \$390 | \$185 | \$2,462 | \$5,656 |

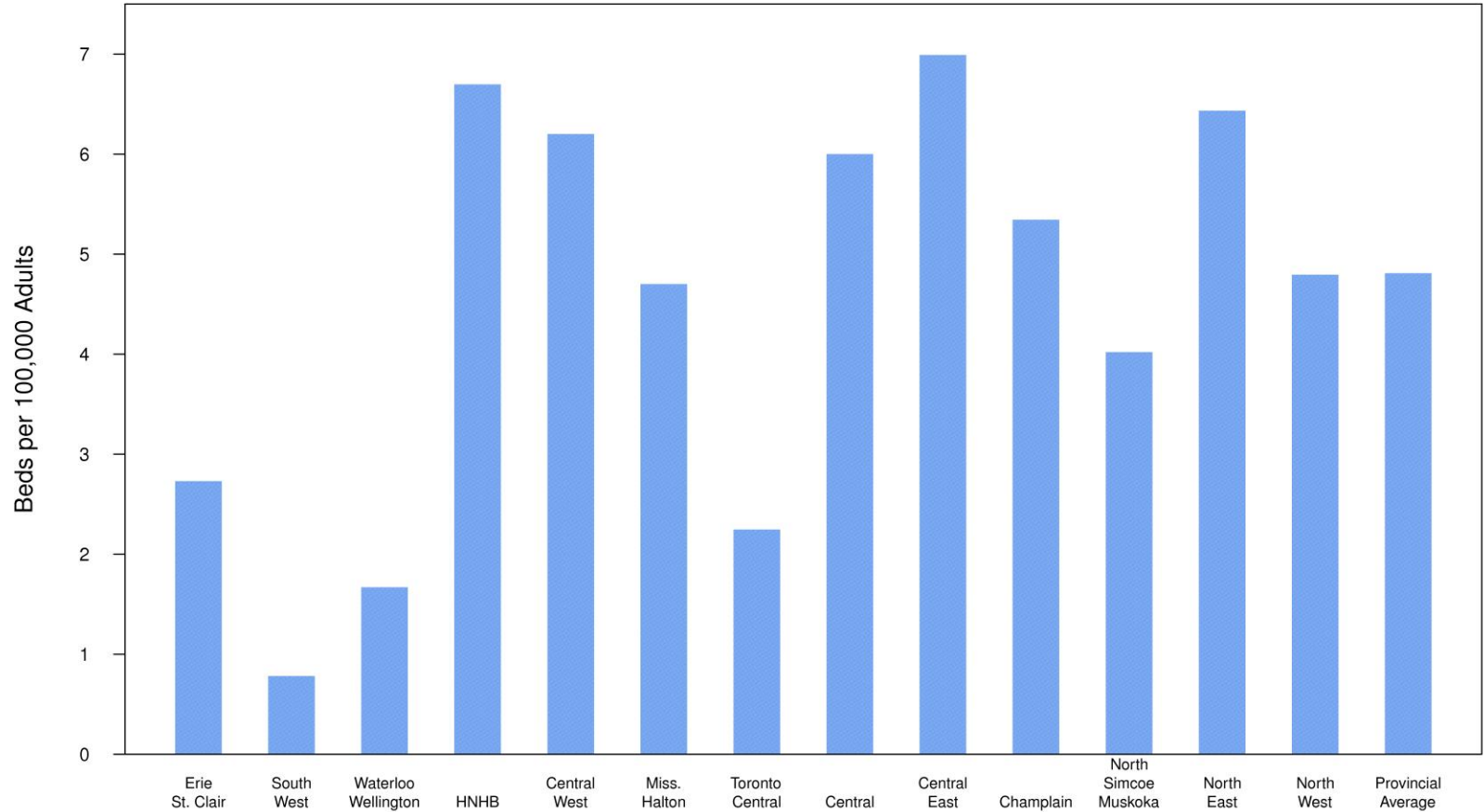
- CE LHIN total expenses per senior are 1% less than the Provincial average and 12% more than the HP LHIN
- CE LHIN LTC expenses per senior are 10% more than the Provincial average and 41% more than the HP LHIN
- CE LHIN expenses per senior for CSS, CCC , ALSSH are substantially less than comparators

The Decision Algorithm for Supportive Housing[®] (DASH)



