



The Hilltop Institute

analysis to advance the health of vulnerable populations

Medicaid Long-Term Services and Supports (LTSS) in Mississippi: NCI-AD Response and Non-Response Groups Comparison

A Chart Book

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Abridged Version

Prepared for
Mississippi Division of Medicaid



UMBC
AN HONORS UNIVERSITY IN MARYLAND

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Overview of NCI-AD

This chart book compares national core indicators—aging and disabilities (NCI-AD) consumer survey respondents and non-respondents based on calendar year (CY) 2014 claims data to determine if there are any significant differences between the two groups. Specifically, the goal was to determine if the respondent's survey responses are generalizable to the broader waiver populations. The target population of the NCI-AD consumer survey is participants in waivers that focus on aging and physical disabilities.

The sample of respondents of the NCI-AD were drawn from the following waiver programs:

- *Assisted Living (AL) Waiver*
 - 206 NCI-AD respondents (180 with Medicaid claims out of 765 total participants)*
 - The AL Waiver serves assisted living facility residents aged 21 and older who have a disability
- *Elderly and Disabled (E&D) Waiver*
 - 323 NCI-AD respondents (322 with Medicaid claims out of 19,154 total participants)*
 - The E&D Waiver targets participants aged 65 and older, as well as participants aged 21-64, with a disability
- *Independent Living (IL) Waiver*
 - 293 NCI-AD respondents (267 with Medicaid claims out of 2,828 total participants)*
 - The IL Waiver targets participants who are 16 years or older who have severe orthopedic and/or neurological impairments
- *Traumatic Brain Injury/Spinal Cord Injury (TBI/SCI) Waiver*
 - 113 NCI-AD respondents (107 with Medicaid claims out of 951 total participants)*
 - The TBI/SCI Waiver targets participants of any age who have a TBI or SCI and are medically stable.

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*Only respondents who consented to have their survey data linked to MMIS claims data are included in the respondent group.

Overview of NCI-AD continued

Chart Book Organization

This chart book contains data comparisons on:

- Demographics of NCI-AD Non-Respondents and Respondents
- Respondent Ratios by Region
- Expenditures of NCI-AD Non-Respondents and Respondents
- Hospital Use of NCI-AD Non-Respondents and Respondents
- Chronic Conditions of NCI-AD Non-Respondents and Respondents

