

Demographic Profiles, Population Projections and Utilization Projections for Vermont Long-term Services and Supports

Presentation for DAIL Advisory Board September 14, 2017

Prepared for:
VT Department of Disabilities, Aging and
Independent Living (DAIL)

By:
The University of Massachusetts Medical School
Center for Health Law and Economics
<http://chle.umassmed.edu>

Contents



Scope of Project

- Scope of Project

-
- Vermont DAIL contracted with UMass Medical School in late 2014 to produce a report of:
 - Profiles of current and projected demographics
 - Profiles of current and projected service utilization
 - Objective is to provide data in support of planning for future Long-Term Services and Supports (LTSS) needs in Vermont

Key Findings

Results

- **Key Findings**
- Examples of Work Performed

-
- About 11% of the Vermont population currently has a cognitive disability, functional disability, or both
 - Varies by county
 - Bennington, Caledonia, Essex have highest rates (14%); Chittenden has lowest rate (8%)
 - Projections vary depending on the assumptions used for overall population growth, but the numbers of people with disability may decrease slightly by 2030

Key Findings (*continued*)

Overall, the Vermont population under age 65 is projected to decline, while the population aged 65+ is growing. However, if current service use trends continue, we project:

- Choices for Care participants
 - aged 18-64 will *increase*
 - aged 65-84 will remain about the *same*
 - aged 85+ will remain the *same* or decrease slightly
- Developmental Disabilities Service participants
 - aged 18-64 will *increase* considerably
 - aged 65-84 will *increase* considerably

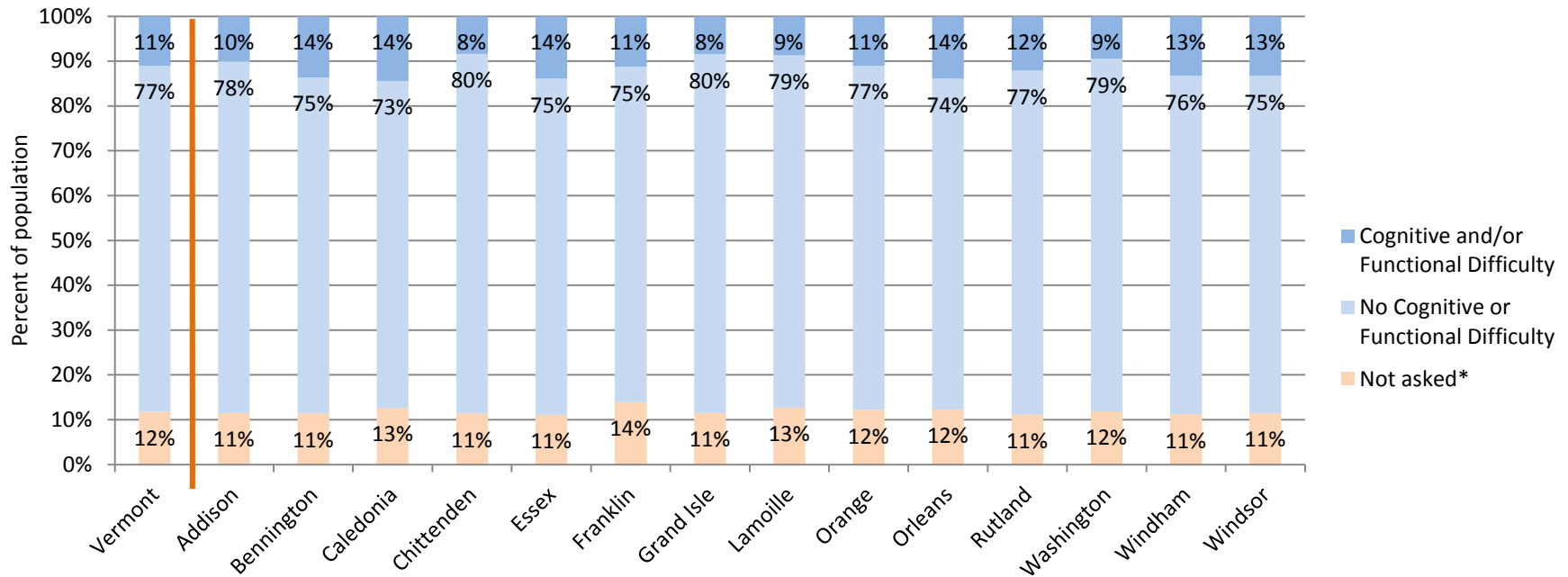
Phase One: Current Demographic Profile

Our method:

- Most of this data is from the American Community Survey
- We customized the definition of disability to generate results more targeted to DAIL's program and planning needs

Disability

Percent of population with cognitive or functional difficulty, statewide and by county



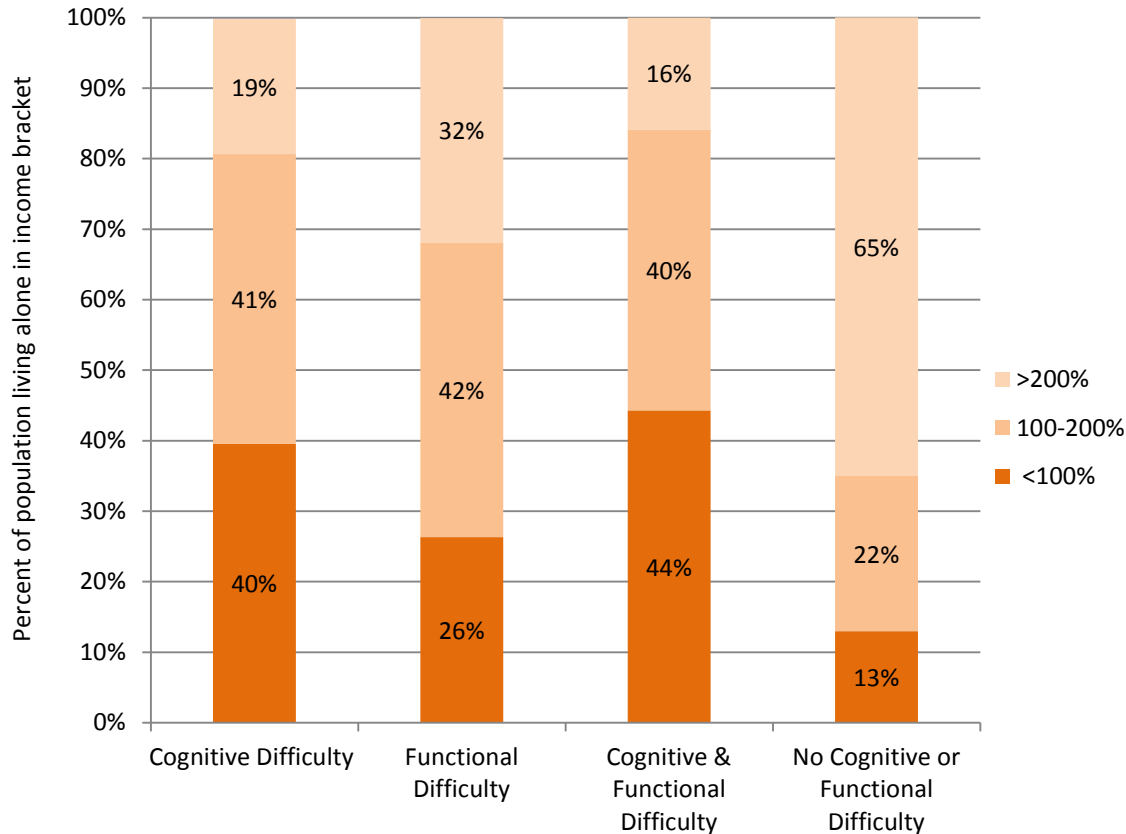
In Vermont, 12% of the population had a cognitive and/or a functional difficulty. For counties, the rates ranged from a high of 14% in Bennington, Caledonia, Essex and Orleans counties, to a low of 8% in Chittenden and Grand Isle counties.

