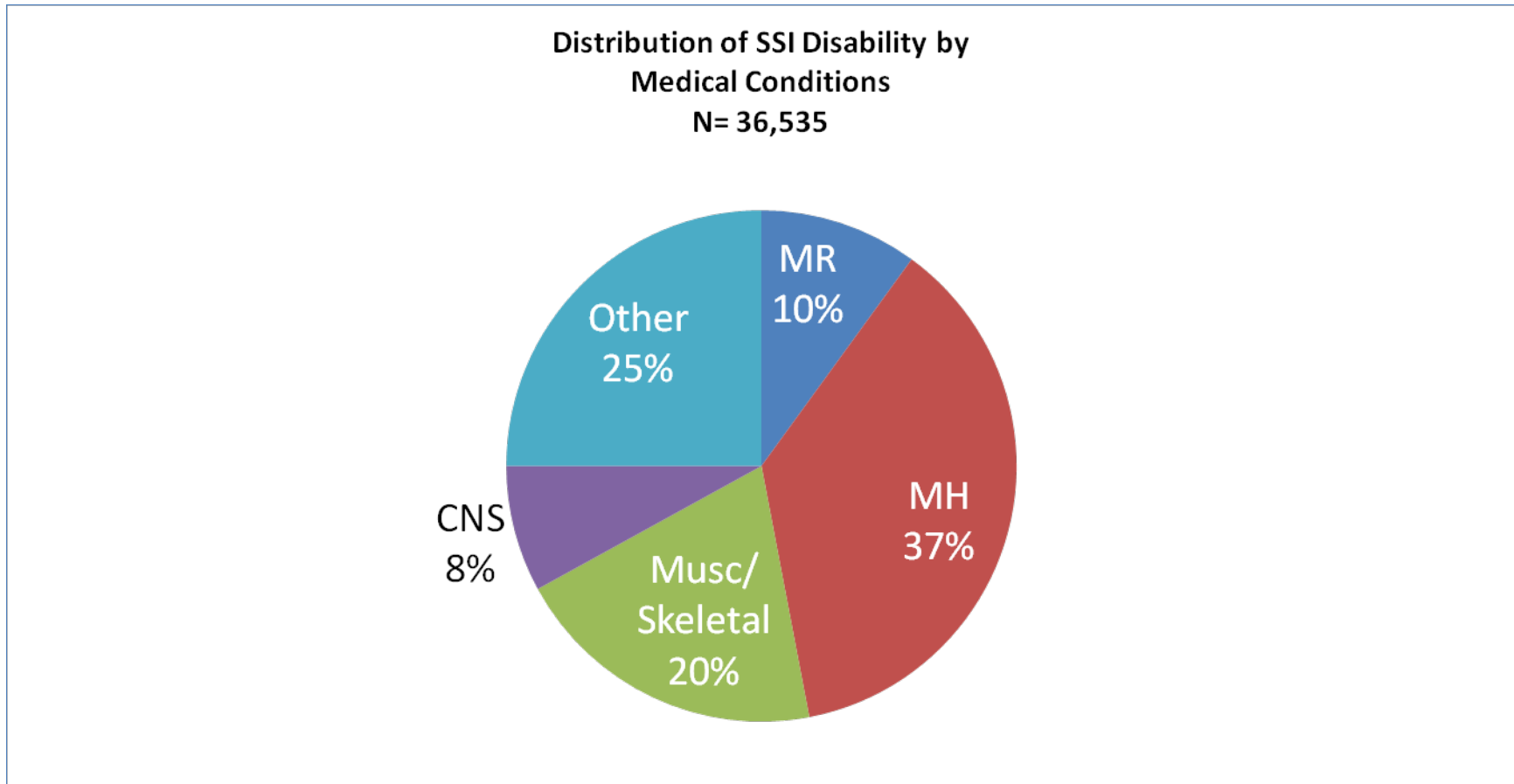**Specialty Populations**
12/14/2010

Sources of Information and Reference Materials

- HCUPnet Discharge Database
- CMS MDS 2.0 Online Reporting System
- Center for Mental Health Services/SAMHSA Uniform Reporting System online edition
- CMS Nursing Home Data Compendium, various years
- Social Security Statistical Supplement 100% file, various years
- Alzheimer Association 2009 Facts and Figures
- CDC Autism Spectrum Disorders Facts and Figures
- Caregiving in the US – National Alliance for Caregiving & AARP
- 2005/2006 National Survey of Children with Special Health Care Needs – RI Chartbook page
- Residential Services for Persons with Developmental Disabilities: Status and Trends Through 2006 – University of MN

- National Spinal Cord Statistical Information Center – UAB
- Nursing Facility Operating Characteristics Report – AHCA, 2010 Update
- Nursing Facilities, Staffing, Residents and Facility Deficiencies, 2004 Through 2009 – UCSF PAS
- NRI-Inc datasets
- Across the States: Profiles of Long-term Care and Independent Living, AARP 2009
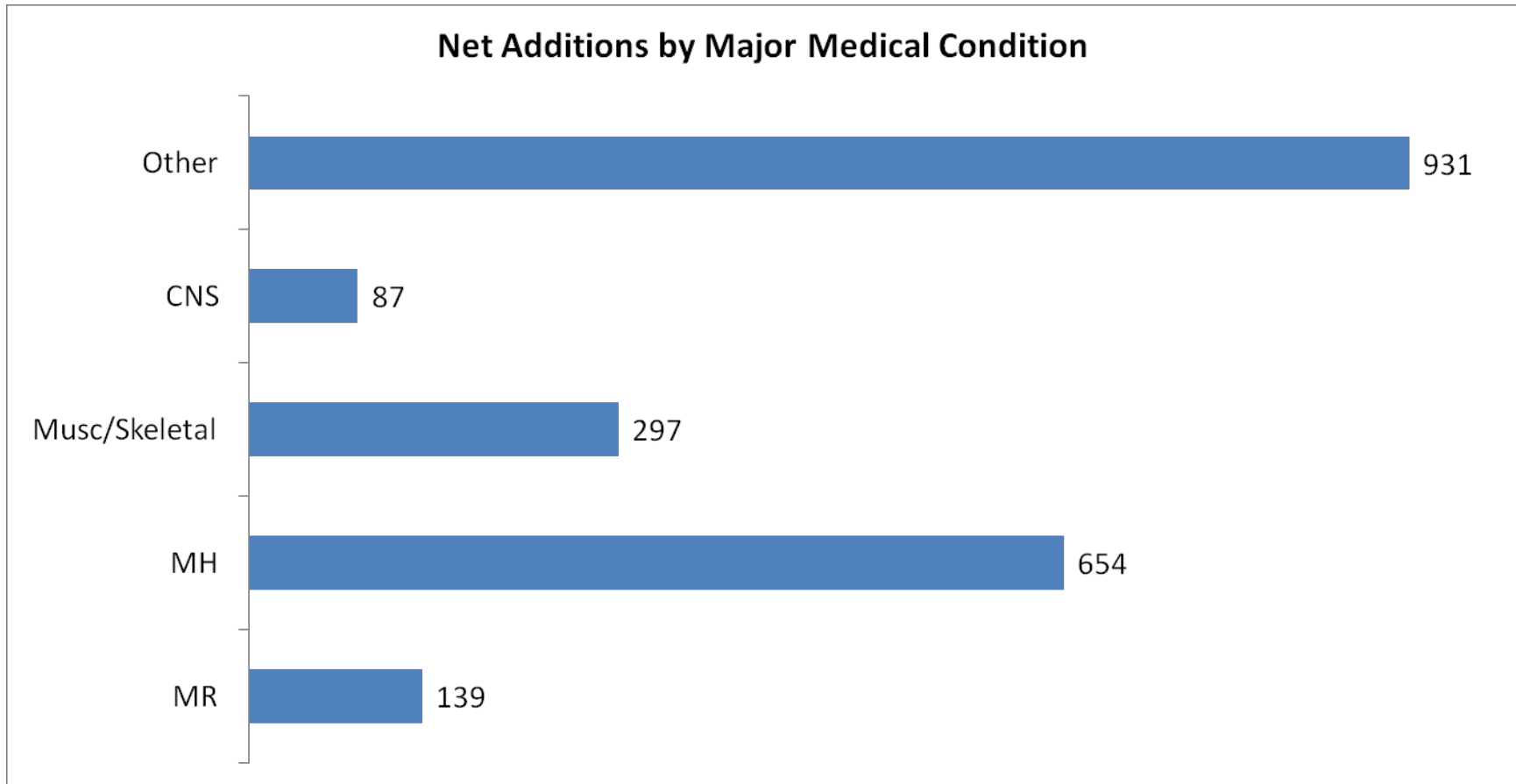- RI Birth Defects Databook
- RIDE IDEA report

Medical Disability

Approximately 75% or 27,000 SSI-D recipients likely require long term supports

Distribution of SSI Disability by Medical Conditions
N= 36,535

MR 10%
Other 25%
CNS 8%
Musc/Skeletal 20%
MH 37%

Source: NP calculations from SSI-D supplemental statistics file

Analysis of 6 years of SSI-D medical data shows caseload growth on average of 2100 annually