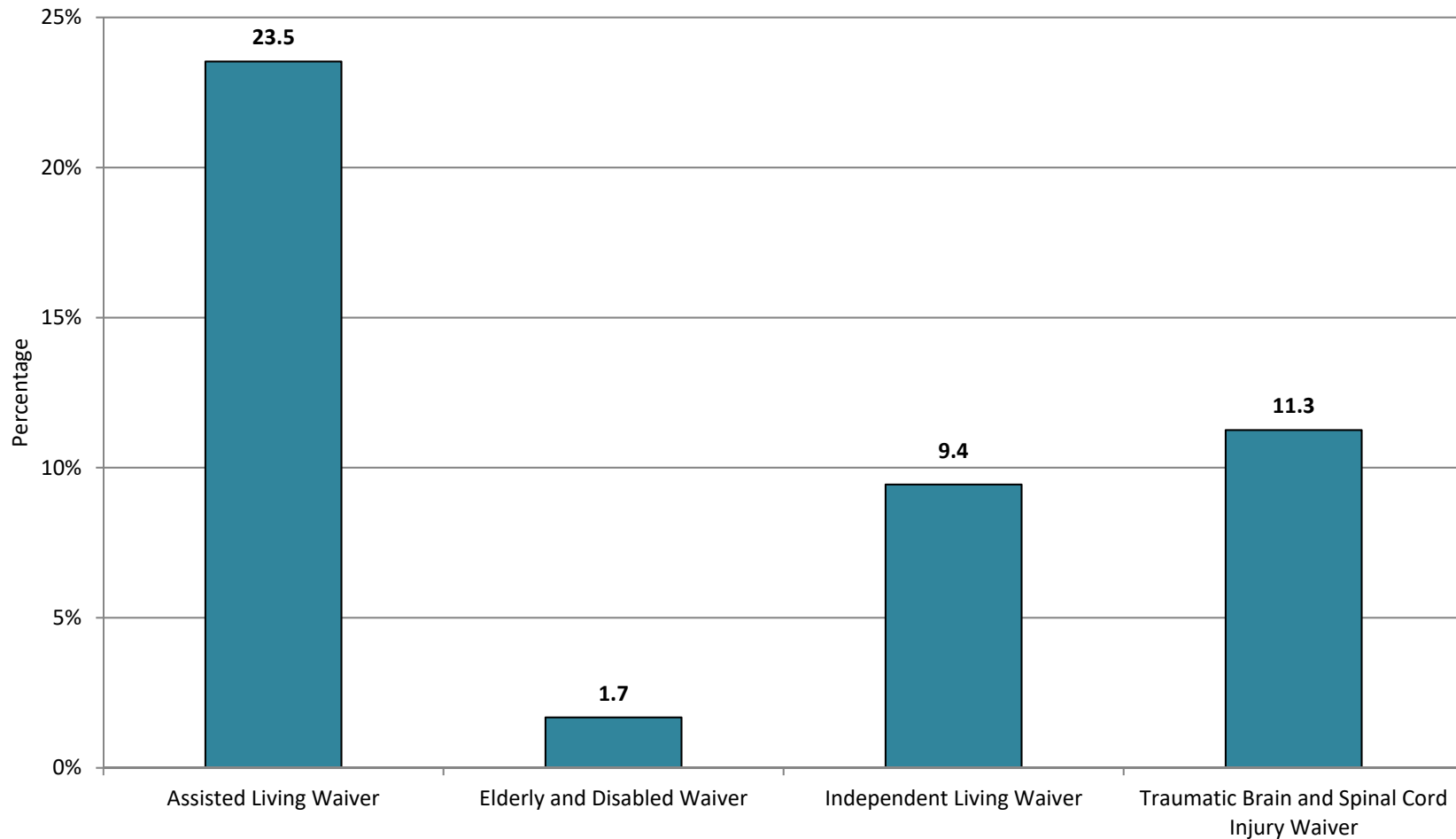
Data Sources

The information in this chart book was derived from the **Mississippi Division of Medicaid (DOM) Medicaid Management Information System (MMIS)**. This system contains data for all individuals enrolled in Mississippi's Medicaid program during the relevant study period, including Medicaid eligibility category, program enrollment, and demographic characteristics.

NCI-AD respondent status was received from **IMPAQ International, LLC**.

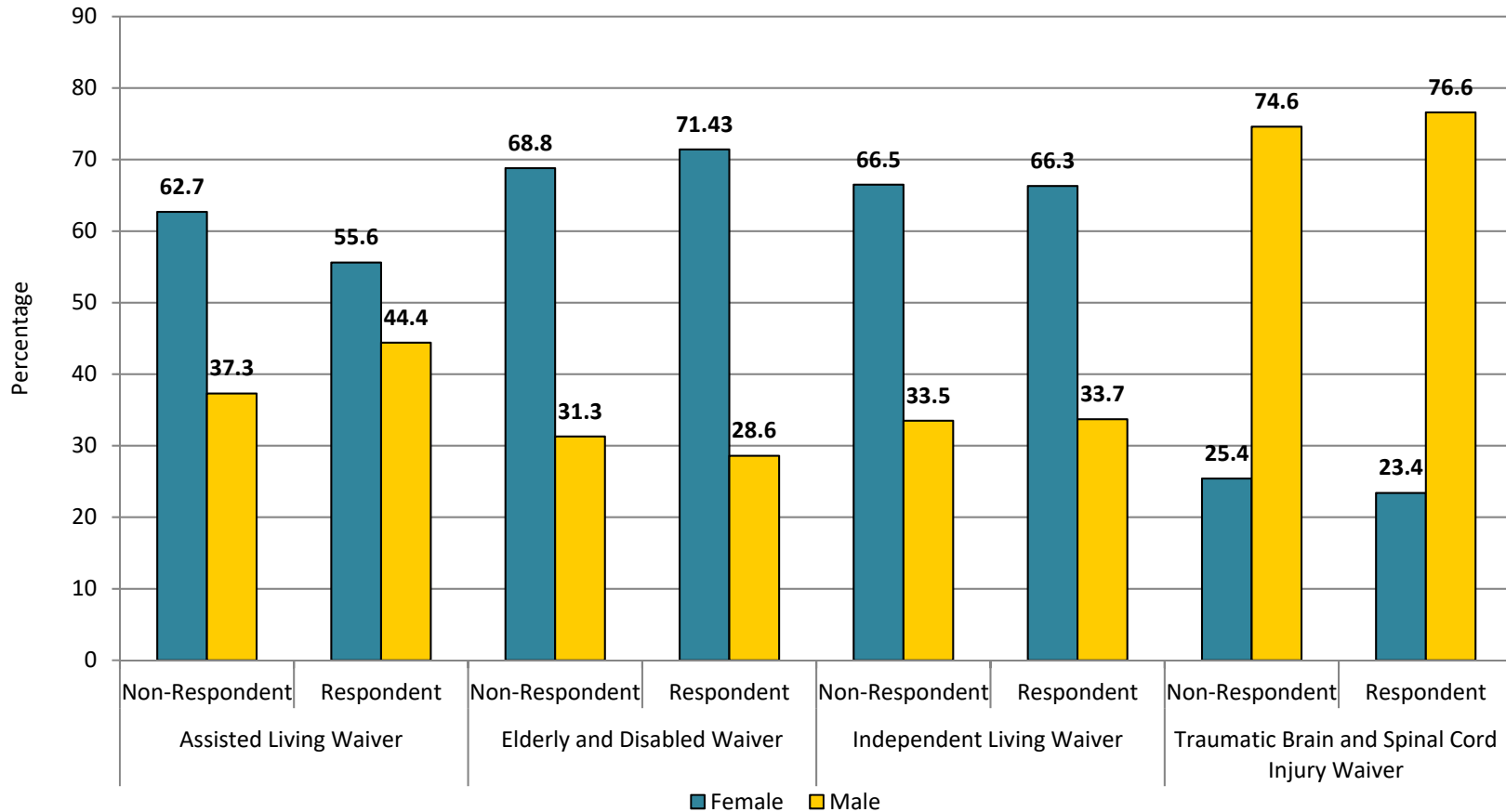
Demographics, by NCI-AD Response Status and Waiver