**The Census does not ask whether children under 5 have cognitive difficulties and whether children under 15 have functional difficulties*

Data source: Custom ACS data requested from the U.S. Census Bureau, based on 2009-2013 five-year estimates.

Income by disability (living alone)

Percent of population living alone with income below 100% FPL, 100-200% FPL, and above 200% FPL, by disability status (statewide)



Statewide, people with cognitive and/or functional difficulties who lived alone were more likely to live in poverty than people without either difficulty.

While 13% of the population without difficulties lived in poverty, the rate was double for people with functional difficulties and 40% or more for those with cognitive difficulties.

Data source: Custom ACS data requested from the U.S. Census Bureau, based on 2009-2013 five-year estimates.



Phase Two: Population Projections

Our method:

- Assumed the same percentage of people in each age and income bracket today will be there in the future
- Applied Ken Jones' projections and used that as our foundation
- Two population growth scenarios were used to develop the models:
 - Scenario A is projected using 1990s data and assumes a greater level of migration and a stronger economy overall in the state of Vermont
 - Scenario B is projected using 2000s data and assumes less migration and a weaker economy overall
- Based on conversations with JFO staff, “Scenario B” has trended more closely to actual

Phase Two: Population Projections

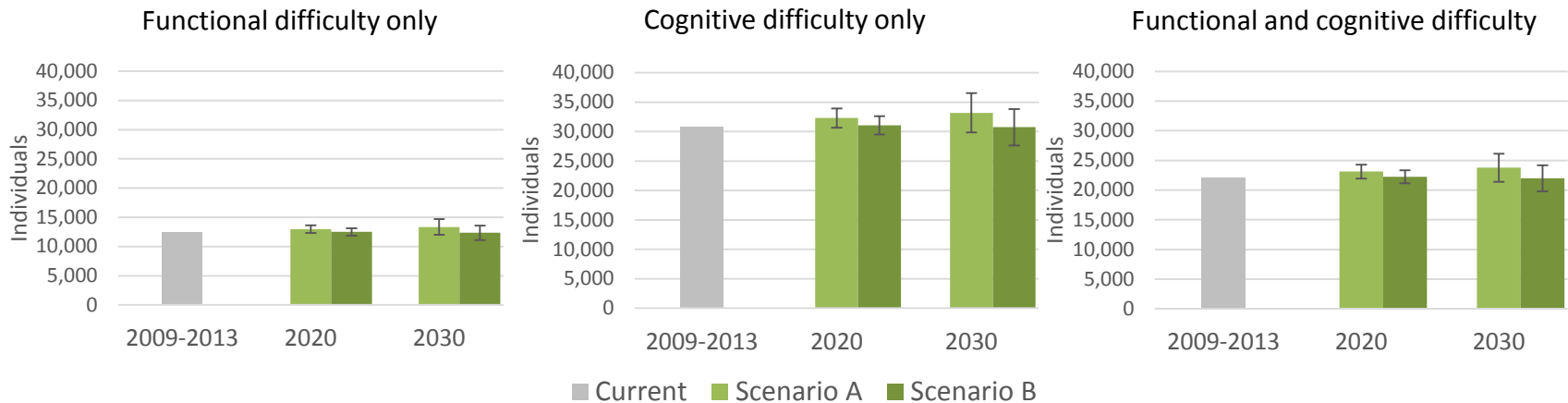
(continued)

Caveats

- Projections, not predictions
- Census populations: not the actual number of inhabitants at a given time
- Statistical limitations when working with relatively small population sizes

Disability

Projected number of individuals by disability status in 2020 and 2030, in Vermont



Error bars reflect high and low projections, estimated using a methodology by Smith and colleagues (2008).

Scenario A is projected using 1990s data and assumes a greater level of migration and a stronger economy overall in the state of Vermont.

Scenario B is projected using 2000s data and assumes less migration and a weaker economy overall.

In Vermont, the number of individuals with functional difficulties only is projected to increase by between 100 and 600 individuals by 2020, and either increase by 900 under Scenario A or decrease by 40 individuals under Scenario B by 2030, compared to 2009-2013.

The number of individuals with cognitive difficulties only is projected to increase by between 200 and 1,500 individuals by 2020, and either increase by 2,400 under Scenario A or decrease by 100 individuals under Scenario B by 2030, compared to 2009-2013.

The number of individuals with both functional and cognitive difficulties is projected to increase by between 200 and 1,000 individuals by 2020, and either increase by 1,700 individuals under Scenario A or decrease by 80 individuals under Scenario B by 2030, compared to 2009-2013.

For data on individuals with 'Neither difficulty', please see accompanying Excel databook.

Figures have been rounded to the nearest hundred (100) or ten (10).

Phase Three: LTSS Utilization Projections

Results

- Key Findings
- **Examples of Work Performed**

Today's focus:

Service use in Vermont: current and projected

1. Choices for Care (CFC)
2. Developmental Disabilities Services (DDS)

Phase Three: LTSS Utilization

Our method:

Calculations used both current and historical rates of service use as well as expected changes in Vermont's population by age group

Projected future service use in two ways:

- The **'age trend'** approach estimates future service use based on the expected population size by age group in a future year; this approach assumes that rates of service use remain constant from the base year (2016) to the future projected year
- The **'age + service trends'** approach estimates future service use based on both the expected population size by age group in a future year as well as expected service use in that year; this approach applies historical trends in service use to project service use rates in the future
- Within the Choices for Care program, we further estimate the number of users of Nursing facility, Enhanced Residential Care, and Home and Community-based Services

Phase Three: LTSS Utilization *(continued)*

Service use rate: the number of individuals who used a service divided by the total population in a single year; we calculate service use rates by service, by age group and by state/county.