Net Additions by Major Medical Condition

- Other: 931
- CNS: 87
- Musc/Skeletal: 297
- MH: 654
- MR: 139

Source: NP calculations from SSI-D supplemental statistics file
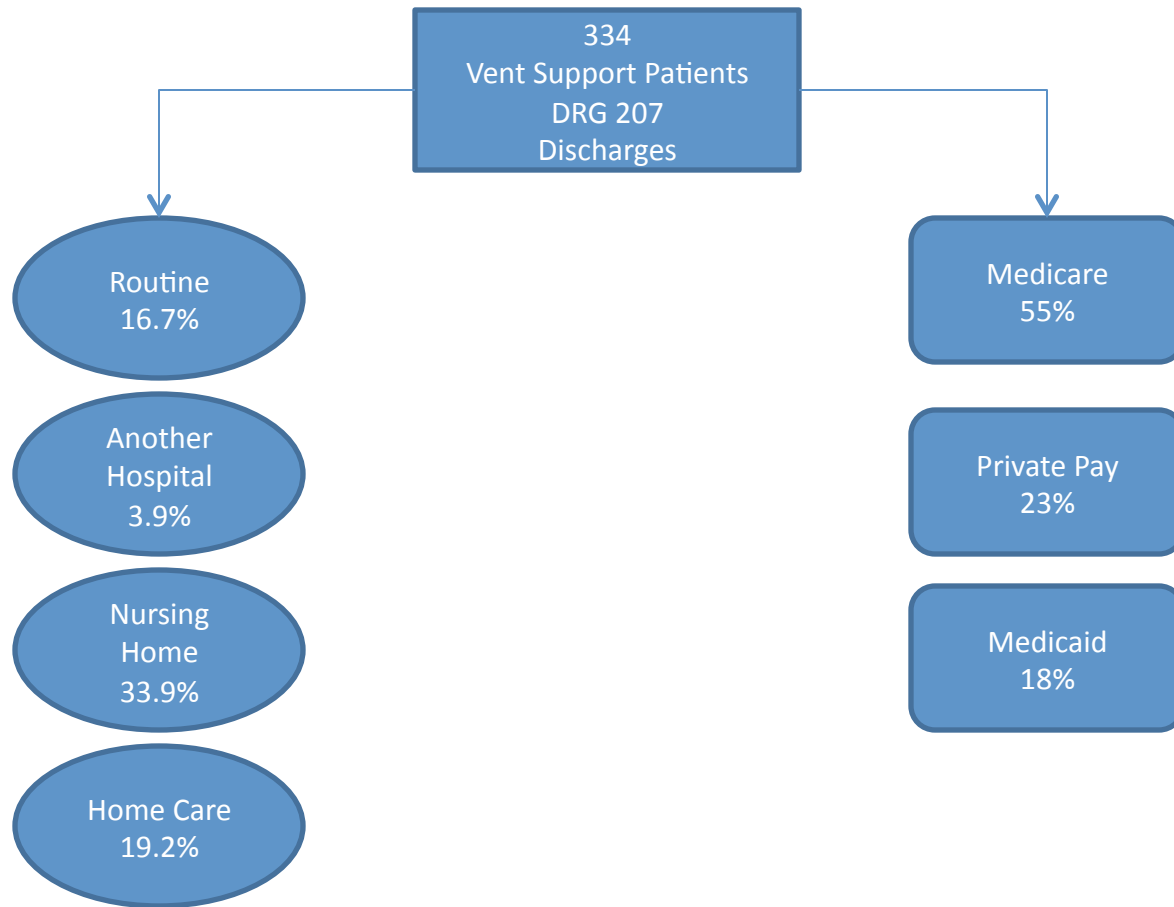
Spinal Cord Injuries, Ventilator Support

Discharge pathways for RI spinal cord patients - 2009

```
                        ┌─────────────────┐
                        │       96        │
                        │   Spinal Cord   │
                        │   Discharges    │
                        │  (all diagnosis)│
                        └─────────────────┘
```

(Routine 14.6%)

(Another Hospital 13.6%)

Estimated based on ICD 9 spinal cord injury as principal diagnosis

[Medicare 29%]

(Nursing Home 60.2%)

[Private Pay 22.3%]

(Home Care 10.7%)

[Medicaid 36%]
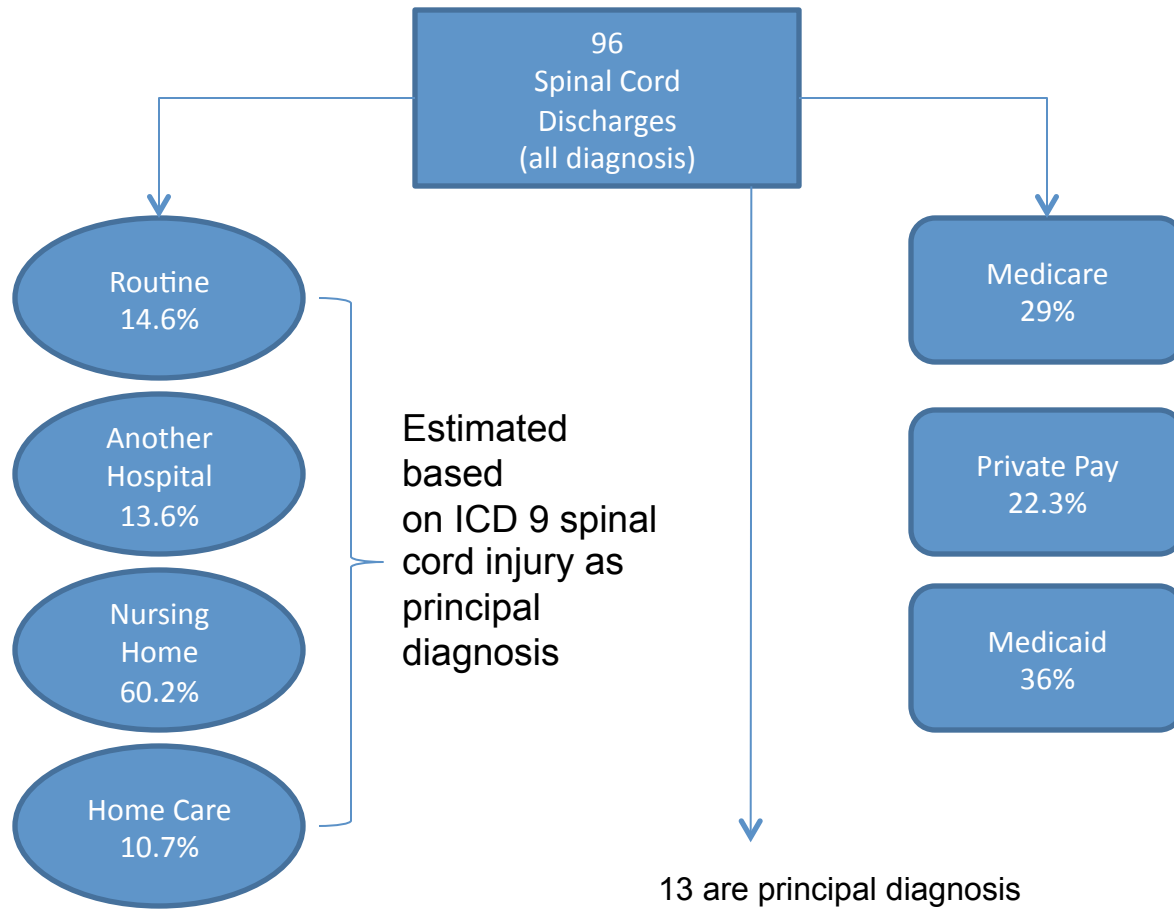
13 are principal diagnosis

Discharge pathways for RI Ventilator supported patients - 2009

334
Vent Support Patients
DRG 207
Discharges

Routine
16.7%

Another
Hospital
3.9%

Nursing
Home
33.9%

Home Care
19.2%

Medicare
55%

Private Pay
23%

Medicaid
18%

Source: NP analysis of HCUPnet datasets

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Ventilator beds in RI

- Rhode Island has 20 beds in service with another 10 beds licensed but not in service
- Reports indicate that despite an apparent need for additional ventilator bed capacity demand has not emerged
- NP's belief is that the historic per diem method of payment by BCBSRI for inpatient hospital stays coupled with the low occupancy rates at a number of hospitals is in part responsible for this lack of demand for specialized ventilator bed capacity
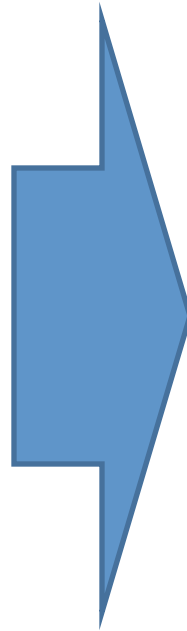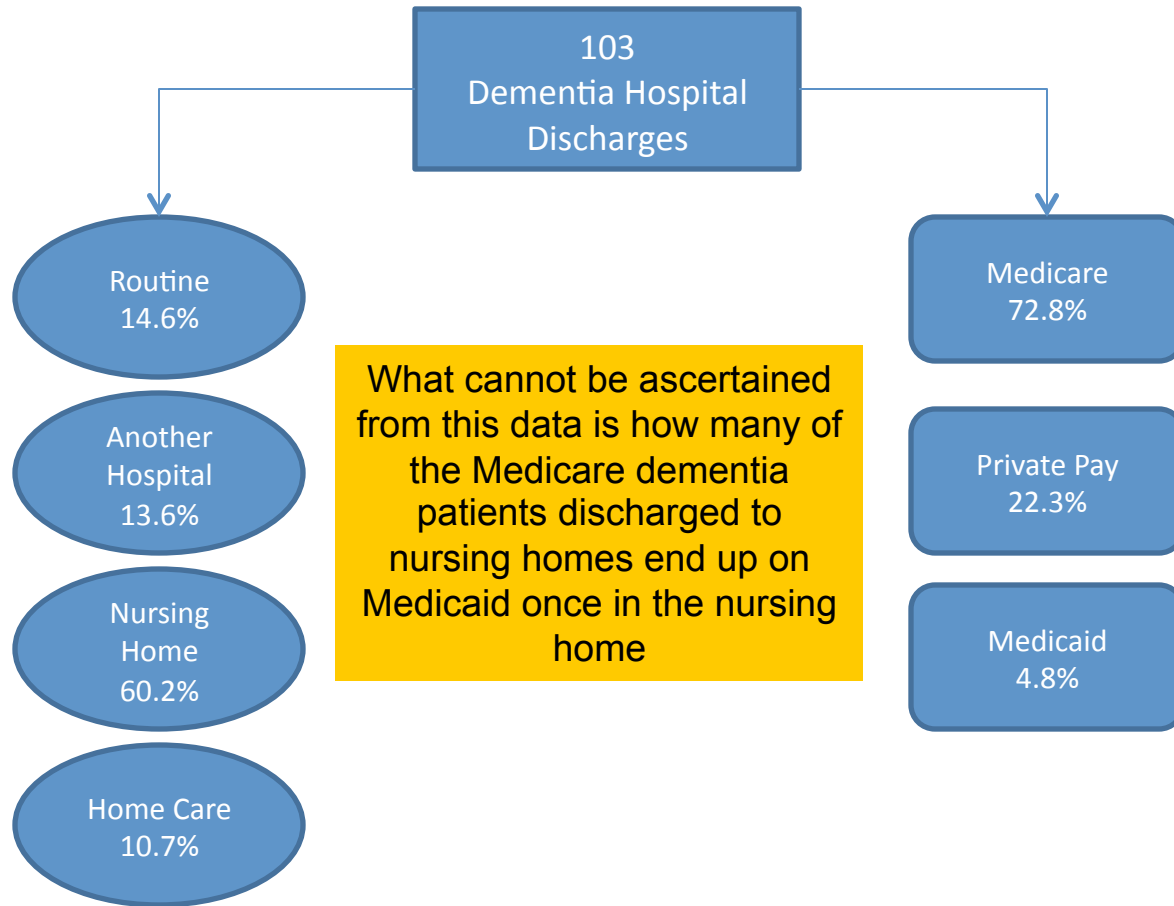
Items to Watch