Figure 1. NCI-AD Response Status, by Waiver, CY 2014



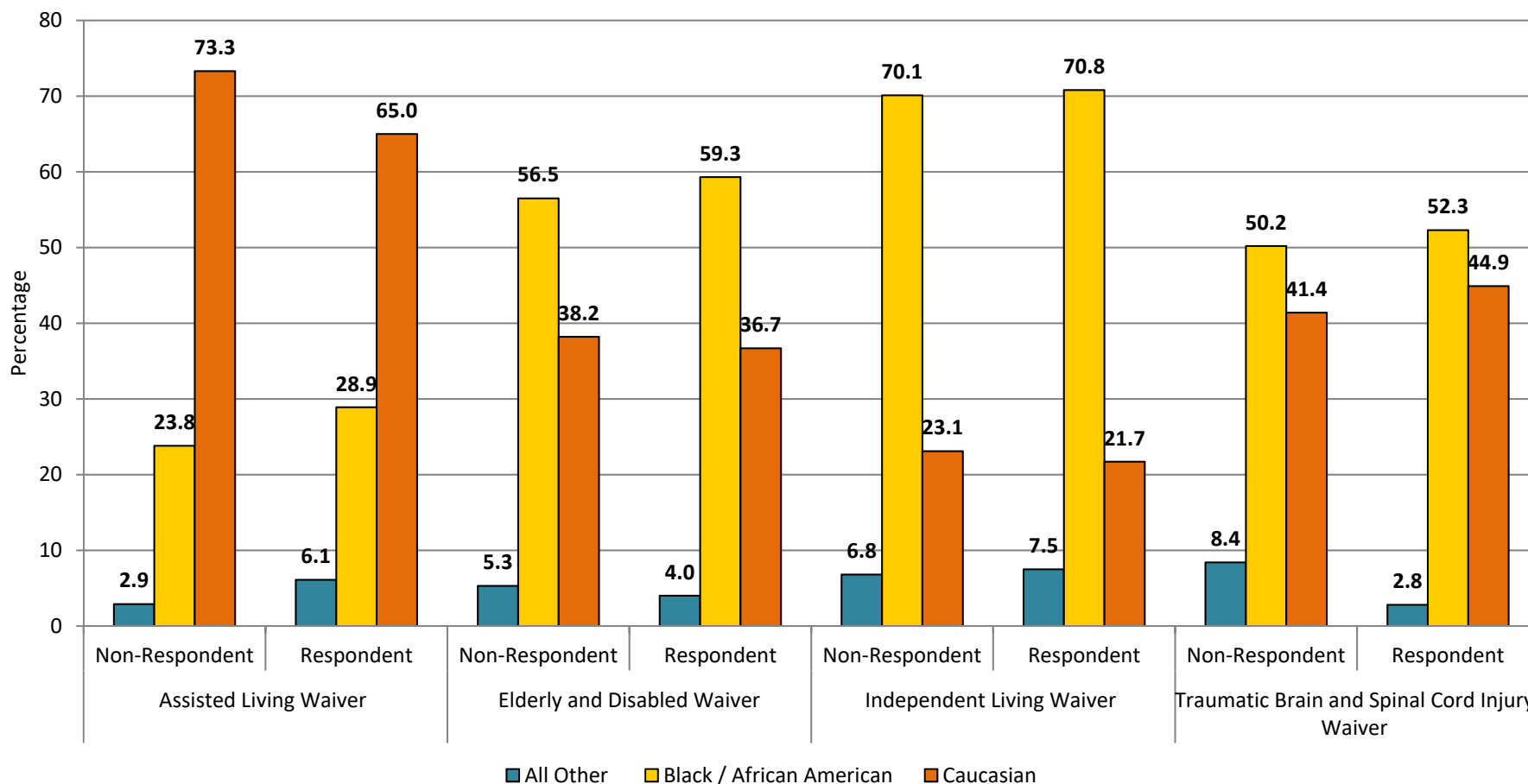
At 23.5% (180 respondents), the AL Waiver had the highest percentage of participants with claims who responded to the survey, followed by the TBI/SCI Waiver at 11.3% (107 respondents). The high AL Waiver percentage was expected due to the small number of total AL waiver participants.