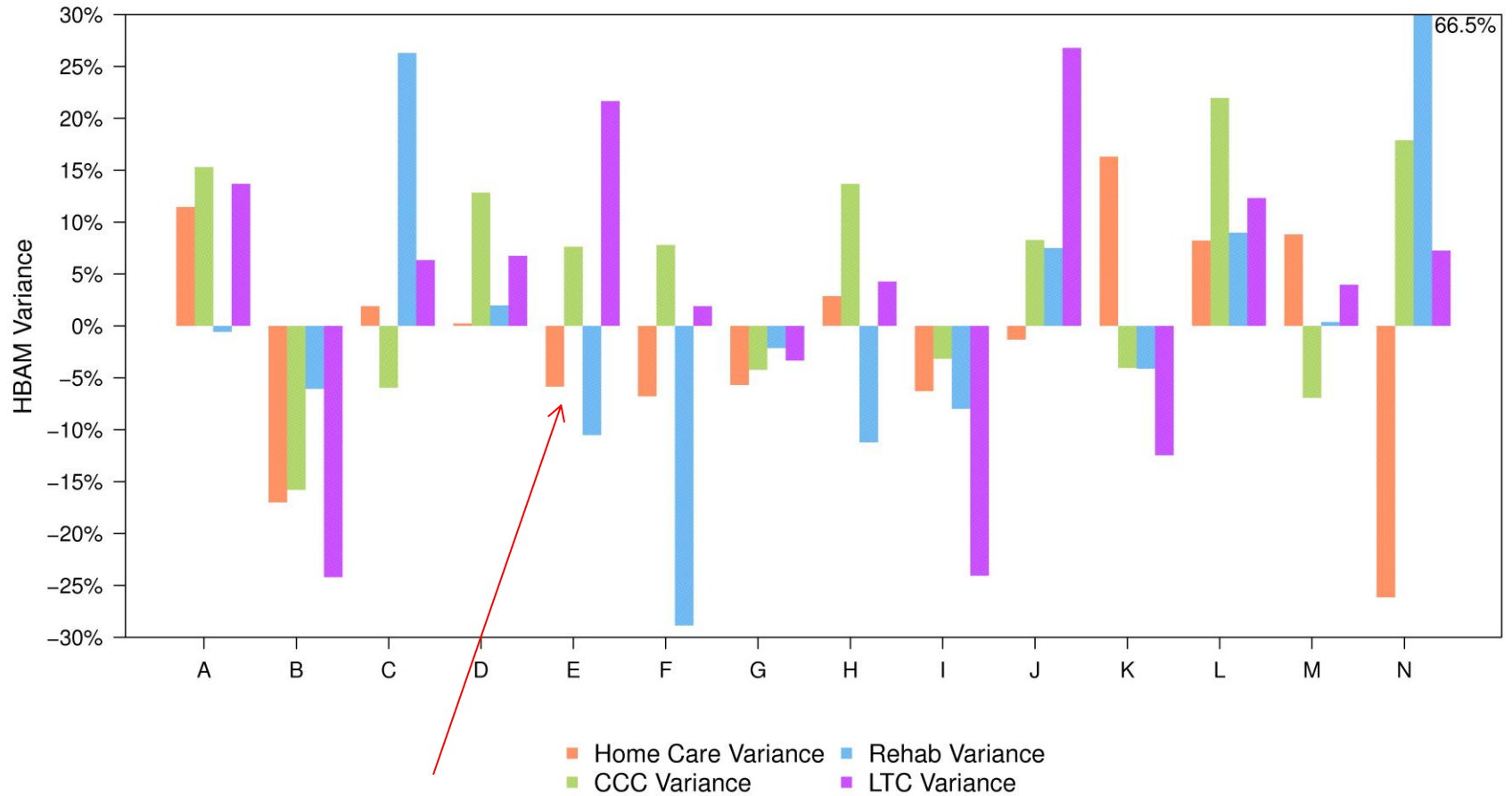
However, LTC residents are a multimorbid population

LTC Convalescent Care Beds per 100,000 Adults by LHIN, 2011/12 Data



- Skilled nursing facilities (SNFs) provide short-term skilled nursing care and rehabilitation services, such as physical and occupational therapy and speech–language pathology services. Examples of SNF patients include those recovering from surgical procedures, such as hip and knee replacements, or from medical conditions, such as stroke and pneumonia.
- In 2010, Medicare-covered SNF days made up 12 percent of total patient days but 23 percent of facility revenue.

HBAM Variances – Home Care, Rehab, CCC and LTC



| Provider LHIN | Discharges with Palliative Care | Discharge Destination | | | | | | | | |
|----------------------------------|---------------------------------|-----------------------|-----|------------|------------|------|-----------|-------|----------|-----------------|
| | | Acute | CCC | Died | Home Care | Home | LTC | Other | IP Rehab | Retirement Home |
| Erie St. Clair | 2,056 | 1% | 10% | 61% | 12% | 8% | 2% | 5% | 0% | 2% |
| Windsor Regional Hospital | 812 | 1% | 10% | 51% | 17% | 14% | 3% | 2% | 1% | 2% |
| South West | 3,107 | 2% | 7% | 72% | 10% | 3% | 2% | 1% | 1% | 2% |
| Waterloo Wellington | 2,122 | 2% | 10% | 57% | 13% | 5% | 3% | 7% | 1% | 2% |
| Hamilton Niagara Haldimand Brant | 4,371 | 2% | 16% | 57% | 13% | 5% | 3% | 3% | 0% | 2% |
| Central West | 1,227 | 1% | 2% | 74% | 8% | 8% | 4% | 2% | 0% | 1% |
| Mississauga Halton | 2,174 | 1% | 13% | 53% | 17% | 10% | 3% | 1% | 1% | 2% |
| Toronto Central | 5,375 | 3% | 13% | 48% | 15% | 10% | 3% | 1% | 3% | 2% |
| Central | 3,038 | 1% | 16% | 61% | 10% | 5% | 4% | 1% | 1% | 2% |
| Central East | 4,763 | 2% | 6% | 68% | 12% | 6% | 3% | 0% | 1% | 1% |
| South East | 1,887 | 3% | 9% | 62% | 16% | 4% | 3% | 0% | 1% | 2% |
| Champlain | 3,895 | 2% | 9% | 61% | 12% | 6% | 3% | 4% | 1% | 2% |
| North Simcoe Muskoka | 1,105 | 1% | 9% | 59% | 14% | 4% | 3% | 9% | 0% | 1% |
| North East | 1,787 | 2% | 3% | 64% | 12% | 8% | 3% | 5% | 0% | 1% |
| North West | 1,157 | 4% | 17% | 40% | 25% | 7% | 3% | 0% | 0% | 3% |
| Province | 38,064 | 2% | 10% | 60% | 13% | 7% | 3% | 2% | 1% | 2% |