- *Example:* 667 individuals aged 18-64 used Choices for Care (CFC) services in 2008, out of a total Vermont population of 405,343 in that age group, producing a service use rate of 0.16%

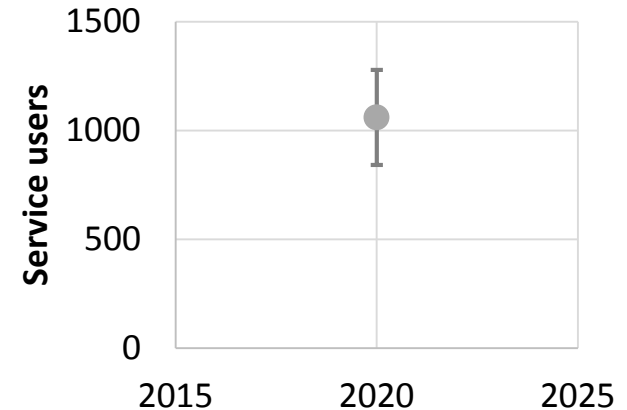
Service use trend: the average annual change in service use rates over a number of years; we calculate service use rates by service, by age group and by state/county

- *Example:* Service use trend for CFC services among individuals aged 18-64 years statewide is 4.7% per year

	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average
CFC statewide Service use rate	0.16%	0.17%	0.18%	0.18%	0.19%	0.20%	0.21%	0.23%	0.24%	
Percent change in service use rate over previous year		2.87%	3.55%	1.38%	6.94%	3.45%	4.53%	9.93%	4.74%	4.67% / year

Phase Three: LTSS Utilization (*continued*)

High and low estimates: To better show the potential variability inherent in any projection, we first estimated the number of service users in 2020 and 2030 using the methods described above (indicated by the dot in the graph). To compute the high and low estimates, we calculated the number of users based on a service use rate that is 5% higher and lower for 2020 and 10% higher and lower for 2030 (indicated by the horizontal ends of the line), compared to the 2016 rate. The vertical lines thus represents the range between low and high estimates of potential users.



For further details on calculations, please see Technical Appendix

Phase Three: LTSS Utilization *(continued)*

Statewide historical trends in service use rate

Representing the average decrease or increase per year in the “service use rate” during 2008-2016.

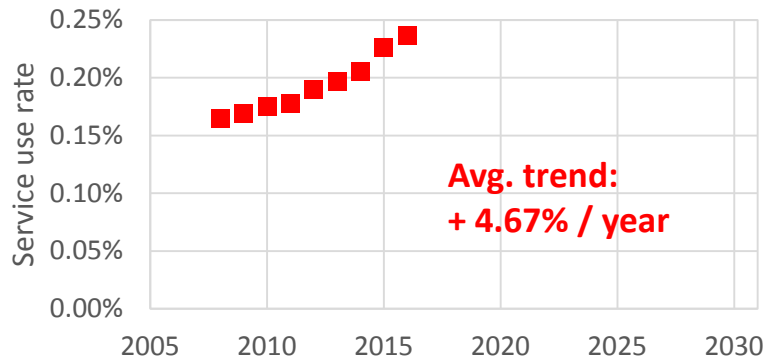
- **Service use rate:** Program users in an age category divided by total number of individuals in state population for that age category

	Age group			
Service	0-17	18-64	65-84	85+
Choices for Care	-	↑ 4.67%	↓ -2.76%	↓ -3.62%
Developmental Disabilities	Not trended	↑ 4.57%	↑ 3.29%	Not projected

Guide to reading data projection slides

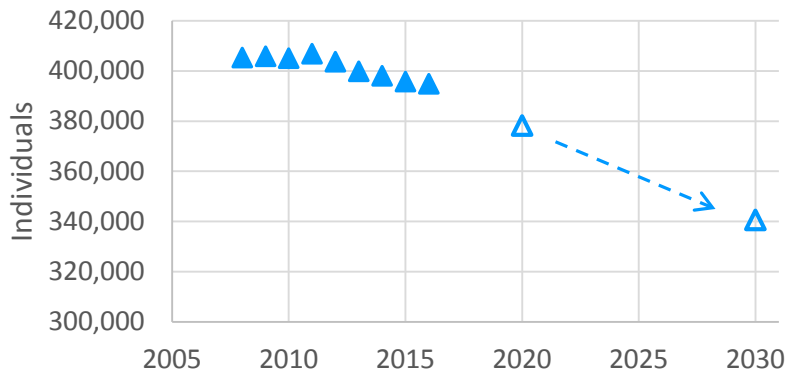
A. Service trend:

Service use rate (service users/population) for individuals in a given age group during 2008-2016, in Vermont



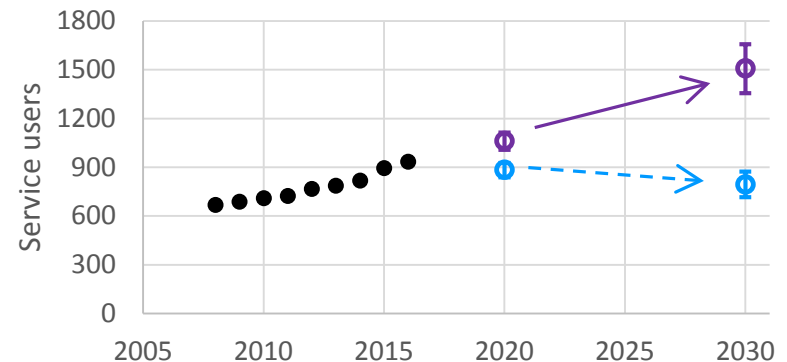
B. Age trend:

Number of individuals (population) in a given age group during 2008-2016, in Vermont



C. Service users:

Number of individuals receiving services during 2008-2016, with 2020 and 2030 projections shown using two methods



The two methods used above are:

- The 'Age trend' projection (dashed line) incorporates the 'Age trend' (B) only
- The 'Age + service trend' projection (continuous line) incorporates both the 'Service trend' (A) and the 'Age trend' (B)

Filled symbols indicate actual (known) data points; open symbols indicate projected (estimated) values.

Results

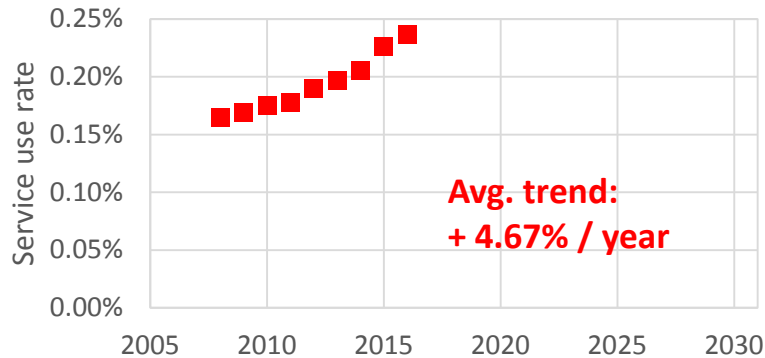
- Key Findings
- **Examples of Work Performed**

LTSS Utilization Projections for Choices for Care

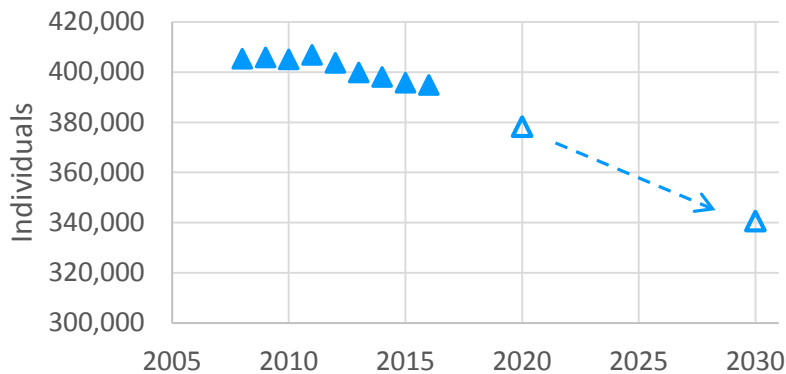
Choices for Care (CFC), aged 18-64

The population aged 18-64 is declining in Vermont, but the proportion of individuals in that age group that use CFC is increasing. If this service use trend continues, up to 60% *more* individuals aged 18-64 will use CFC services in 2030.