- COPD incidence among RI Medicare patients is among the highest in the country and could trigger additional demand as the population ages
- Changes in hospital behavior due to the OHIC requirement to move toward a DRG model for hospital payments
- Impact of bundled payments on generating need for lower cost settings for ventilator support / weaning programs than hospitals

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Alzheimer's and Dementia

Discharge pathways for RI dementia patients - 2009

103 Dementia Hospital Discharges

Routine
14.6%

Another Hospital
13.6%

Nursing Home
60.2%

Home Care
10.7%

Medicare
72.8%

Private Pay
22.3%

Medicaid
4.8%

What cannot be ascertained from this data is how many of the Medicare dementia patients discharged to nursing homes end up on Medicaid once in the nursing home

Source: NP analysis of HCUPnet datasets

RI appears to discharge dementia patients more frequently to nursing facilities than the nation overall

- RI's percent of discharges to nursing homes reflects region practice patterns
  - MASS % to nursing homes ranges between 60%-65%

Dementia Discharges to Nursing Homes RI vs US

Year	RI	US
2004	67%	60%
2005	64%	59%
2006	66%	60%
2007	64%	63%
2008	67%	59%
2009	60%	
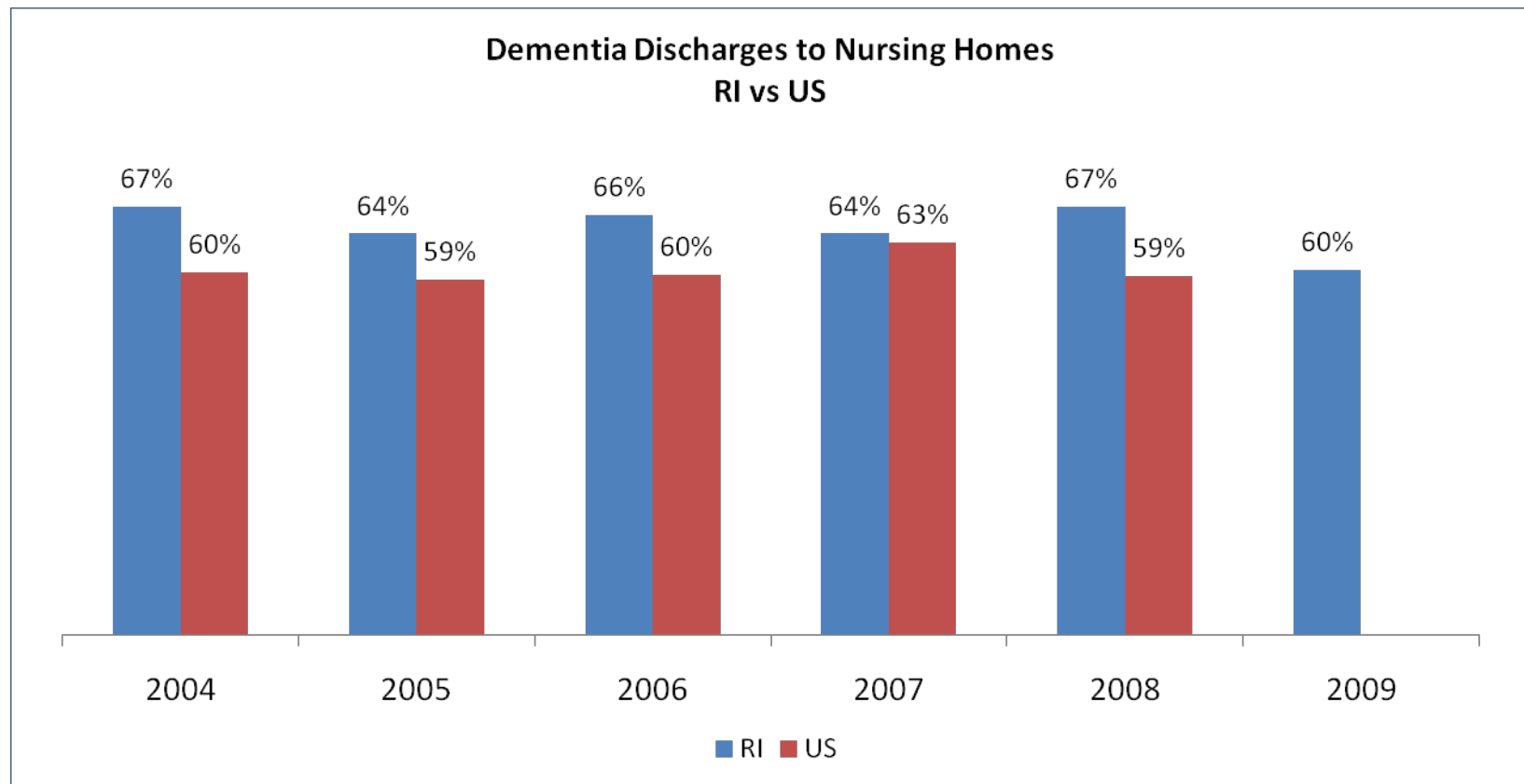
Source: NP analysis of HCUPnet datasets

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According to OSCAR data the number of Alzheimer nursing home beds in RI has been on a downward trend...

Alzheimer Beds
OSCAR DATA

842, 921, 880, 821, 815, 407
2004, 2005, 2006, 2007, 2008, 2009
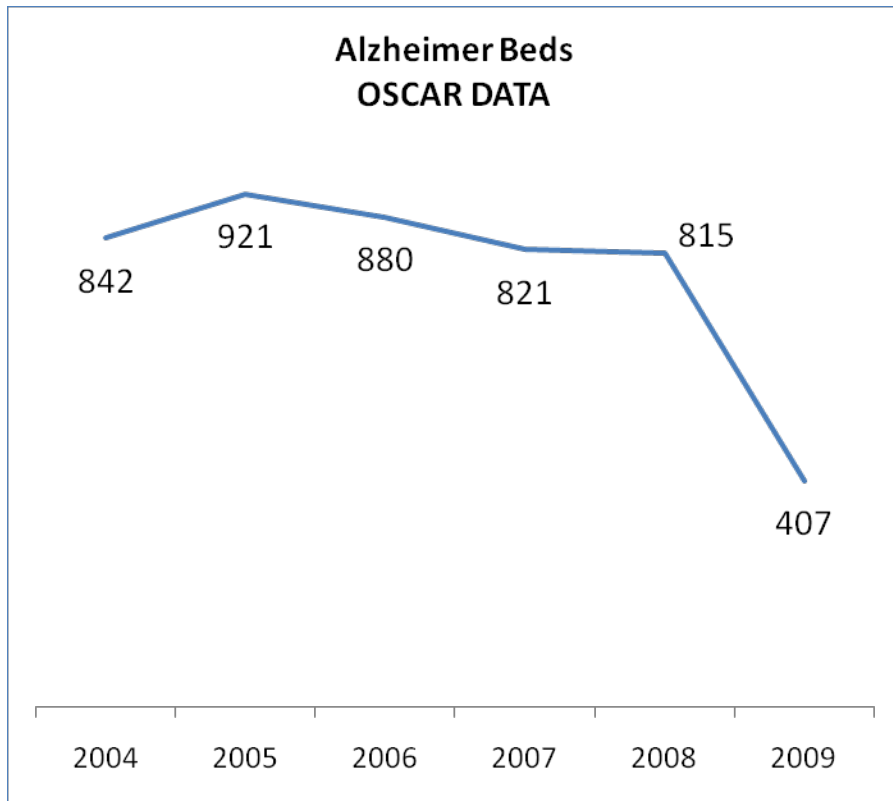
- This data is corroborated by the AHCA
- There has been no response from the RI Health Department

Nationally the number of Alzheimer special care units has declined by 6% since 2004