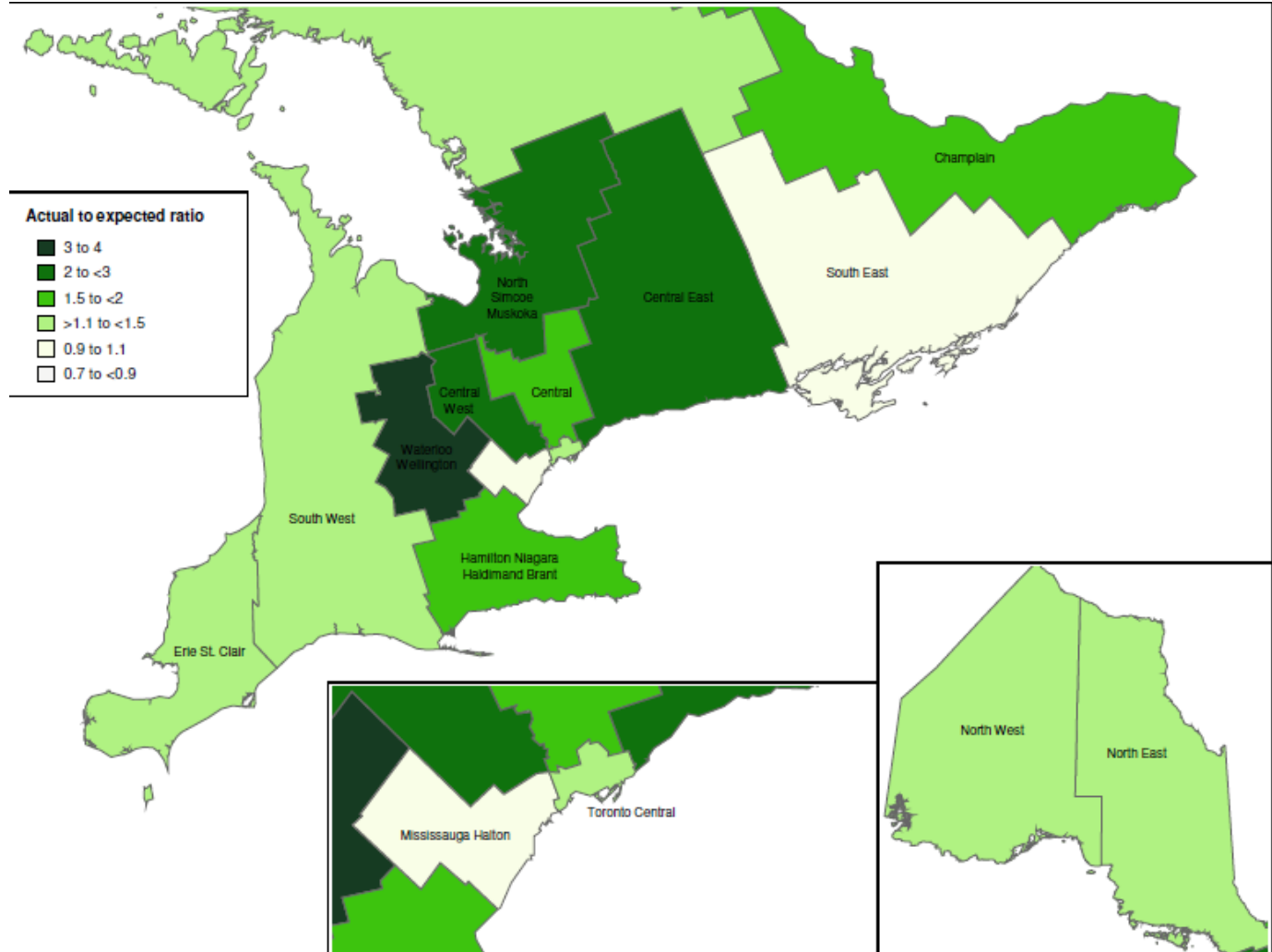
- Hospice care provided to nursing home (NH) residents has been shown to improve the quality of end-of-life (EOL) care. However, hospice utilization in LTC Homes is typically low (Zheng et al, 2012, Gerontologist)
- Total Medicare spending for hospice care for nursing facility residents grew by 69 percent from 2005 to 2009 (Gozalo, 2011, NEJM)

Actual and expected hospital days per capita by LHIN, decedents 65+, without palliative care