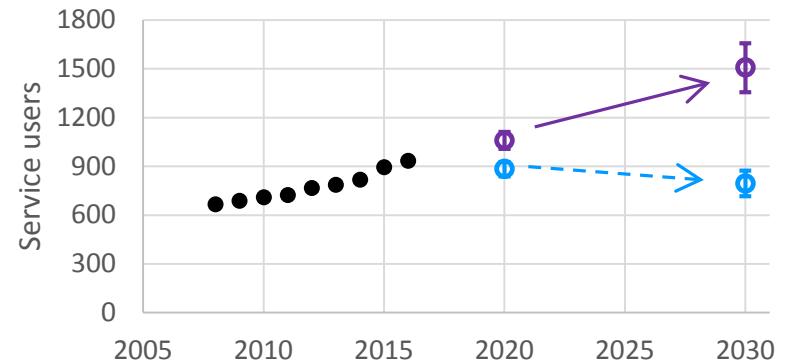
A. Service trend, 18-64 population



B. Age trend with projection, 18-64 population



C. Service users aged 18-64



	Current (2016)	Projection (2020)	Projection (2030)
Actual	934		
Projection: Age trend		883	795
Projection: Age + service trend		1,060	1,507

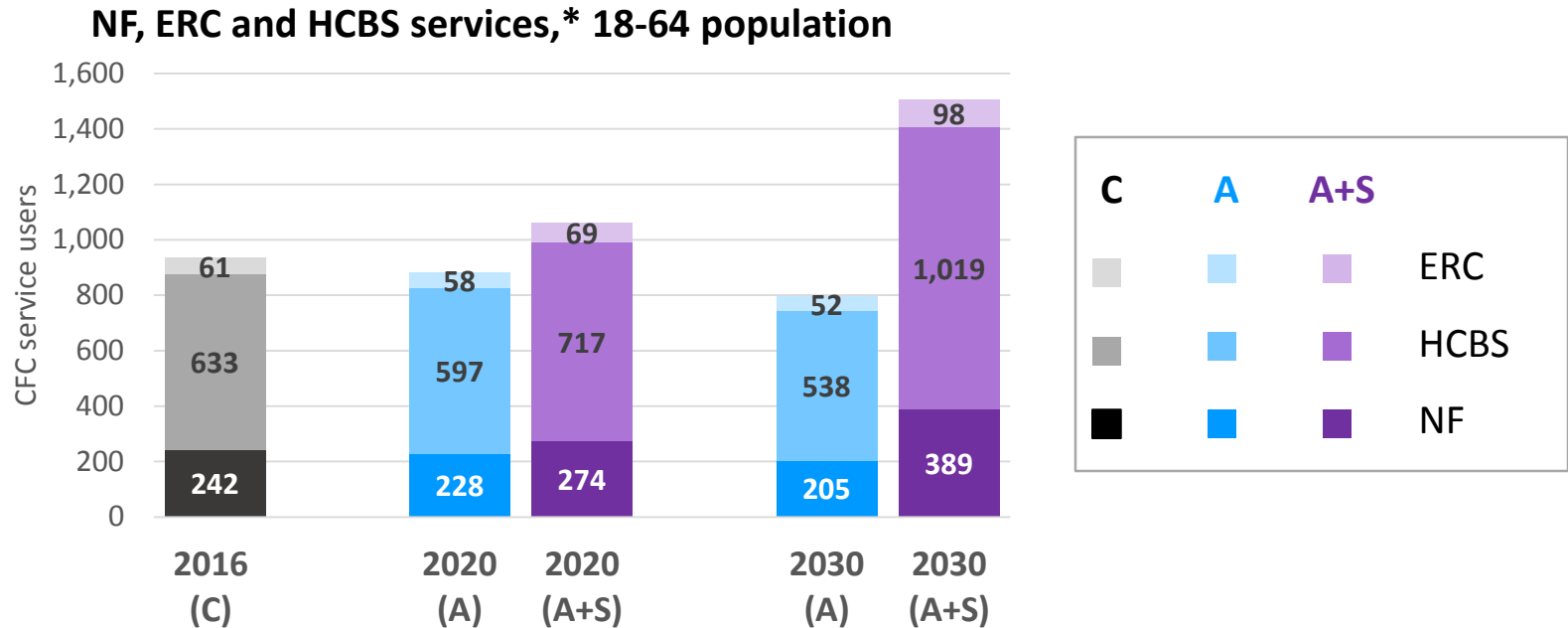
A. Service use rate for individuals aged 18-64 using CFC services including NF, ERC and HCBS services 2008-2016

B. Total Vermont population aged 18-64 in 2008-2016 (actual); 2020 and 2030 (projected)

C. Number of individuals aged 18-64 receiving CFC in 2016 (current), 2020 and 2030 (projected), in Vermont

CFC: Nursing Facility (NF), Enhanced Residential Care (ERC) and Home and Community Based Services (HCBS), aged 18-64

This chart presents the expected number of users of each service type, assuming the proportion of CFC users who use each of these three service types remains constant.



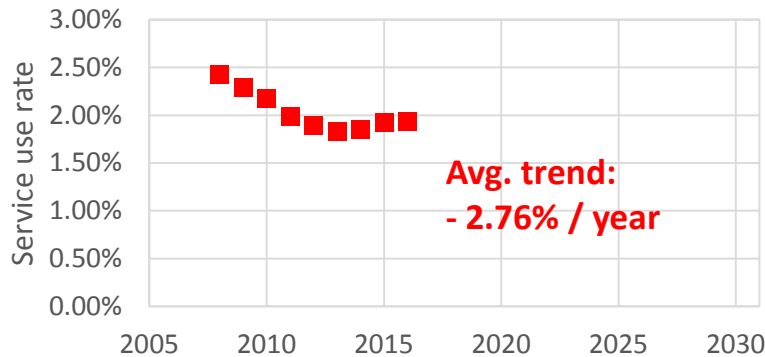
- (C) Current users (2016)
- (A) 'Age trend' projections
- (A+S) 'Age + service trend' projections

* Projections for these services are calculated by multiplying the total number of projected CFC users by the ratio of users in each service category relative to the overall number of CFC users in 2016. These ratios were ERC 7%, HCBS 68%, NF 26% (Vermont, 18-64 years).