Figure 2. NCI-AD Response Status, by Waiver and Gender, CY 2014



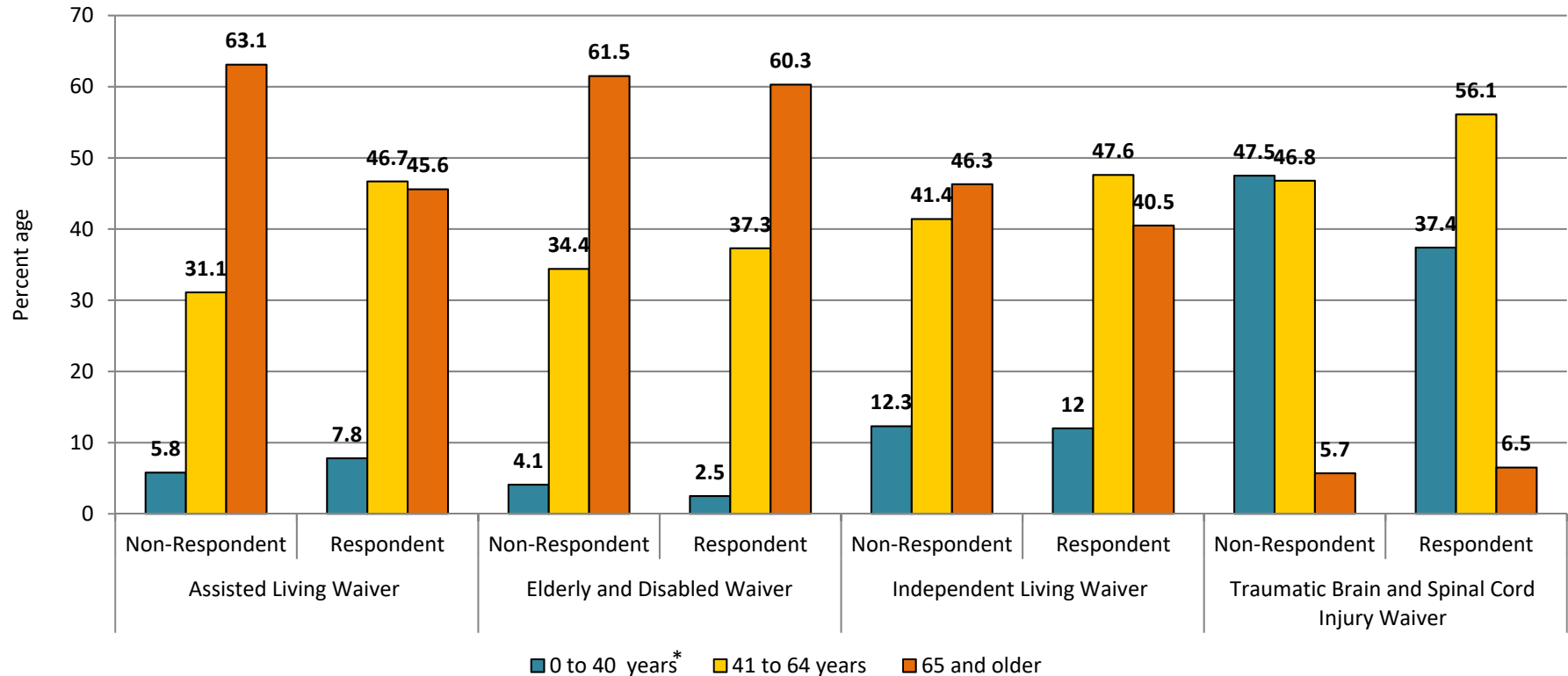
The chi-square test was run to determine if any differences in the observed gender counts between respondents and non-respondents were statistically significant (i.e., not due to chance). The gender distribution was similar between respondents and non-respondents with claims for each of the waivers (there was no statistically significant difference). All of the waivers, with the exception of the TBI/SCI Waiver, had higher percentages of female respondents and non-respondents.