Source: Nursing Facilities, Staffing, Residents and Facility, Deficiencies, 2004 Through 2009, University of California based on OSCAR data
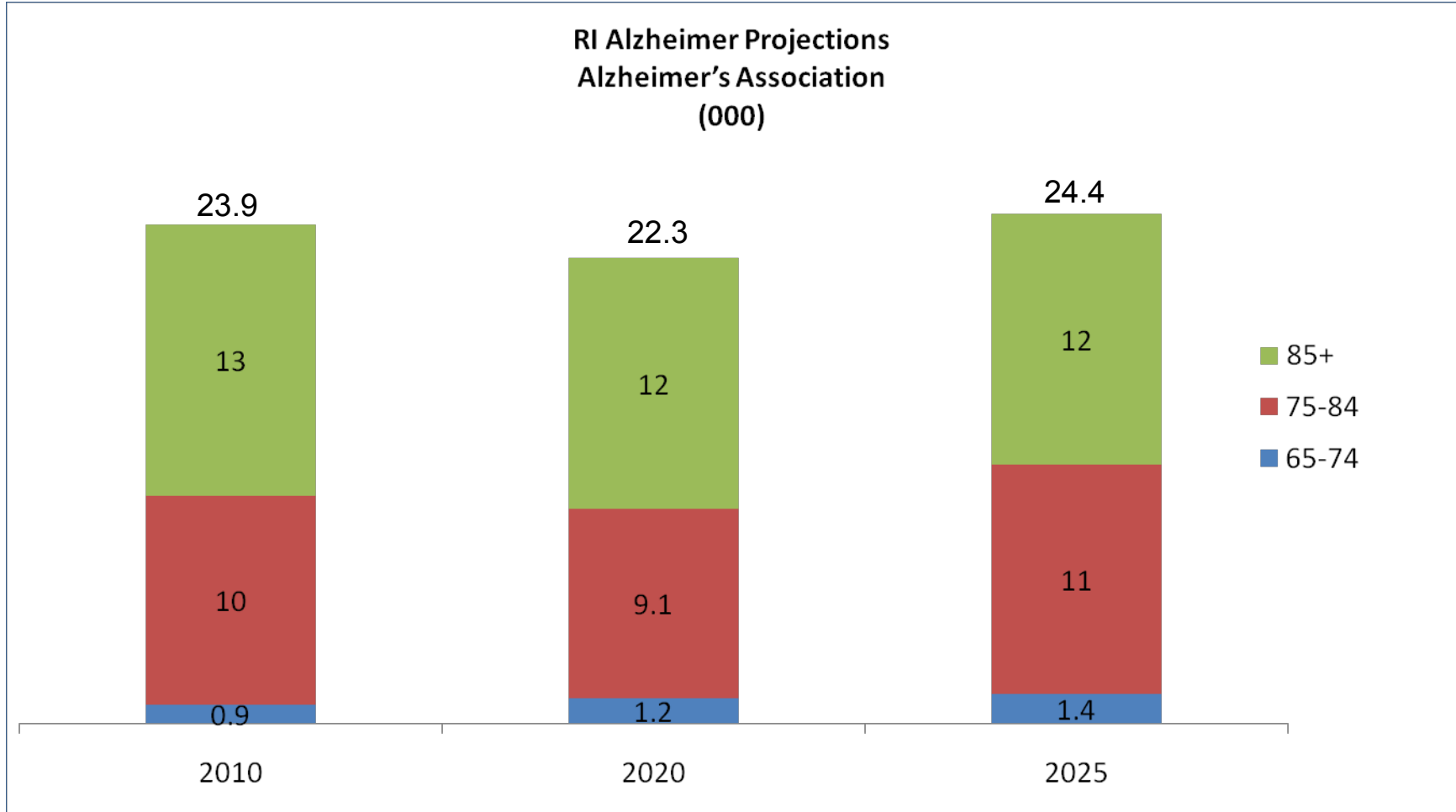
The percentage of nursing home residents with cognitive impairment has been declining but at a slower level than dedicated bed reductions

▪ The continued decline is thought to be attributable to the increase in subacute use of nursing beds

% of RI Nursing Home Residents with Cognitive Impairment
CPS Level 3 thru Level 6

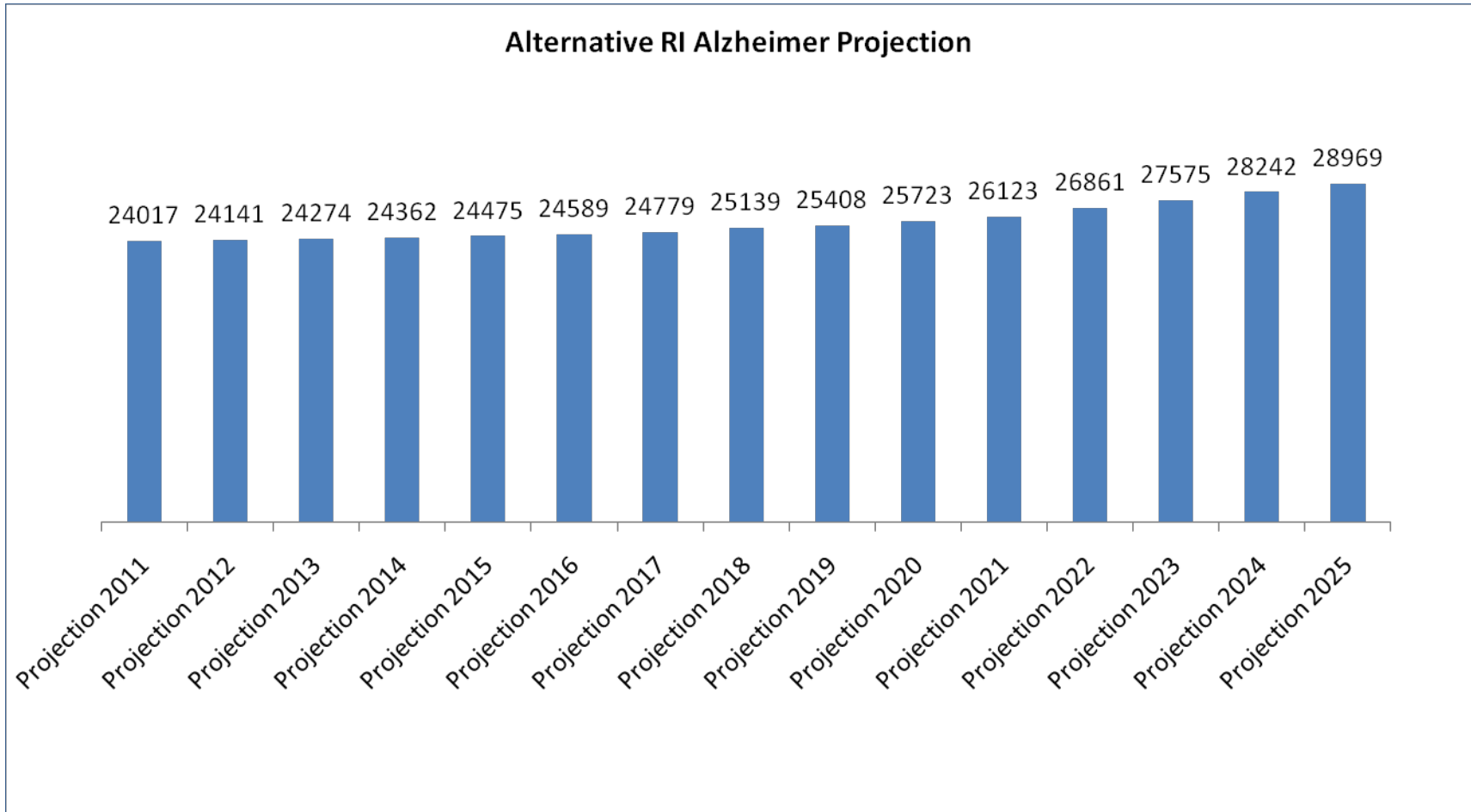| Year	%
2004	42.8%
2005	43.1%
2006	42.1%
2007	41.6%
2008	40.3%
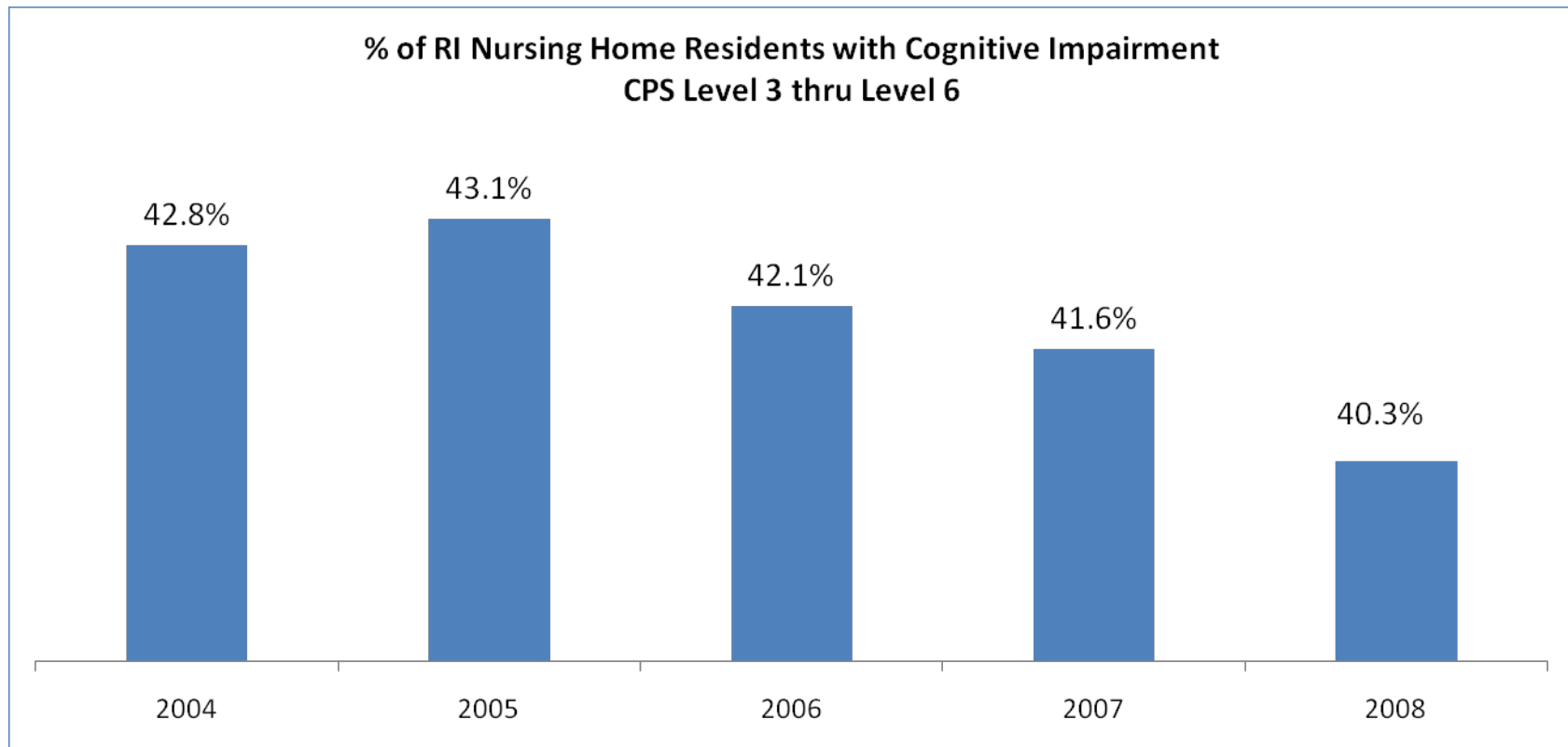
CPS= Cognitive Performance Scale
Source: CMS 2009 Nursing Home Data Compendium