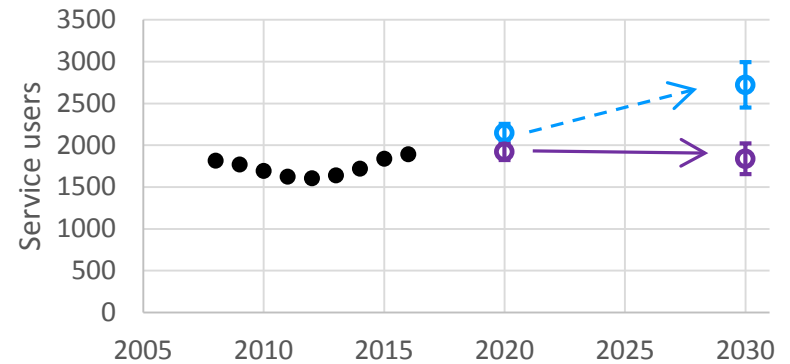
Choices for Care (CFC), aged 65-84

The population aged 65-84 is increasing in Vermont, but the proportion of individuals in that age group that use CFC is decreasing. If this service use trend continues, approximately the *same* number of individuals aged 65-84 will use CFC services in 2030 as do today.

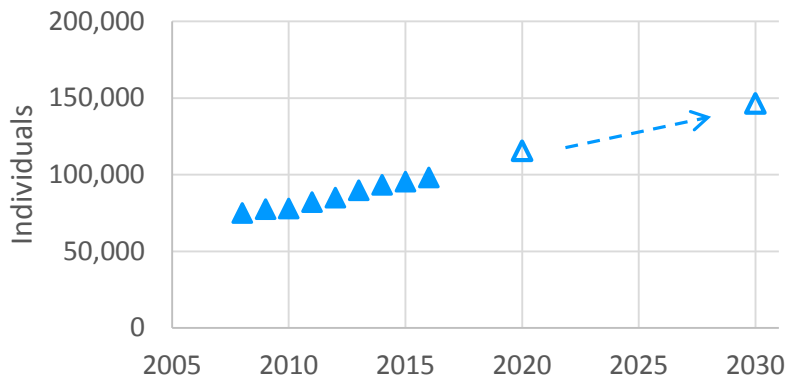
A. Service trend, 65-84 population



C. Service users aged 65-84



B. Age trend with projection, 65-84 population



	Current (2016)	Projection (2020)	Projection (2030)
Actual	1,893		
Projection: Age trend		2,149	2,722
Projection: Age + service trend		1,922	1,839

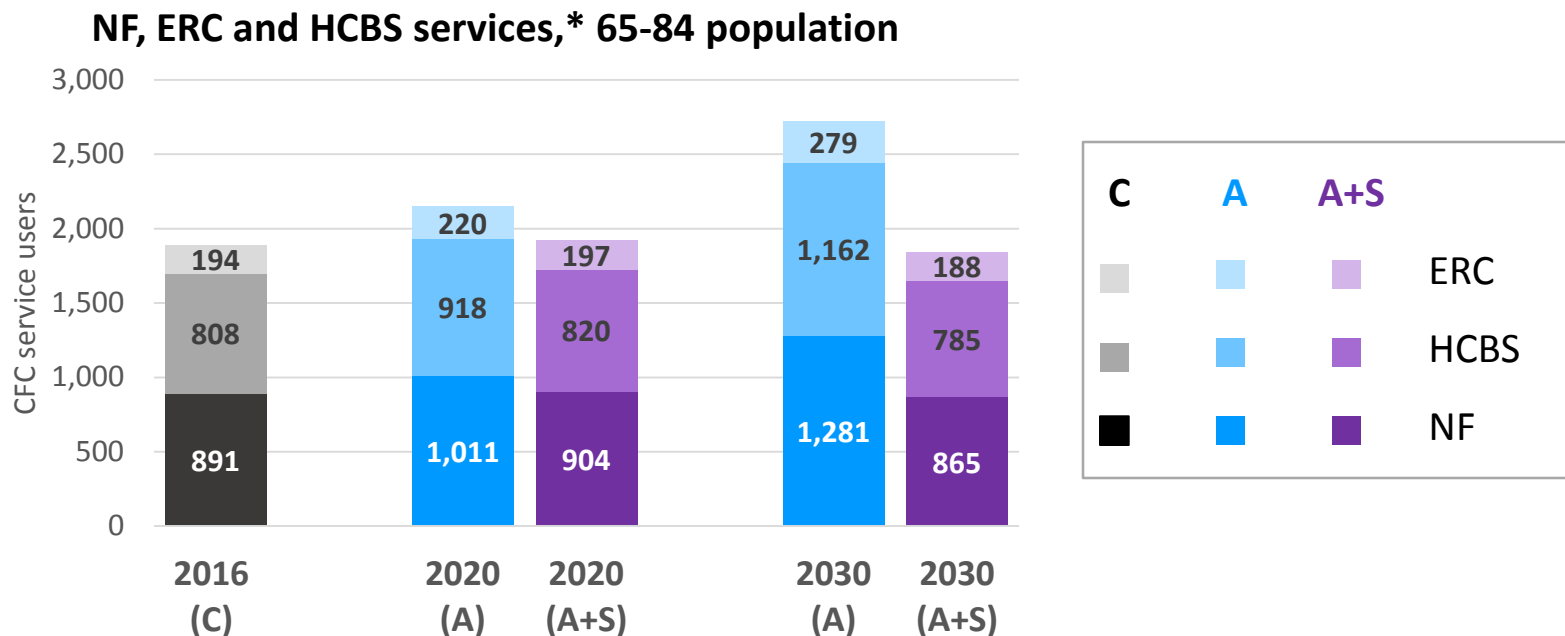
A. Service use rate for individuals aged 65-84 using CFC services including NF, ERC and HCBS services 2008-2016

B. Total Vermont population aged 65-84 in 2008-2016 (actual); 2020 and 2030 (projected)

C. Number of individuals aged 65-84 receiving CFC in 2016 (current), 2020 and 2030 (projected), in Vermont

CFC: Nursing Facility (NF), Enhanced Residential Care (ERC) and Home and Community Based Services (HCBS), aged 65-84

This chart presents the expected number of users of each service type, assuming the proportion of CFC users who use each of these three service types remains constant.