Figure 3. NCI-AD Response Status, by Waiver and Race, CY 2014



The chi-square test was run to determine if any differences in the observed racial category counts between respondents and non-respondents were statistically significant. The racial distribution between respondents and non-respondents with claims was similar for most of the waivers. However, there was a statistically significant difference in response status by race for the AL Waiver ($p \leq .05$). Specifically, it can be said with 95% confidence that the differences in racial categories between respondents and non-respondents is not due to chance, and thus the survey responses in this group may not be generalizable across racial groups.

Figure 4. NCI-AD Response Status, by Waiver and Age, CY 2014



The chi-square test was run to determine if any differences in the observed age category counts between respondents and non-respondents were statistically significant. There was variance in the age distribution between respondents and non-respondents with claims for three of the four waivers. In the AL and IL Waivers, the percentage of non-respondents was highest for those 65 years and older, followed by those 41 to 64 years old. The percentage of non-respondents was smallest for those 0 to 40 years old. For respondents in each of these waivers, the 41- to 64-year-olds had the highest percentage, followed by those 65 and older. The difference in the response status between age groups in the AL Waiver was statistically significant ($p \leq .001$).

In the TBI/SCI Waiver, there was a reversal between the highest and second-highest categories among respondents and non-respondents between the 0- to 40-year-olds and the 41- to 64-year-olds, but it was not statistically significant.

* Included in the non-respondents are 17 children between the ages of 0 and 17 years.