Over the next several years Alzheimer's cases are expected to decline by 1600 cases and then begin accelerating

RI Alzheimer Projections
Alzheimer's Association
(000)

Legend:
- 85+
- 75-84
- 65-74

Year	85+	75-84	65-74	Total
2010	13	10	0.9	23.9
2020	12	9.1	1.2	22.3
2025	12	11	1.4	24.4

Source: NP analysis of 2009 Alzheimer's Facts and Figures

However, an alternative projection based on prevalence rates suggest the potential for a significantly higher level

Alternative RI Alzheimer Projection

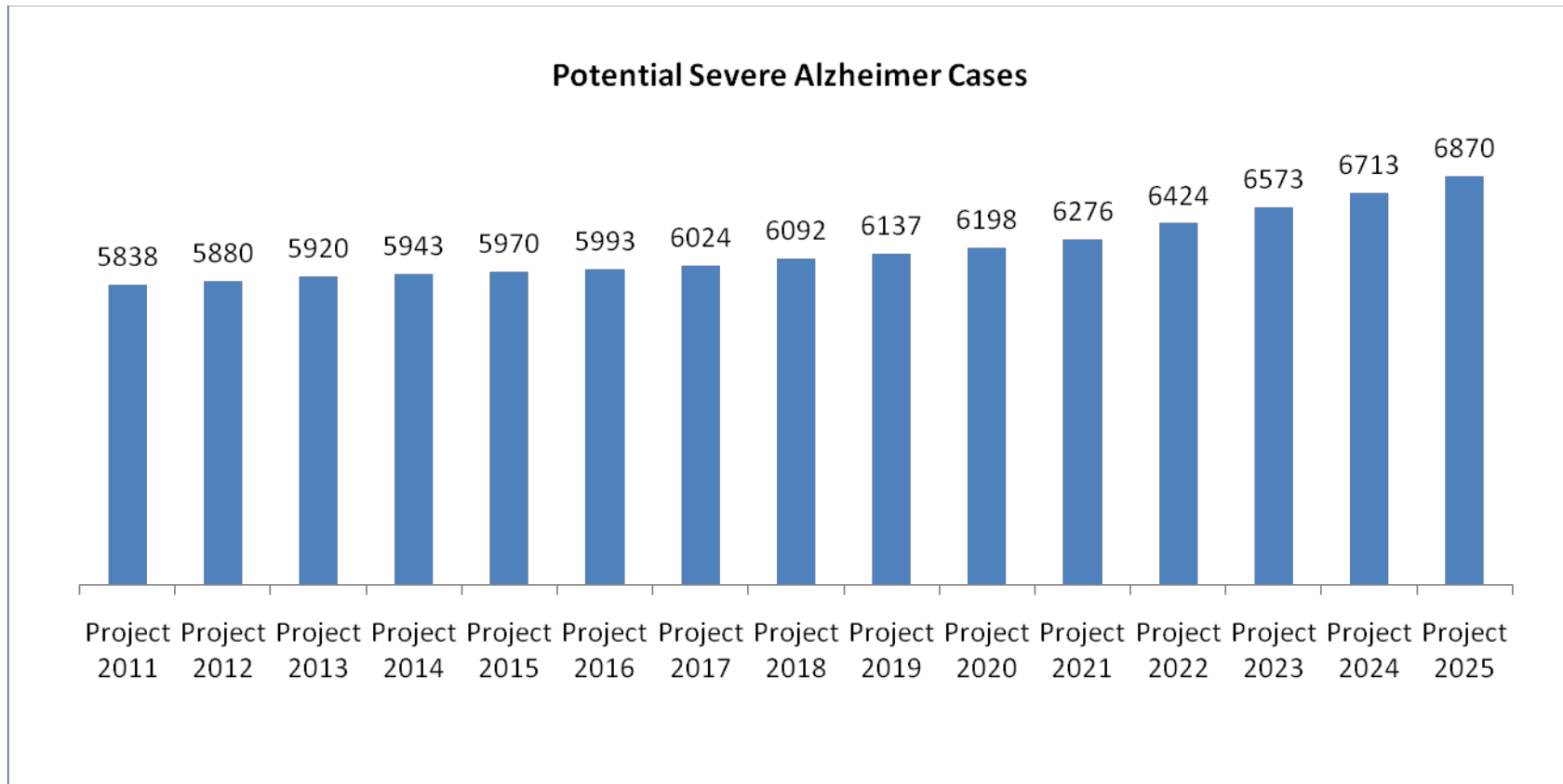| Projection	Value
Projection 2011	24017
Projection 2012	24141
Projection 2013	24274
Projection 2014	24362
Projection 2015	24475
Projection 2016	24589
Projection 2017	24779
Projection 2018	25139
Projection 2019	25408
Projection 2020	25723
Projection 2021	26123
Projection 2022	26861
Projection 2023	27575
Projection 2024	28242
Projection 2025	28969

Source: NP projections based on age-based prevalence rates applied to Census Bureau population projections

About 24% of the cases are likely to be severe

- Using Alzheimer Association forecasts approximately 5860 cases could be rated as severe

Potential Severe Alzheimer Cases

5838	5880	5920	5943	5970	5993	6024	6092	6137	6198	6276	6424	6573	6713	6870
Project 2011	Project 2012	Project 2013	Project 2014	Project 2015	Project 2016	Project 2017	Project 2018	Project 2019	Project 2020	Project 2021	Project 2022	Project 2023	Project 2024	Project 2025

Source: NP projections based on "Chicago Study" Alzheimer Incidence study
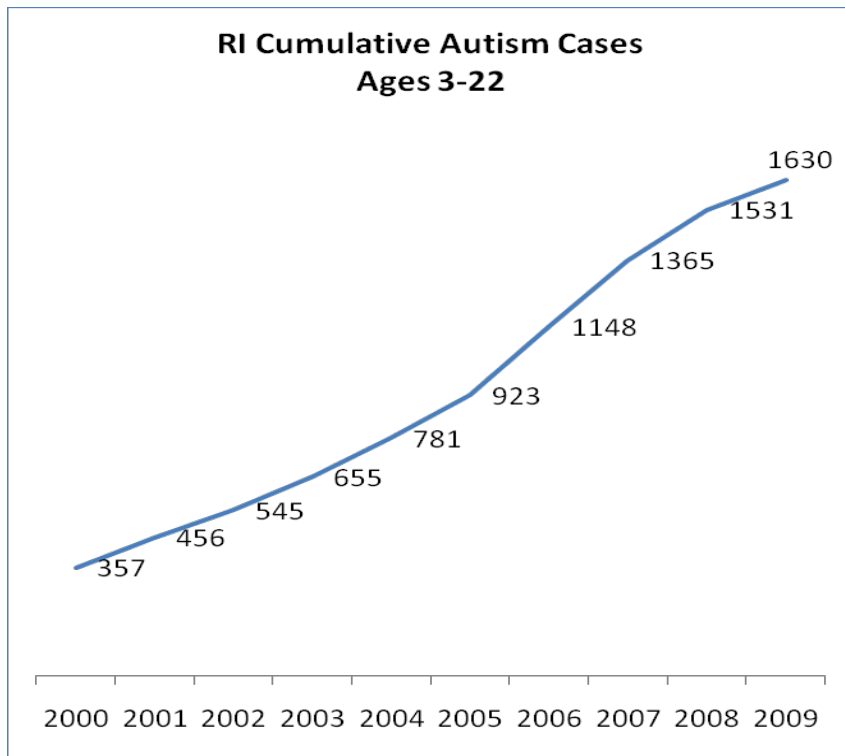
Implications for RI

- Based on RI Medicaid data using ICD 9 codes 290 and 294 there are 1500 dementia cases within the Medicaid program (primary and secondary diagnosis)

- That implies a 6% penetration rate by Medicaid into Alzheimer/Dementia patient care

- Based on both projections an "explosion" of Alzheimer related cases are not anticipated in the near term assuming present funding and access trends continue