(C) Reflects current (actual) number of users in 2016

(A) Reflects 'Age trend' projections

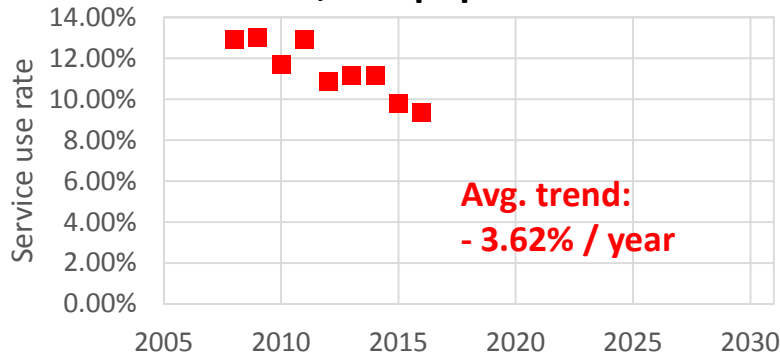
(A+S) Reflects 'Age + service trend' projections

* Service use trends were not calculated for NF, ERC or HCBS services. Projections for these services rely on the overall CFC (NF+ERC+HCBS) service use trend 2008-2016 and the 2016 service mix for each service (% of total CFC services), as follows: ERC 10%, HCBS 43%, NF 47% (Vermont, 65-84 years).

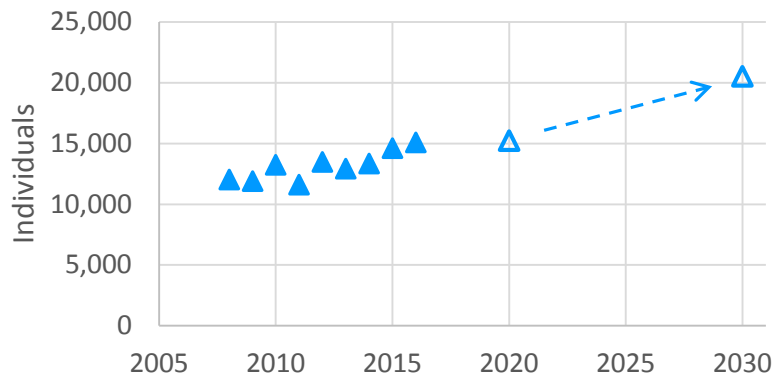
Choices for Care (CFC), aged 85+

The population aged 85+ is increasing in Vermont, but the proportion of individuals in that age group that use CFC is decreasing. If this service use trend continues, approximately the *same* number of individuals aged 85+ will use CFC services in 2030 as do today. The number of CFC users could even decline slightly.

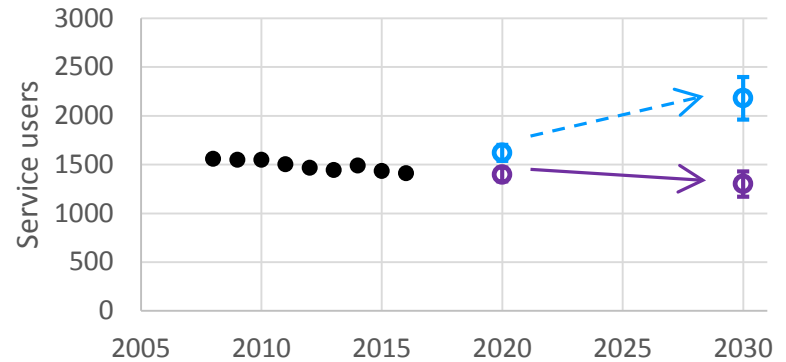
A. Service trend, 85+ population



B. Age trend with projection, 85+ population



C. Service users aged 85+



	Current (2016)	Projection (2020)	Projection (2030)
Actual	1,413		
Projection: Age trend		1,620	2,181
Projection: Age + service trend		1,398	1,301

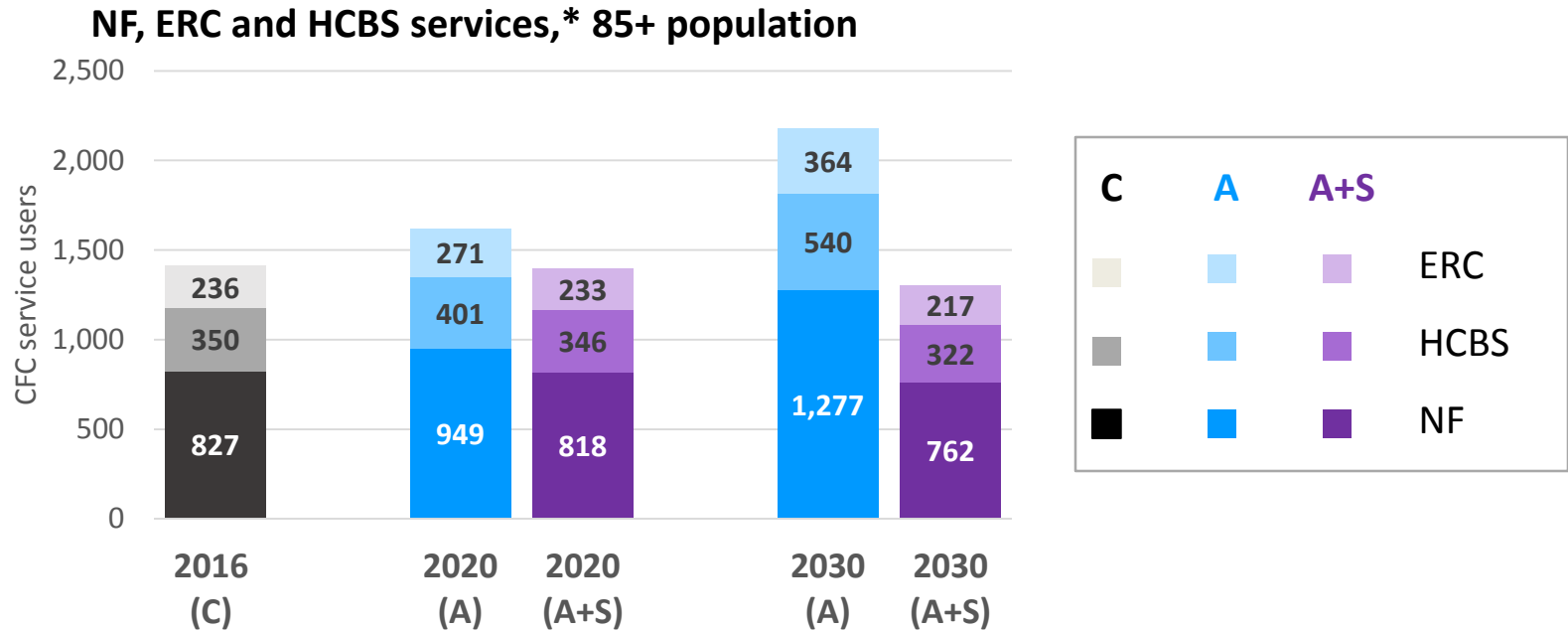
A. Service use rate for individuals aged 85+ using CFC services including NF, ERC and HCBS services 2008-2016

B. Total Vermont population aged 85+ in 2008-2016 (actual); 2020 and 2030 (projected)

C. Number of individuals aged 85+ receiving CFC in 2016 (current), 2020 and 2030 (projected), in Vermont

CFC: Nursing Facility (NF), Enhanced Residential Care (ERC) and Home and Community Based Services (HCBS), aged 85+

This chart presents the expected number of users of each service type, assuming the proportion of CFC users who use each of these three service types remains constant.