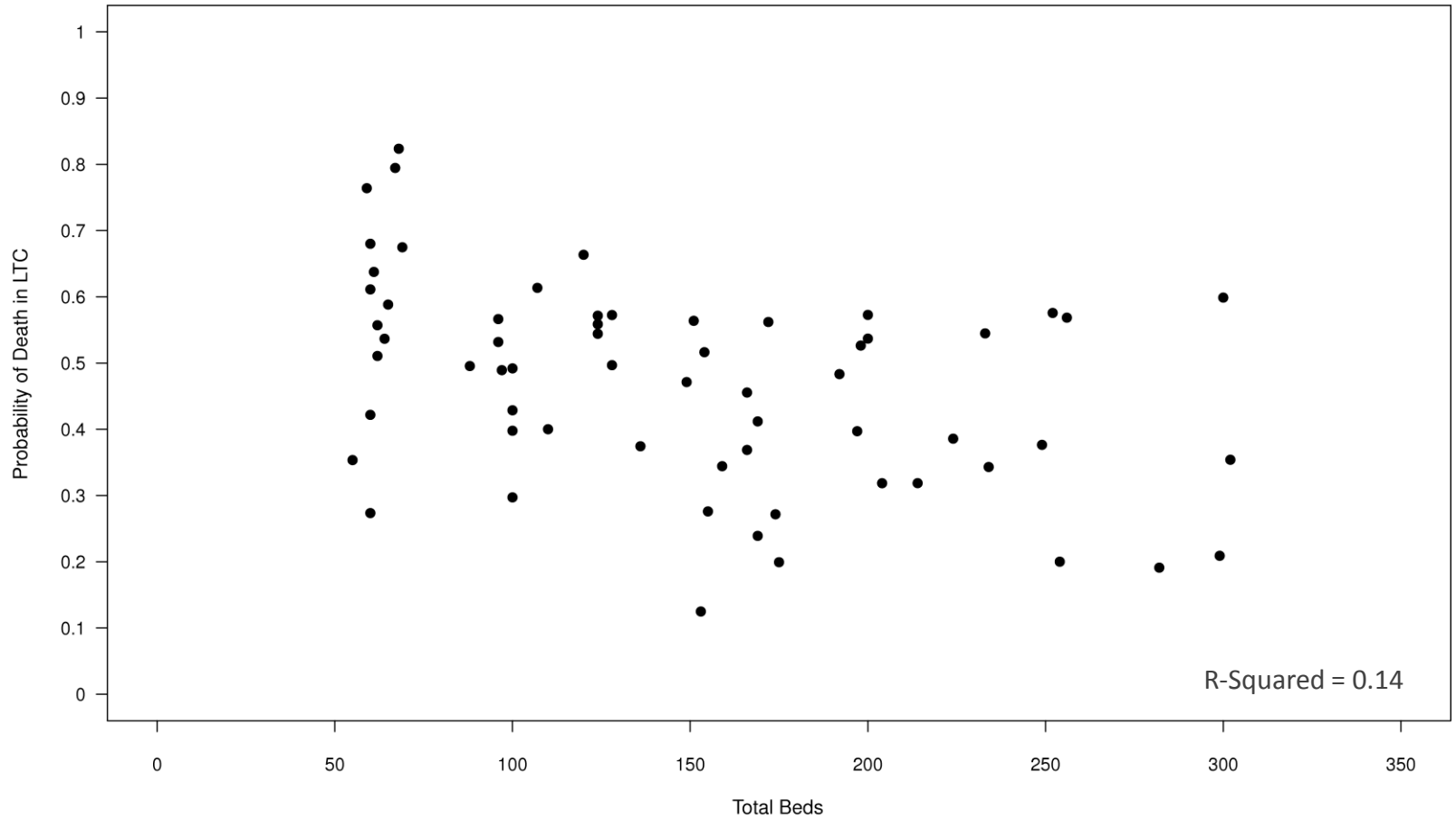
| | Actual days per capita (per 1000) without palliative | | | | | Age-sex adjusted days (per 1000) without palliative | | | | | Ratio of actual to expected (adjusted) | | | |
|----------------------------------|--|------------|------------|------------|------------|---|------------|------------|------------|------------|--|-------------|-------------|-------------|
| | patients | | | | | patients, considering 2005-06 rates as standard | | | | | | | | |
| | 2005 | 2006 | 2007 | 2008 | 2009 | 2005 | 2006 | 2007 | 2008 | 2009 | 2006 | 2007 | 2008 | 2009 |
| All LHINs | 234 | 240 | 249 | 255 | 233 | 234 | 237 | 239 | 240 | 241 | 1.01 | 1.04 | 1.06 | 0.97 |
| Erie St. Clair | 196 | 232 | 215 | 195 | 166 | 196 | 198 | 199 | 200 | 200 | 1.17 | 1.08 | 0.98 | 0.83 |
| South West | 251 | 238 | 215 | 246 | 220 | 251 | 252 | 253 | 253 | 253 | 0.94 | 0.85 | 0.97 | 0.87 |
| Waterloo Wellington | 149 | 190 | 222 | 225 | 166 | 149 | 150 | 152 | 152 | 153 | 1.26 | 1.47 | 1.48 | 1.09 |
| Hamilton Niagara Haldimand Brant | 219 | 237 | 233 | 263 | 242 | 219 | 222 | 224 | 225 | 226 | 1.07 | 1.04 | 1.17 | 1.07 |
| Central West | 155 | 180 | 176 | 191 | 174 | 155 | 158 | 159 | 160 | 160 | 1.15 | 1.11 | 1.20 | 1.08 |
| Mississauga Halton | 237 | 254 | 267 | 209 | 177 | 237 | 240 | 242 | 244 | 245 | 1.06 | 1.10 | 0.86 | 0.72 |
| Toronto Central | 270 | 260 | 281 | 275 | 254 | 270 | 274 | 278 | 281 | 283 | 0.95 | 1.01 | 0.98 | 0.90 |
| Central | 212 | 227 | 238 | 238 | 221 | 212 | 215 | 217 | 219 | 222 | 1.06 | 1.10 | 1.08 | 1.00 |
| Central East | 208 | 212 | 232 | 233 | 229 | 208 | 211 | 214 | 215 | 216 | 1.00 | 1.08 | 1.08 | 1.06 |
| South East | 270 | 261 | 282 | 286 | 239 | 270 | 272 | 273 | 274 | 274 | 0.96 | 1.03 | 1.04 | 0.87 |
| Champlain | 282 | 271 | 287 | 276 | 272 | 282 | 285 | 287 | 288 | 288 | 0.95 | 1.00 | 0.96 | 0.95 |
| North Simcoe Muskoka | 177 | 181 | 190 | 204 | 221 | 177 | 179 | 180 | 181 | 181 | 1.01 | 1.05 | 1.13 | 1.22 |
| North East | 360 | 321 | 380 | 461 | 381 | 360 | 363 | 366 | 367 | 369 | 0.89 | 1.04 | 1.25 | 1.03 |
| North West | 237 | 256 | 208 | 227 | 248 | 237 | 238 | 239 | 239 | 239 | 1.08 | 0.87 | 0.95 | 1.04 |