- Alzheimer's should not have a major impact on RI's Medicaid program for at least 10 years and more likely 15 years

Although its not likely to have a major impact Alzheimer's needs to be monitored due to the impact of changing family structure
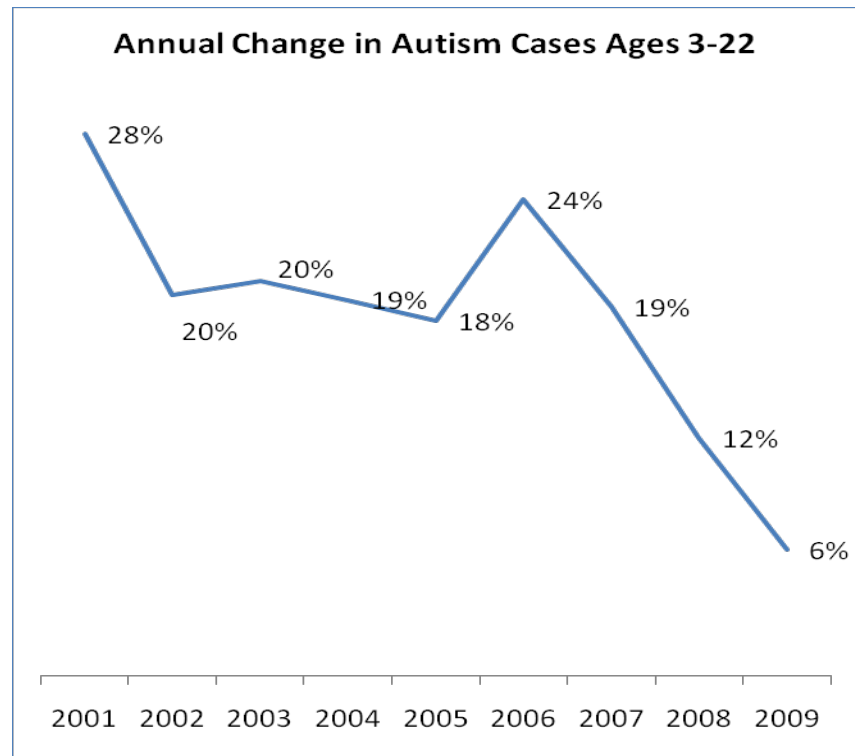
Children with Special Healthcare Needs

Autism in RI

Cumulative cases continue to grow …   *… But the pace has slowed*

RI Cumulative Autism Cases Ages 3-22

357, 456, 545, 655, 781, 923, 1148, 1365, 1531, 1630 (2000–2009)

Annual Change in Autism Cases Ages 3-22

28%, 20%, 20%, 19%, 18%, 24%, 19%, 12%, 6% (2001–2009)

Based on national prevalence data there are indications a large number of unidentified cases in the state – possibly as much as another 1000 may exist

Source: NP calculations based on IDEA reports and RIDE 2009 data

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Long term services for autism patients is unknown but a very large portion may require HCBS support services as they age out

Estimated Autism Population

- Specific information regarding the segmentation of children by Autism Spectrum Disorder in RI is lacking

- Autism estimates are 1 in approximately 110 children*
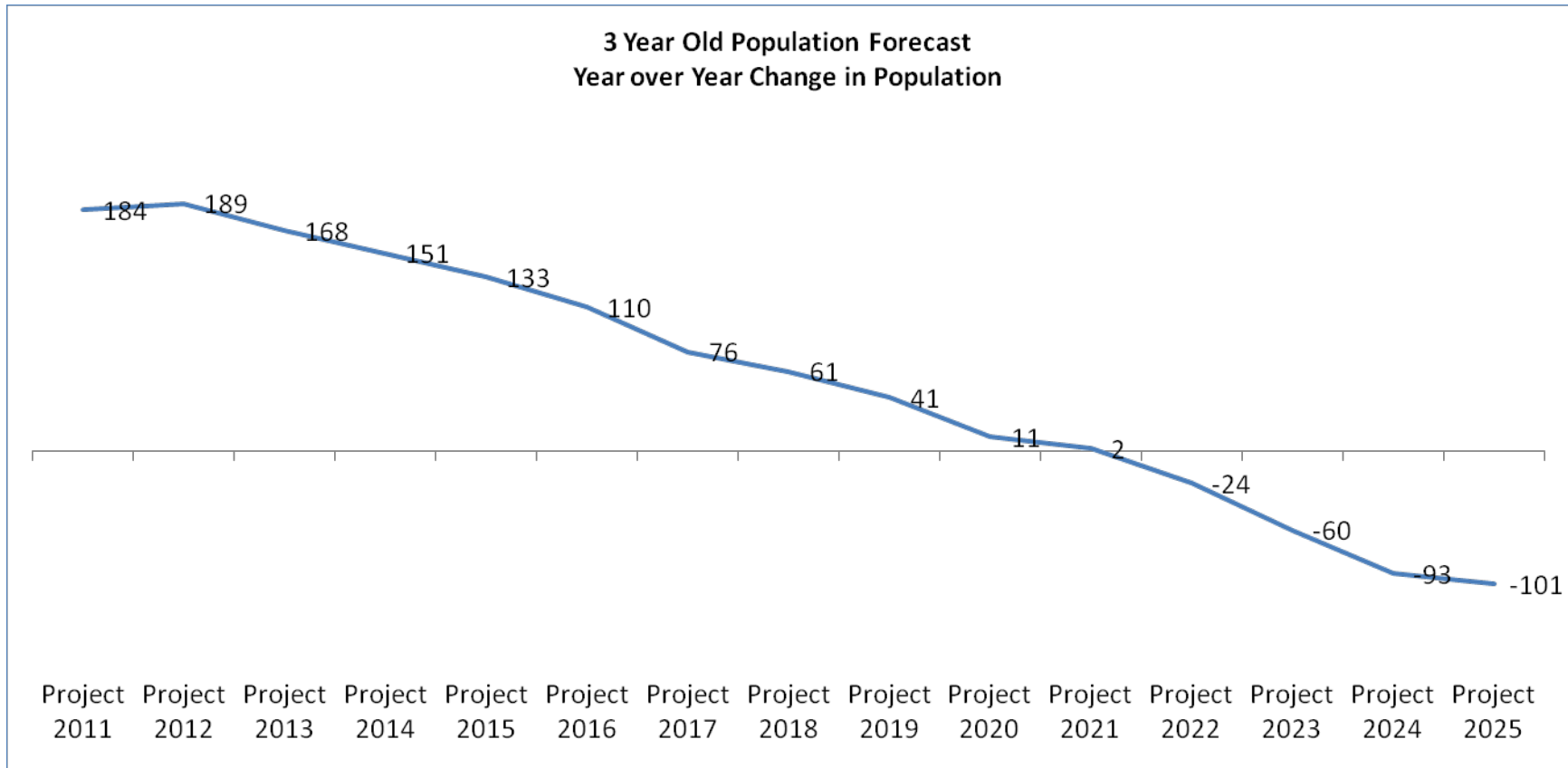 - Asperger's Syndrome is estimated between 1 in 300 to 1 in 500 - or about 22% to 37% of all autism cases

There fore…

All Other ~1141
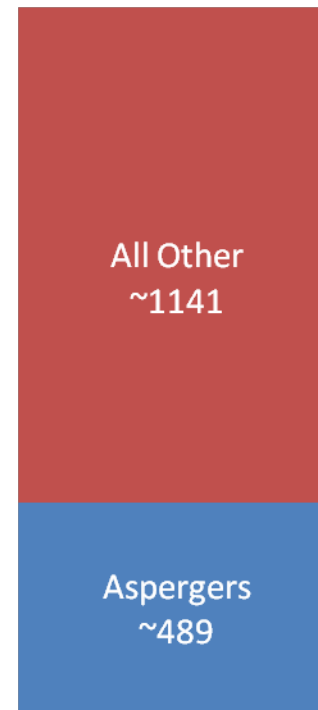
Aspergers ~489

•Prevalence of Autism Spectrum Disorders --- Autism and Developmental Disabilities Monitoring Network, United States, 2006
•NP calculations using 30% estimate for Aspergers or the midpoint between the prevalence estimates
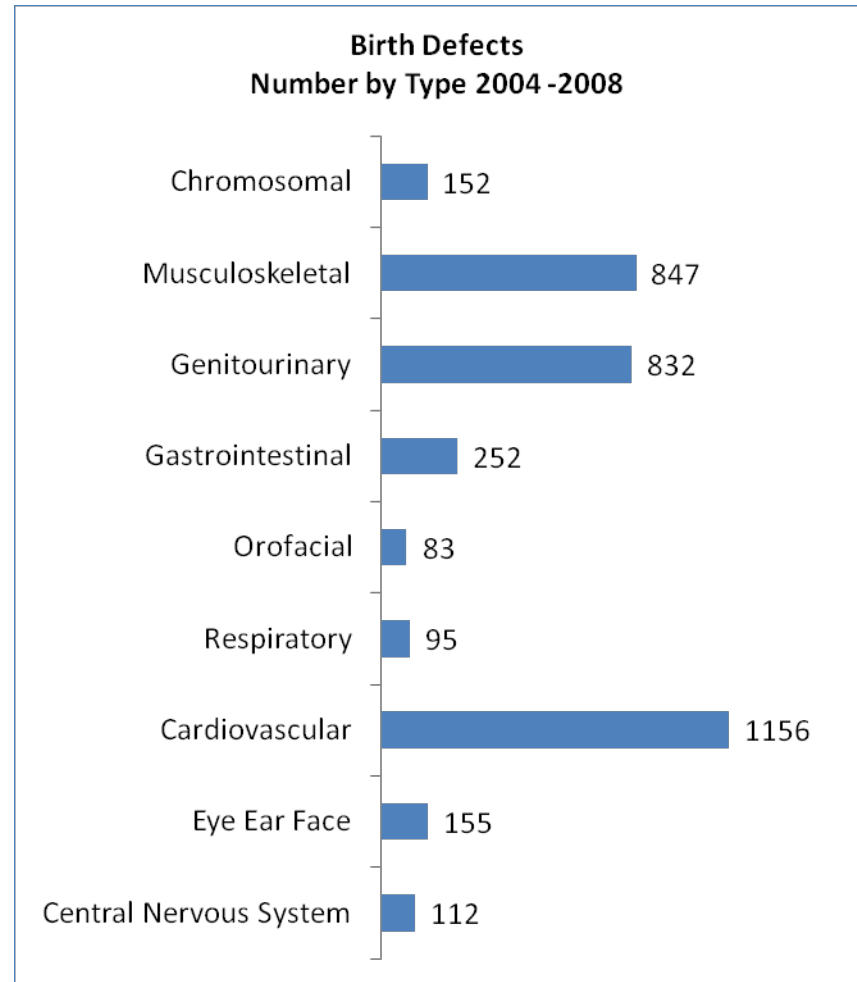
Demographic trends may help to slow the number of new autism cases as existing cases age out of the school systems and transition toward adulthood