(C) Reflects current (actual) number of users

(A) Reflects 'Age trend' projections

(A+S) Reflects 'Age + service trend' projections

* Service use trends were not calculated for NF, ERC or HCBS services. Projections for these services rely on the overall CFC (NF+ERC+HCBS) service use trend 2008-2016 and the 2016 service mix for each service (% of total CFC services), as follows: ERC 17%, HCBS 25%, NF 59% (Vermont, 85+ years).



Results

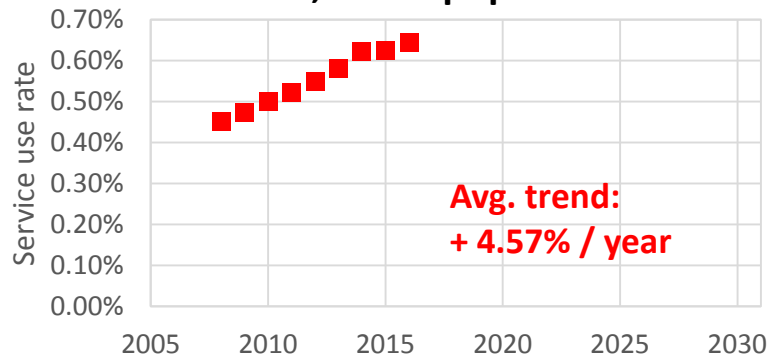
- Key Findings
- **Examples of Work Performed**

LTSS Utilization Projections for **Developmental Disabilities Services**

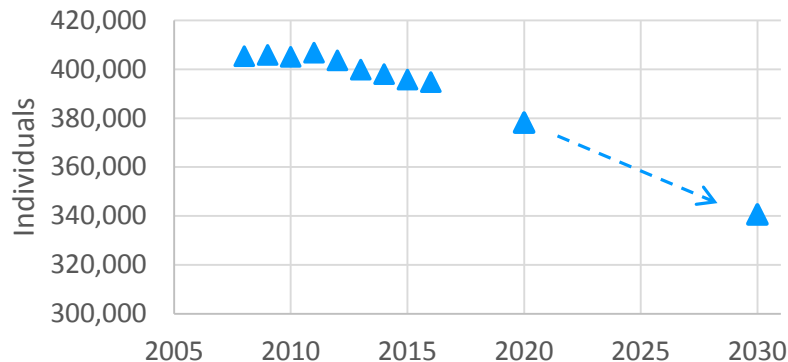
Developmental Disabilities Services (DDS), 18-64

The population aged 18-64 is declining in Vermont, but the proportion of individuals in that age group that use DDS is increasing. If this service use trend continues, up to 60% *more* individuals aged 18-64 will use DDS in 2030.

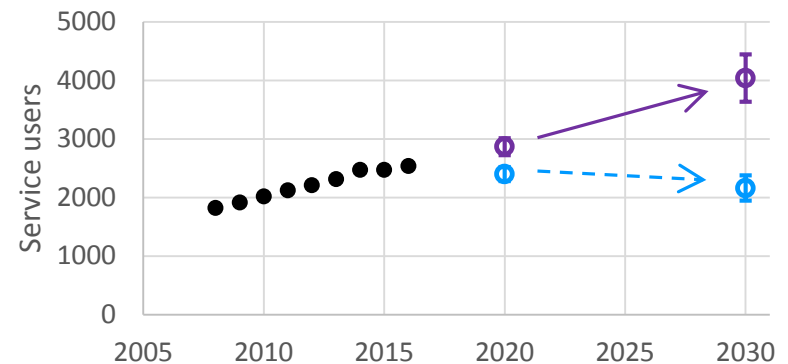
A. Service trend, 18-64 population



B. Age trend with projection, 18-64 population



C. Service users aged 18-64



	Current (2016)	Projection (2020)	Projection (2030)
Actual	2,540		
Projection: Age trend		2,401	2,162
Projection: Age + service trend		2,870	4,040

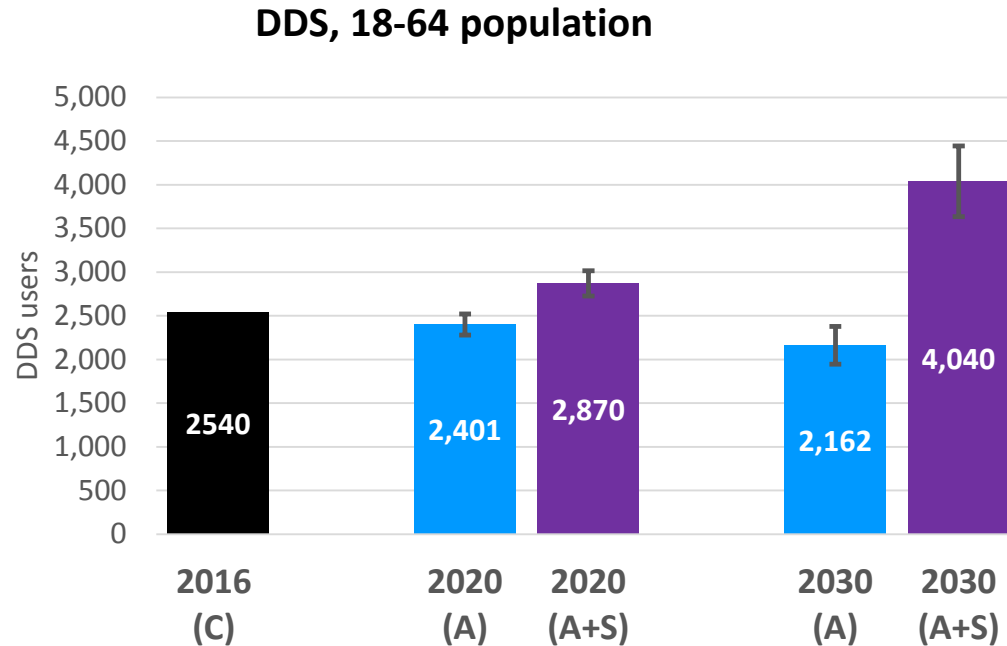
A. Service use rate for individuals aged 18-64 using DDS during 2008-2016

B. Total Vermont population aged 18-64 in 2008-2016 (actual); 2020 and 2030 (projected)

C. Number of individuals aged 18-64 receiving DDS in 2016 (current), 2020 and 2030 (projected), in Vermont

Developmental Disabilities Services (DDS), 18-64

The population aged 18-64 is declining in Vermont, but the proportion of individuals in that age group that use DDS is increasing. If this service use trend continues, up to 60% *more* individuals aged 18-64 will use DDS in 2030.