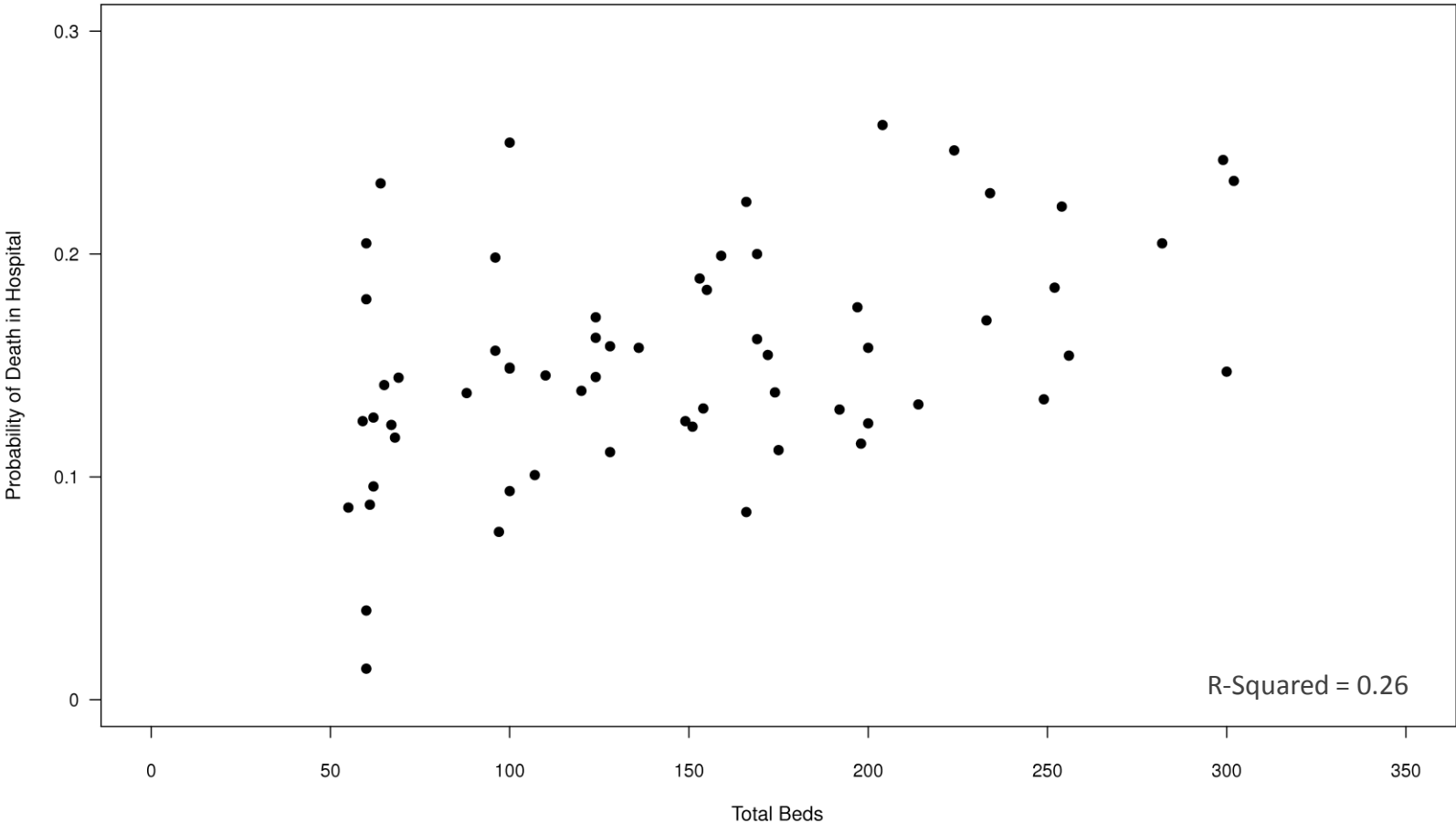
- There is variation over time and across LHINs in hospital days per 65+ decedents

Ratios of actual to expected ALC LOS in 2009 by LHIN, 2005 age and gender standardized rates, 65+ patients excluding palliative care



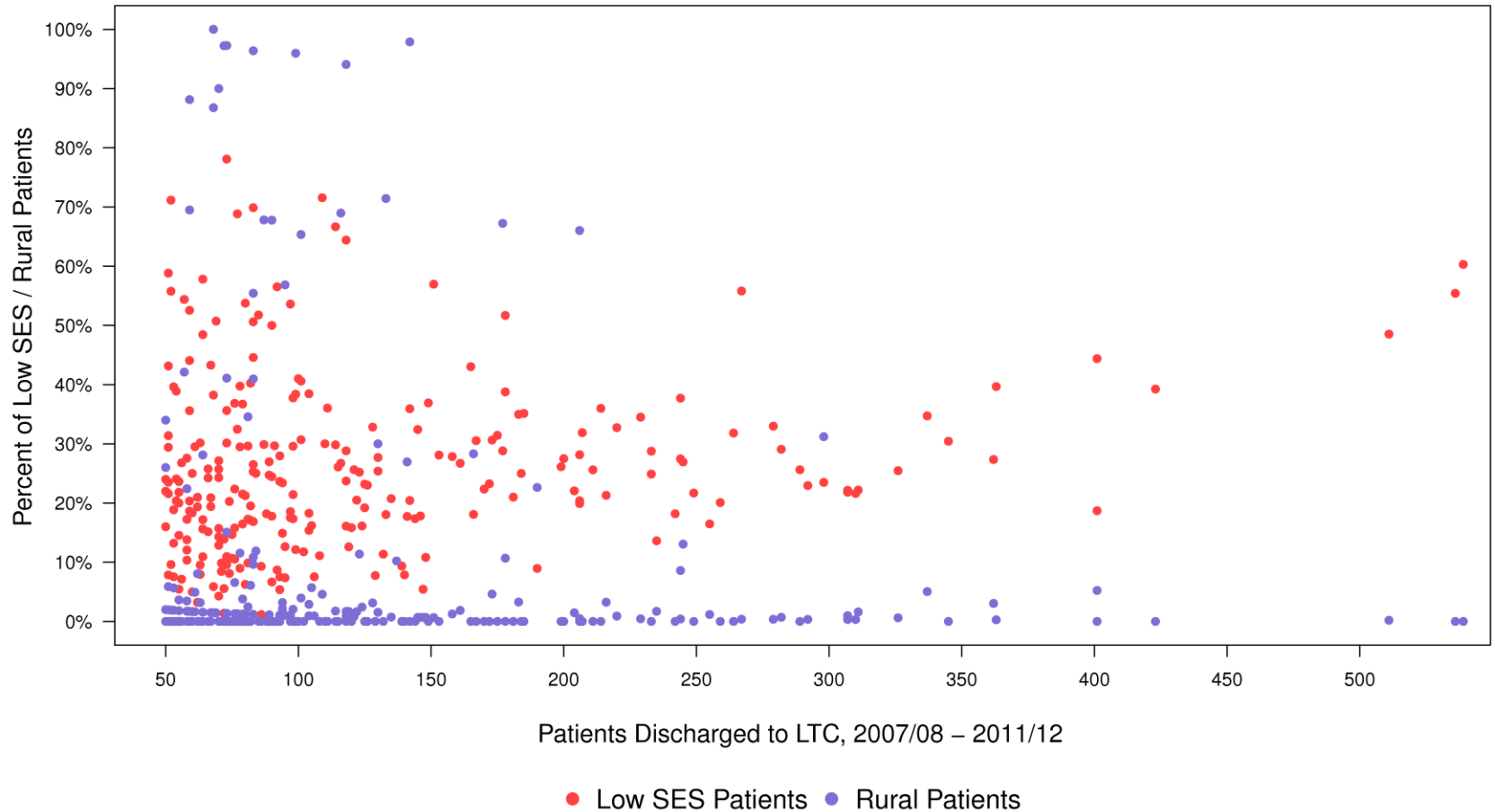
- The increase in ALC resources used by senior decedents within the Central East LHIN is among the highest in the province