NCI-AD Response Status Ratios, by Region and Waiver

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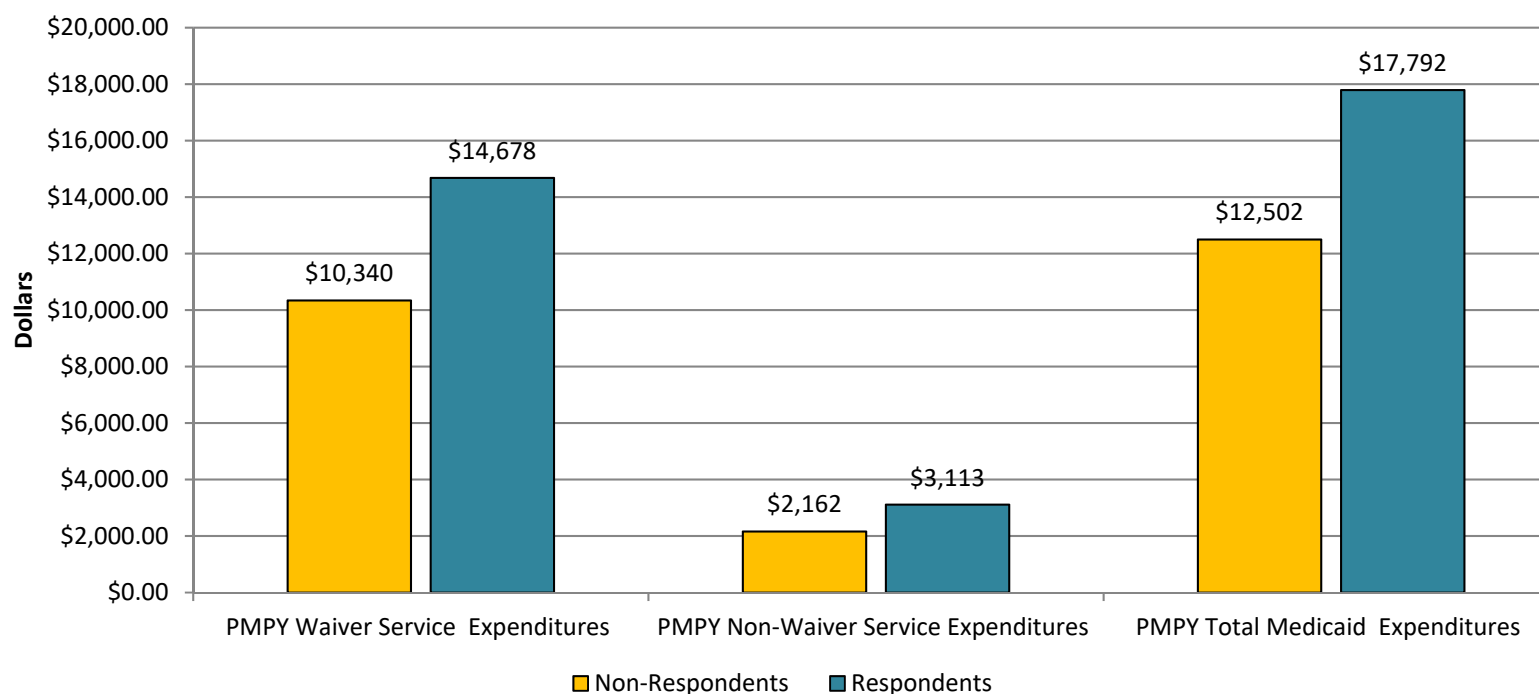
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Expenditures, by NCI-AD Response Status and Waiver

Figure 9. NCI-AD Response Status, PMPY Expenditures, CY 2014



T-tests were run to determine if there were statistically significant differences between the overall per member per year (PMPY) expenditures for respondents and non-respondents. Results show that there were statistically significant differences in the PMPY waiver service ($p \leq .001$), non-waiver service ($p \leq .01$), and total Medicaid expenditures ($p \leq .001$) between the respondents and non-respondents. This is likely due to the difference in respondent rates between waivers.