3 Year Old Population Forecast
Year over Year Change in Population

184 189 168 151 133 110 76 61 41 11 2 -24 -60 -93 -101

Project 2011 | Project 2012 | Project 2013 | Project 2014 | Project 2015 | Project 2016 | Project 2017 | Project 2018 | Project 2019 | Project 2020 | Project 2021 | Project 2022 | Project 2023 | Project 2024 | Project 2025
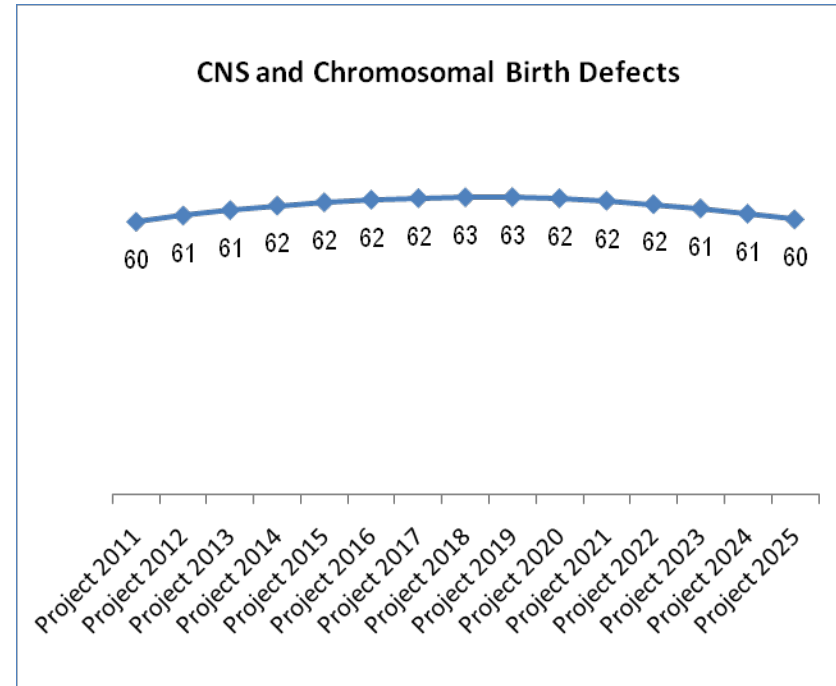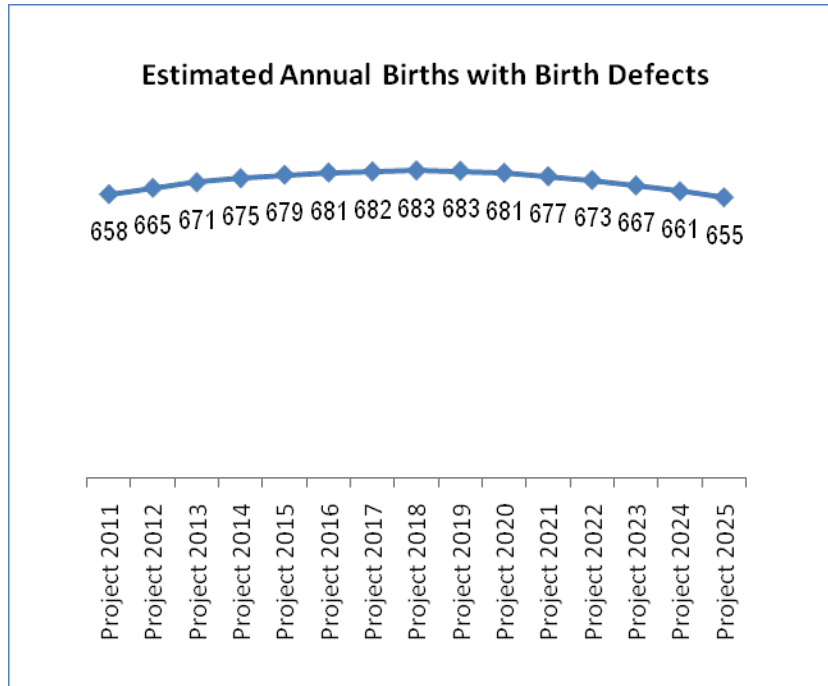
Source: NP analysis of Census Bureau data

Children with Birth Defects

- Between 2004 to 2008 RI recorded 2888 births with a major birth defect
- Public information does not indicate the severity of the disease in terms of continued medical support requirements
- Incidence rates for RI are approximately 480 per 10000 live births

Birth Defects
Number by Type 2004 -2008

Type	Number
Chromosomal	152
Musculoskeletal	847
Genitourinary	832
Gastrointestinal	252
Orofacial	83
Respiratory	95
Cardiovascular	1156
Eye Ear Face	155
Central Nervous System	112

Over the next several years children with special healthcare needs will likely see a steady increase before peaking in 2018 / 2019 assuming population forecasts hold

- It is also important to note that the caseload impact is cumulative
- Over 10 years it could potentially add as much as another 4700 cases over 7 years
- Potentially 400 to 500 cases could require long term care supports as well
- Note: based on WIH payer trends a large number possibly more than ½ are likely to be Medicaid

Estimated Annual Births with Birth Defects

658 665 671 675 679 681 682 683 683 681 677 673 667 661 655

Project 2011, Project 2012, Project 2013, Project 2014, Project 2015, Project 2016, Project 2017, Project 2018, Project 2019, Project 2020, Project 2021, Project 2022, Project 2023, Project 2024, Project 2025

CNS and Chromosomal Birth Defects

60 61 61 62 62 62 62 63 63 62 62 62 61 61 60

Project 2011, Project 2012, Project 2013, Project 2014, Project 2015, Project 2016, Project 2017, Project 2018, Project 2019, Project 2020, Project 2021, Project 2022, Project 2023, Project 2024, Project 2025

Source: NP calculations based on RI Health Department data

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Resource Map and "Woodwork" Potential

Resource Map and "Woodwork" Potential

▪ While Alzheimer's may not have a major potential impact on RI Medicaid going forward due to demand there are indications of the potential for substantial latent demand

Service Type	Day Capacity	Annual Capacity	Estimated Annual Potential Demand	Demand Difference / Wood Work Potential	Required Beds
Ventilator Beds	30	10,403	14,696	4,294	12
Alzheimer NH Beds	407	141,127	434,350	293,223	803
Alzheimer Asst Liv Beds	773	268,038	841,325	573,287	1,571

Note: Day capacity includes licensed capacity

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Planning Model Methodology Description

Ventilator Beds:

The number of long-term ventilator beds in each health systems region required to meet the public need shall be determined by dividing the projected annual patient days for the service by three hundred and sixty-five (365), and dividing the result by 0.95 to allow for a ninety-five percent occupancy rate. The projected long-term ventilator patient days used in this calculation shall be determined as follows:

(i) The annual number of potential candidates for long-term ventilator beds shall be determined by calculating the total number of annual general hospital discharges in the planning area for DRG 207 (respiratory system diagnosis with ventilator support 96+ hours,) plus an additional ten percent, and multiplying the resulting figure by 0.32.

(ii) The number of potential candidates for long-term ventilator beds shall be multiplied by a 125-day length-of-stay to project the annual number of patient days for long-term ventilator patients.