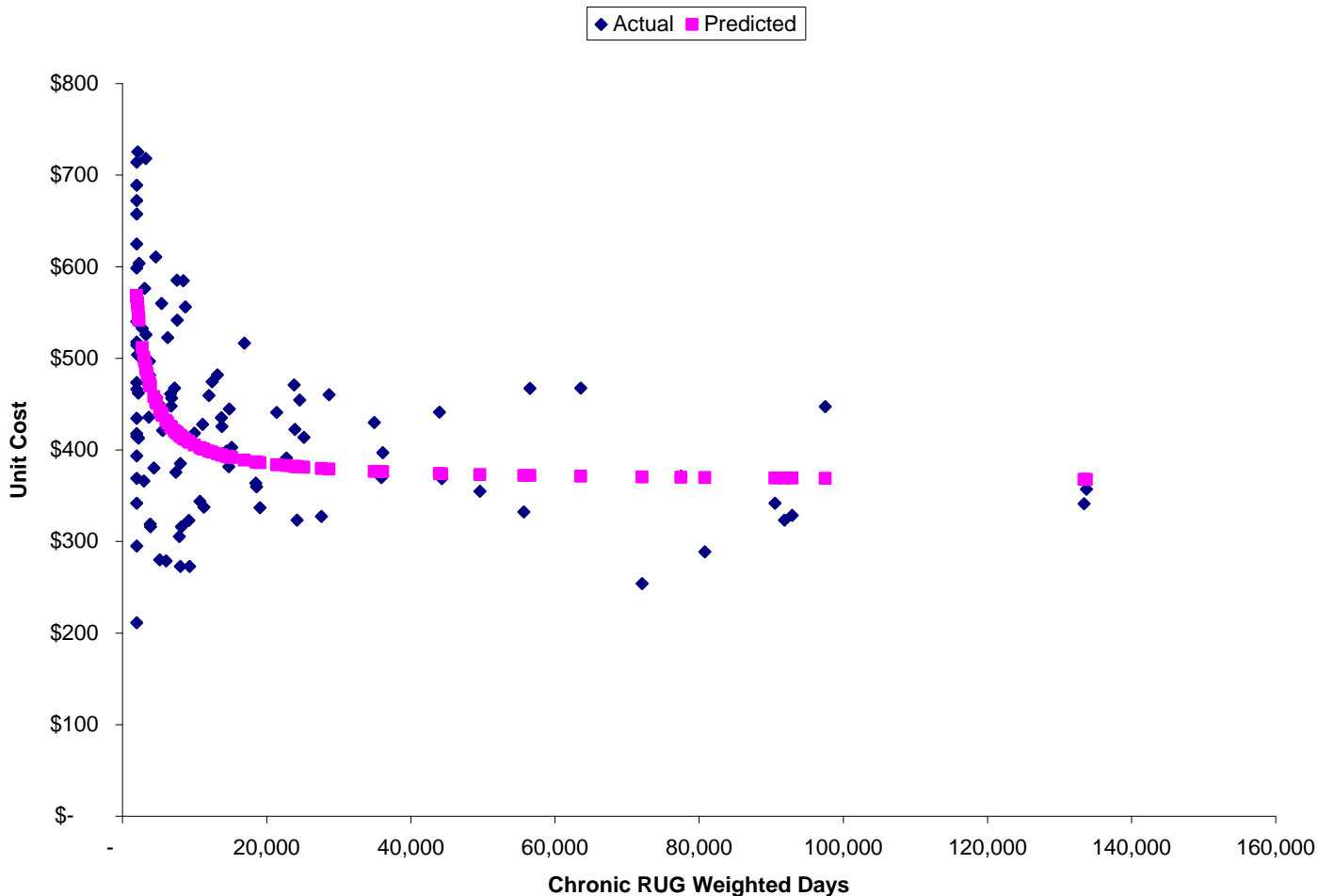


R-Squared = 0.26

Percent of Low SES, Rural Patients Discharged to LTC by LTC Home

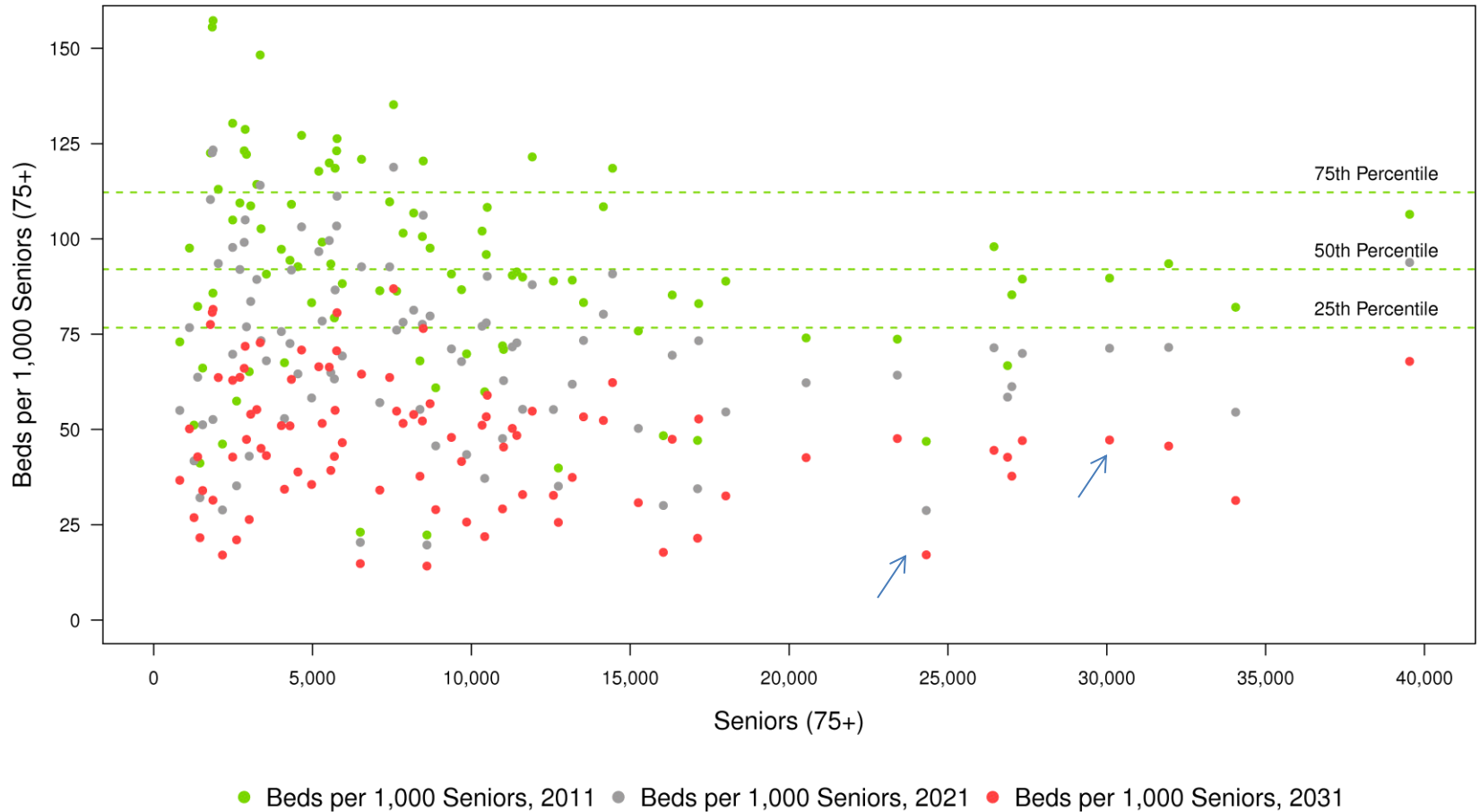


Economies of Scale In Complex Continuing Care

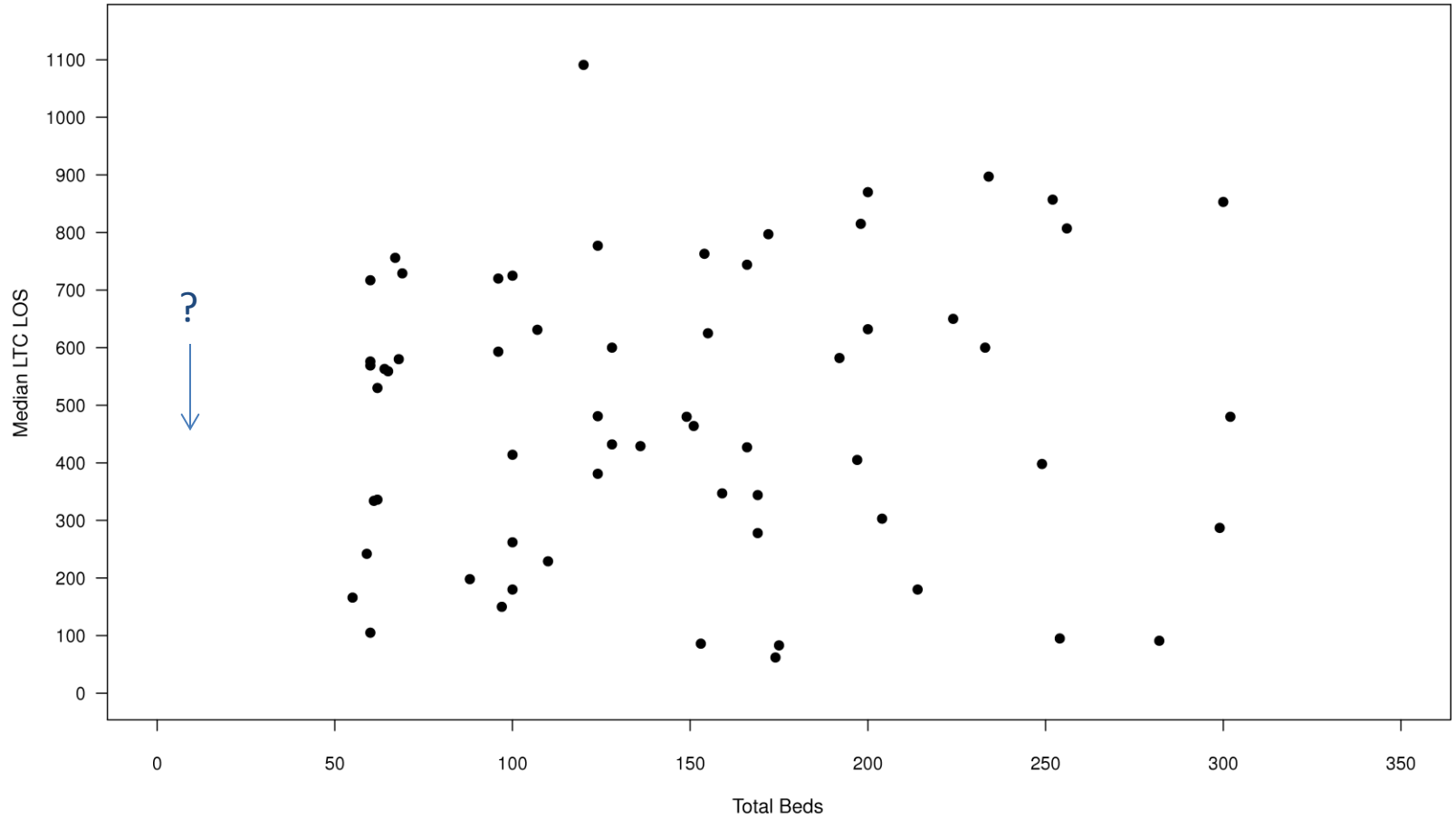


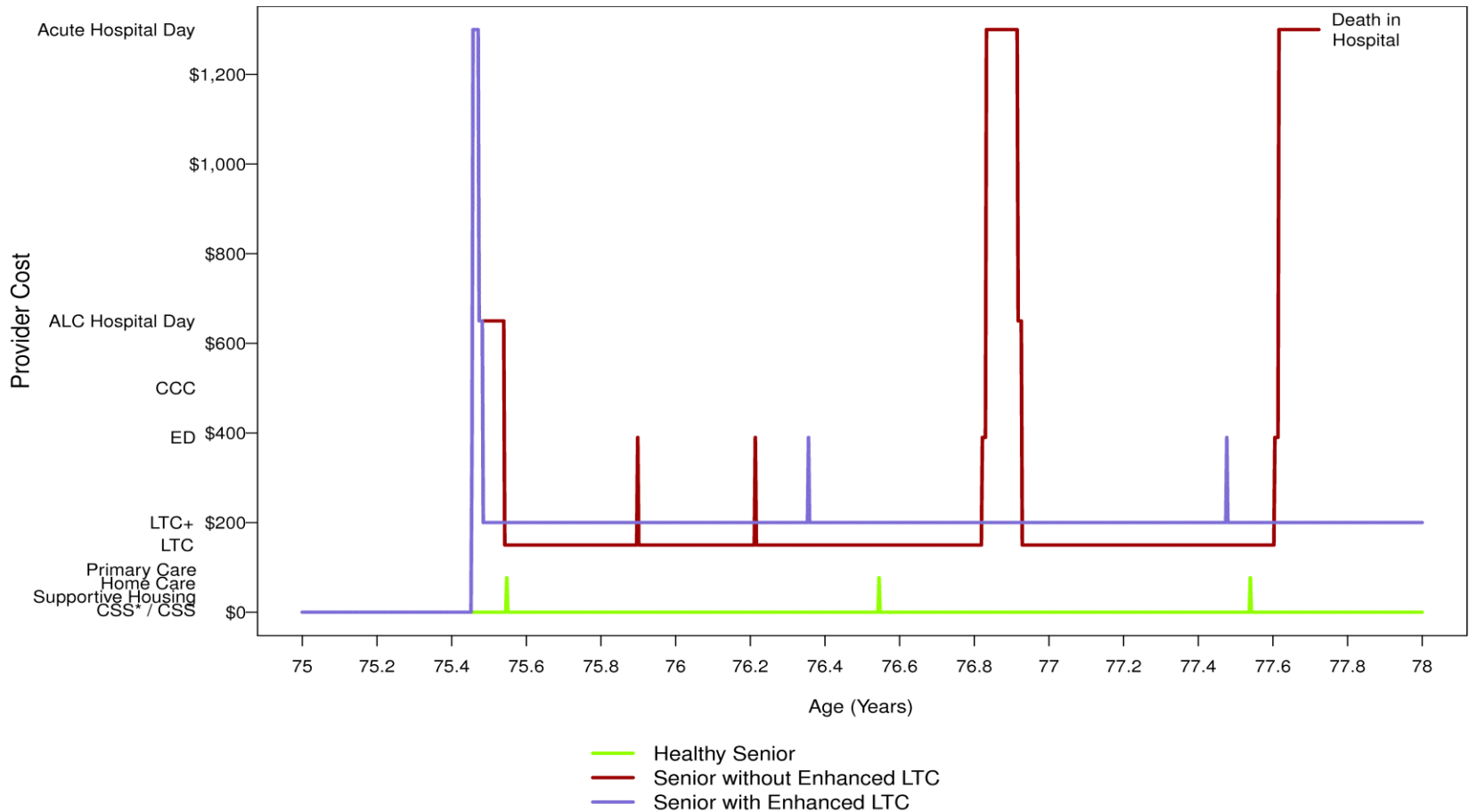
HBAM adjusts CPRWPD for small CCC facilities

Beds per 1,000 Seniors by SubLHIN, 20 Year Forecast



Over the next 10-20 years, without LTC bed increases, most subLHINs will have long term care beds per senior lower than is presently observed in the province.





- This plot shows costs over time for three hypothetical patients: a healthy senior that required only primary care once a year, and two frail seniors with an incident hospitalization at age 75.5. Over 3 years:
 - the **healthy senior costs \$231**
 - the frail senior with no enhanced LTC services was discharged to LTC, had 4 follow up ED visits and two hospital readmissions before dying in hospital. **This patient cost \$230,040 (\$118,950 in hospital).**
 - the frail senior that received enhanced LTC services had fewer ALC days in their incident admission, was discharged to LTC+ and had two follow up ED visits, with health care costs of **\$194,970 (\$10,400 in hospital).**

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