Figure 10. NCI-AD Response Status, PMPY Expenditures, by Waiver, CY 2014

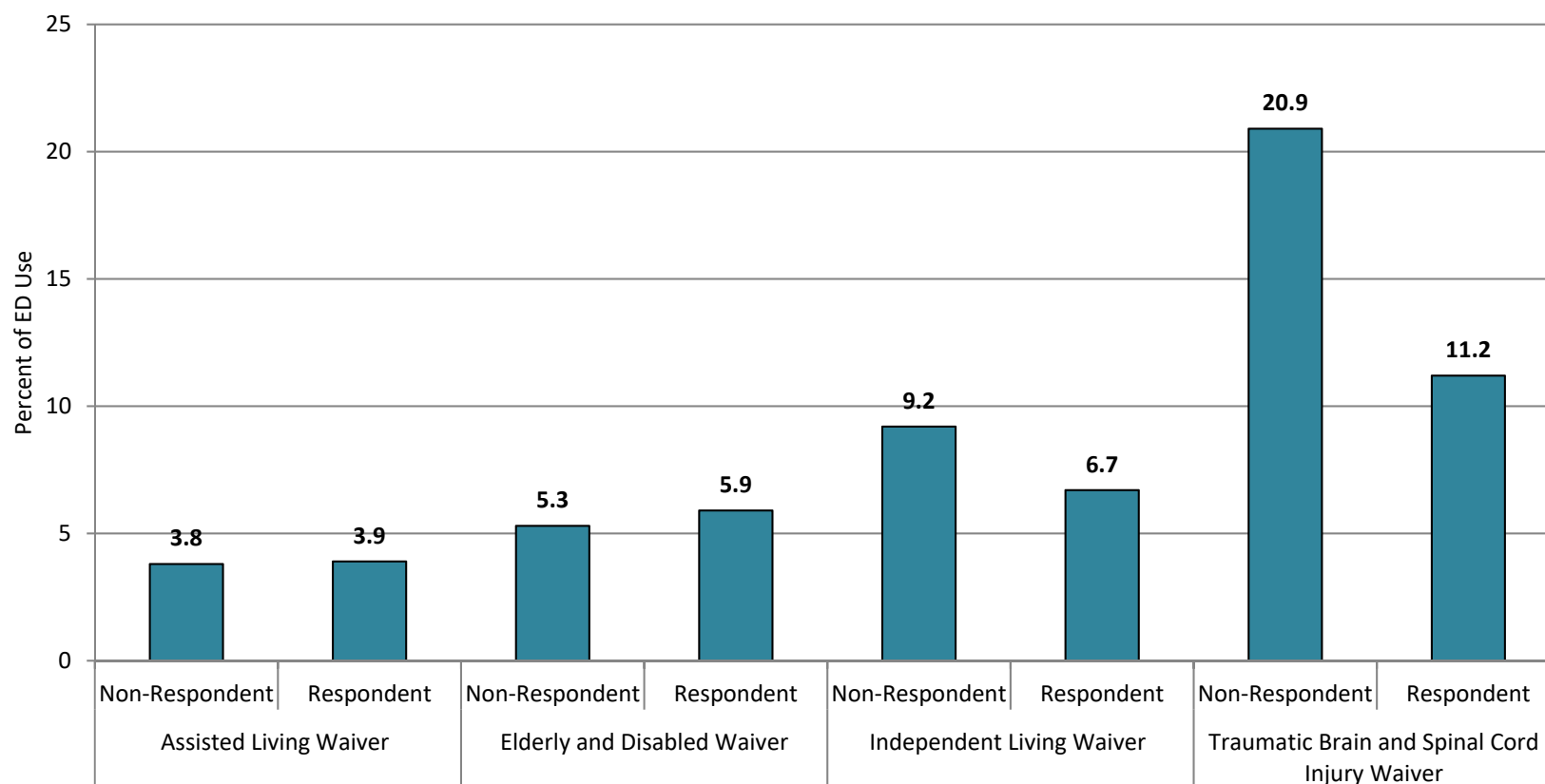
| Type of PMPY Expenditures | Respondent PMPY Expenditure | Non-Respondent PMPY Expenditure | Statistical Significance |
|--|-----------------------------|---------------------------------|--------------------------|
| Assisted Living Waiver | | | |
| Waiver Service Expenditures | \$15,561 | \$13,416.12 | $p \leq .001^*$ |
| Non-Waiver Service Expenditures | \$5,133 | \$3,328.52 | $p > .05$ |
| Total Medicaid Expenditures | \$20,699 | \$16,744.64 | $p \leq .01^*$ |
| Elderly and Disabled Waiver | | | |
| Waiver Service Expenditures | \$8,942 | \$8,792.02 | $p > .05$ |
| Non-Waiver Service Expenditures | \$2,201 | \$1,803.52 | $p > .05$ |
| Mean Total Medicaid Expenditures | \$11,143 | \$10,595.55 | $p > .05$ |
| Independent Living Waiver | | | |
| Waiver Service Expenditures | \$18,044 | \$17,094.97 | $(p > .05)$ |
| Non-Waiver Service Expenditures | \$1,966 | \$2,887.24 | $(p \leq .05)^*$ |
| Total Medicaid Expenditures | \$20,010 | \$19,982.21 | $(p > .05)$ |
| Traumatic Brain and Spinal Cord Injury Waiver | | | |
| Waiver Service Expenditures | \$22,059 | \$22,260.69 | $(p > .05)$ |
| Non-Waiver Service Expenditures | \$5,316 | \$7,151.63 | $(p > .05)$ |
| Total Medicaid Expenditures | \$27,376 | \$29,412.32 | $(p > .05)$ |

*Statistically significant at indicated level

T-tests were run to determine if there were statistically significant differences between the PMPY expenditures for respondents and non-respondents in each of the waivers. While Figure 9 shows significant differences in expenditures, further analysis showed that the difference was limited primarily to the AL Waiver. For the AL Waiver, there were statistically significant differences in the PMPY waiver service ($p \leq .001$) and PMPY total Medicaid expenditures ($p \leq .01$) between the respondents and non-respondents. The IL Waiver also showed statistical significance, but at a higher significance level ($p \leq .05$).