(C) Reflects current (actual) number of users

(A) Reflects 'Age trend' projections

(A+S) Reflects 'Age + service trend' projections

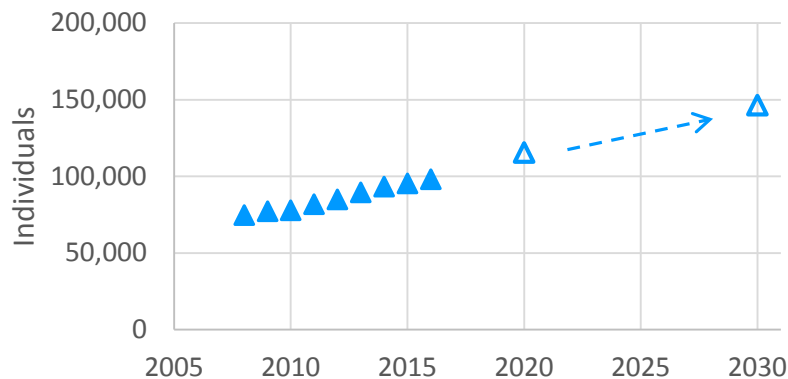
Developmental Disabilities Services (DDS), 65-84

The population aged 65-84 is increasing in Vermont, and the proportion of individuals in that age group that use DDS is increasing. We project the number of individuals aged 65-84 using DDS will *increase* from 2016 to 2030 by at least 45% and, if this service use trend continues, by as much as 130%.

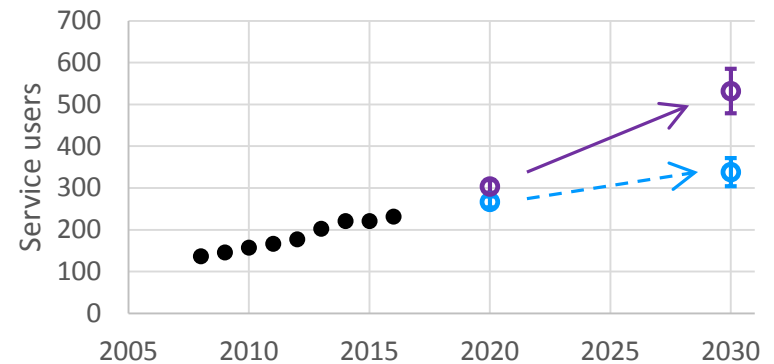
A. Service trend, 65-85 population



B. Age trend with projection, 65-85 population



C. Service users aged 65-85



	Current (2016)	Projection (2020)	Projection (2030)
Actual	232		
Projection: Age trend		267	338
Projection: Age + service trend		304	532

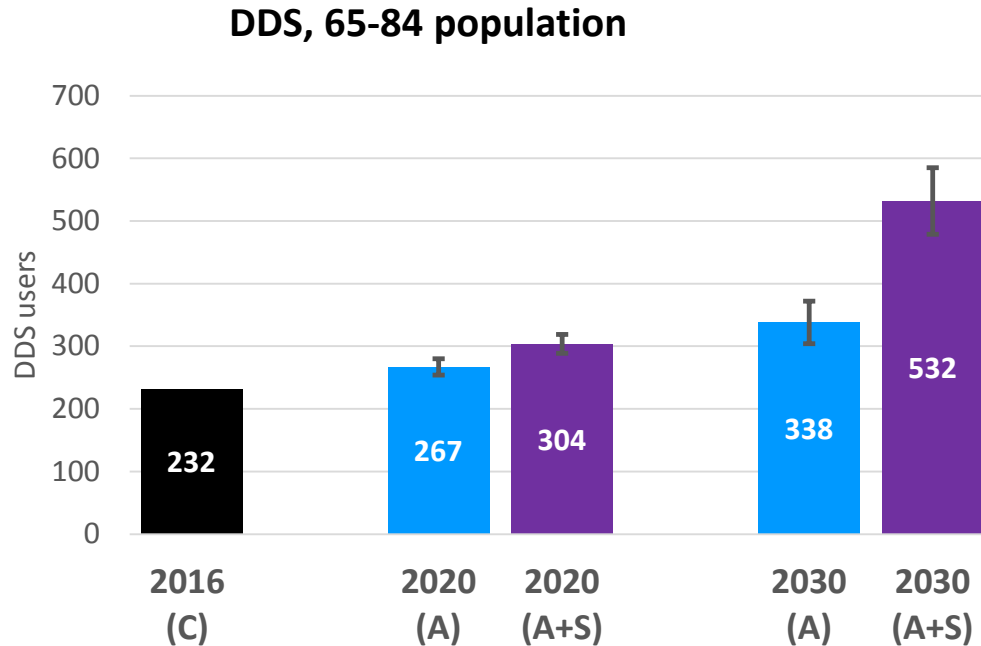
A. Service use rate for individuals aged 65-84 using DDS during 2008-2016

B. Total Vermont population aged 65-84 in 2008-2016 (actual); 2020 and 2030 (projected)

C. Number of individuals aged 65-84 receiving DDS in 2016 (current), 2020 and 2030 (projected), in Vermont

Developmental Disabilities Services (DDS), 65-84

The population aged 65-84 is increasing in Vermont, and the proportion of individuals in that age group that use DDS is increasing. We project the number of individuals aged 65-84 using DDS will *increase* from 2016 to 2030 by at least 45% and, if this service use trend continues, by as much as 130%.



(C) Reflects current (actual) number of users

(A) Reflects 'Age trend' projections

(A+S) Reflects 'Age + service trend' projections

Discussion

- **What we know**
- What we don't know
- Discoveries

What we know

- State has shrinking population; fewer younger, working age people for the caregiving workforce and more older people
- People with disabilities are more likely to have lower incomes
- Service utilization patterns vary widely between CFC (more people, shorter time enrolled) and DDS (fewer people, longer time enrolled)

Discussion *(continued)*

- What we know
- **What we don't know**
- Discoveries

What we don't know

- Whether rates of disability will increase or decrease
- Whether financial or functional eligibility requirements will change
- Whether poverty rates will change
- Whether new interventions (e.g. dementia treatment) or new service options (e.g. assistive technology) will impact future demand
- Whether future funding from federal/state government will be available
- Whether people age 65+ may become a greater part of the caregiving workforce

Discussion (*continued*)

- What we know
- What we don't know
- **Discoveries**

What we learned

- About 11% of the Vermont population currently has a cognitive disability, functional disability, or both
- Overall, the Vermont population under age 65 is projected to decline, while the population aged 65+, particularly age 85+, is projected to grow
- **If recent service use trends continue**, we project:

Choices for Care participants

- aged 18-64 will *increase*
- aged 65-84 will remain about the *same*
- aged 85+ will remain the *same* or decrease slightly

Developmental Disabilities Service participants

- aged 18-64 will *increase* considerably
- aged 65-84 will *increase* considerably

Discussion *(continued)*



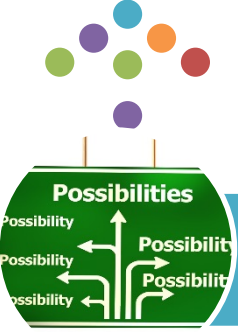
Gather data



Analyze



Knowledge



Action