Source: NY state Certificate of Need calculation model guidance for long term ventilator beds

Planning Model Methodology Description

Alzheimer Nursing Home Beds:

Population Estimate Basis

I1q: Disease Diagnoses - Diseases - Neurological - Alzheimer's disease

State	This disease does not apply to this resident	This disease applies to this resident	State Total	Residents With Total
Rhode Island	84.60%	15.40%	7,728	1190.112

Demand equals: 1190*365= 434,350

What this implies is that current demand for Alzheimer care is being met by non Alzheimer "units"

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Planning Model Methodology Description

Alzheimer Assisted Living Beds:

Population base

> 5800 "severe" alzheimer –
> 1190 alzheimer nursing
> home patients =
> 4610 patients

Potential Bed Demand

> (4610 * 365 days)*.50
> (resident turnover rate) =
> 841,325 days

Note: this only represents demand from "severe" patients – moderate patients represent another 7440 people or 2.7 million days of care annually

Annual Capacity

> (773 beds * 365 days) *.95
> capacity = 268,035

Woodwork Potential

> 841,325 – 268,035 = 573,287

Care demands are clearly being met in part by unpaid caregivers

- The Alzheimer Association, based on estimates derived from the National Alliance of Care Giving and AARP studies, that nearly 36000 people in RI provide an estimated 30.4 million hours of unpaid care to Alzheimer patients at an estimated cost of $338 million
  - Equals 863 hours per year per volunteer person

Translation to HCBS equivalent
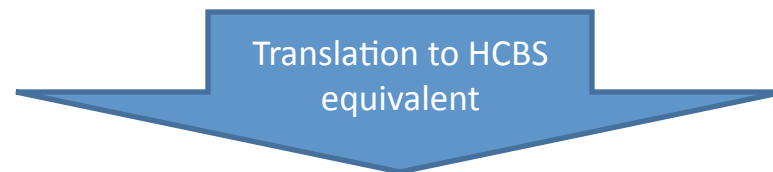
Assuming a 37.5 hour week with 30 hours of productive time for 50 weeks a year equals 1500 hours per year of available care capacity per HCBS worker
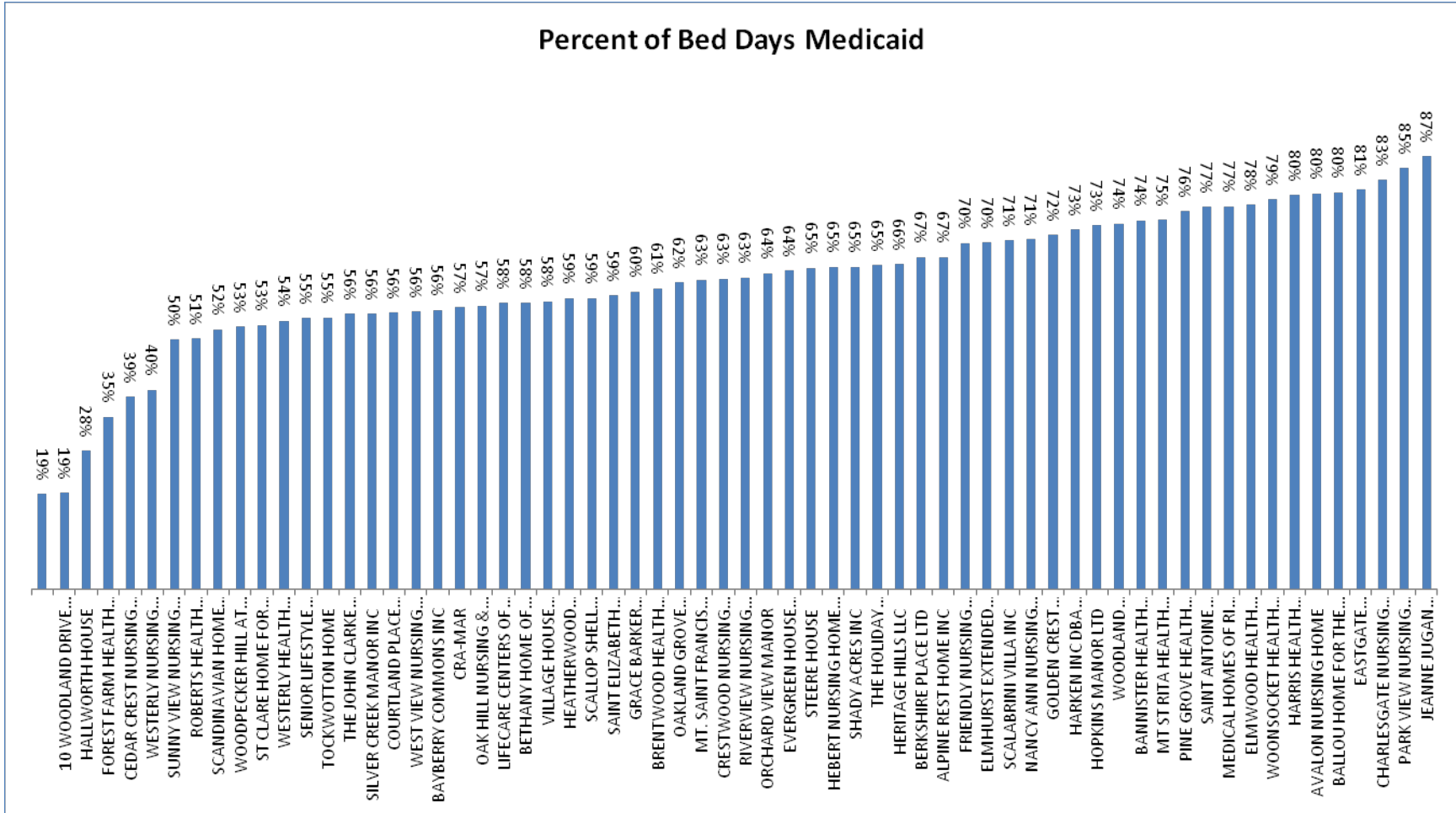
Implication

To provide equivalent amount of care on a paid basis would require 20,266 HCBS workers

In 2009 Home Health Care Services & Services to the Elderly and Disabled employed approximately 5585 people

Medicaid Resource Access
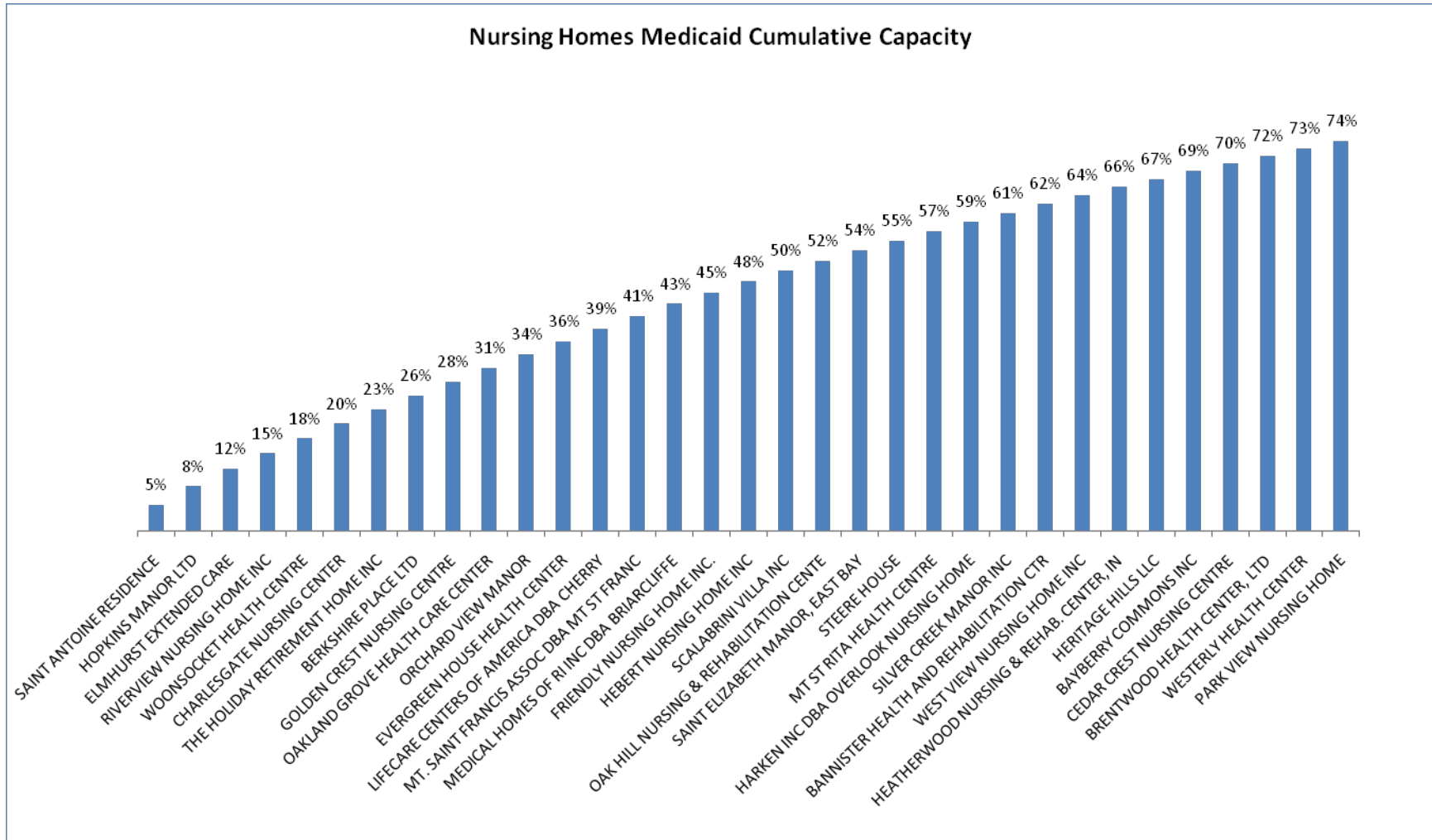
Medicaid Nursing Home Bed Penetration

- Note analysis only reflects matches between Medicaid and Medicare data

Percent of Bed Days Medicaid

Source: NP calculations based on RI Medicaid Claims Extract and CMS Nursing Home data matches

Medicaid nursing home bed capacity

Nursing Homes Medicaid Cumulative Capacity

Key Service Implications

Findings & Implications for RI

Findings

- RI is a beneficiary of favorable demographic trends over the next 10 years
  - RI "aged out" earlier than the country
  - Essentially flat organic population growth
  - RI is not a net in-migration state
- RI should not experience a major expansion of service demand for several populations such as alzheimer's/dementia or mental health services for SPMIs
  - However, how much of these populations Medicaid absorbs is a function of changes in policy

Implications

- RI system rebalancing will not be able to take advantage of population growth within age categories to migrate the system from an institutionally driven system to a community-based system
- Slow population growth creates capacity development problems due to the step function nature of the capacity unless capacity development is concentrated in a few providers
- Several specialty population groups need to be actively monitored
  - Ventilator patients
  - Autism

> One area RI needs to evaluate is the potential impact on changes in marital status may have on future demand for support services