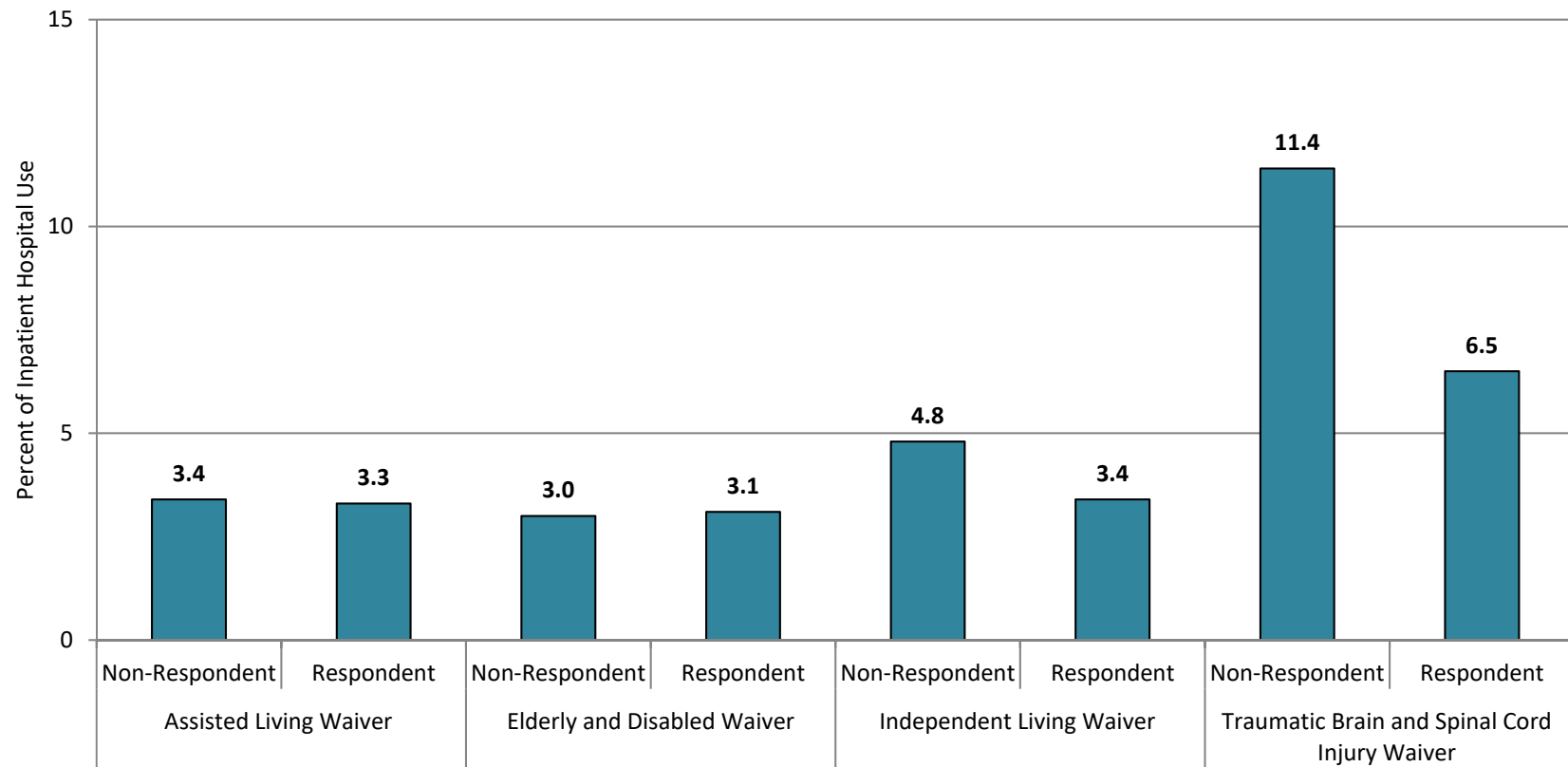
Hospital Use, by NCI-AD Response Status and Waiver

Figure 11. NCI-AD Response Status, by Emergency Department Use and Waiver, CY 2014



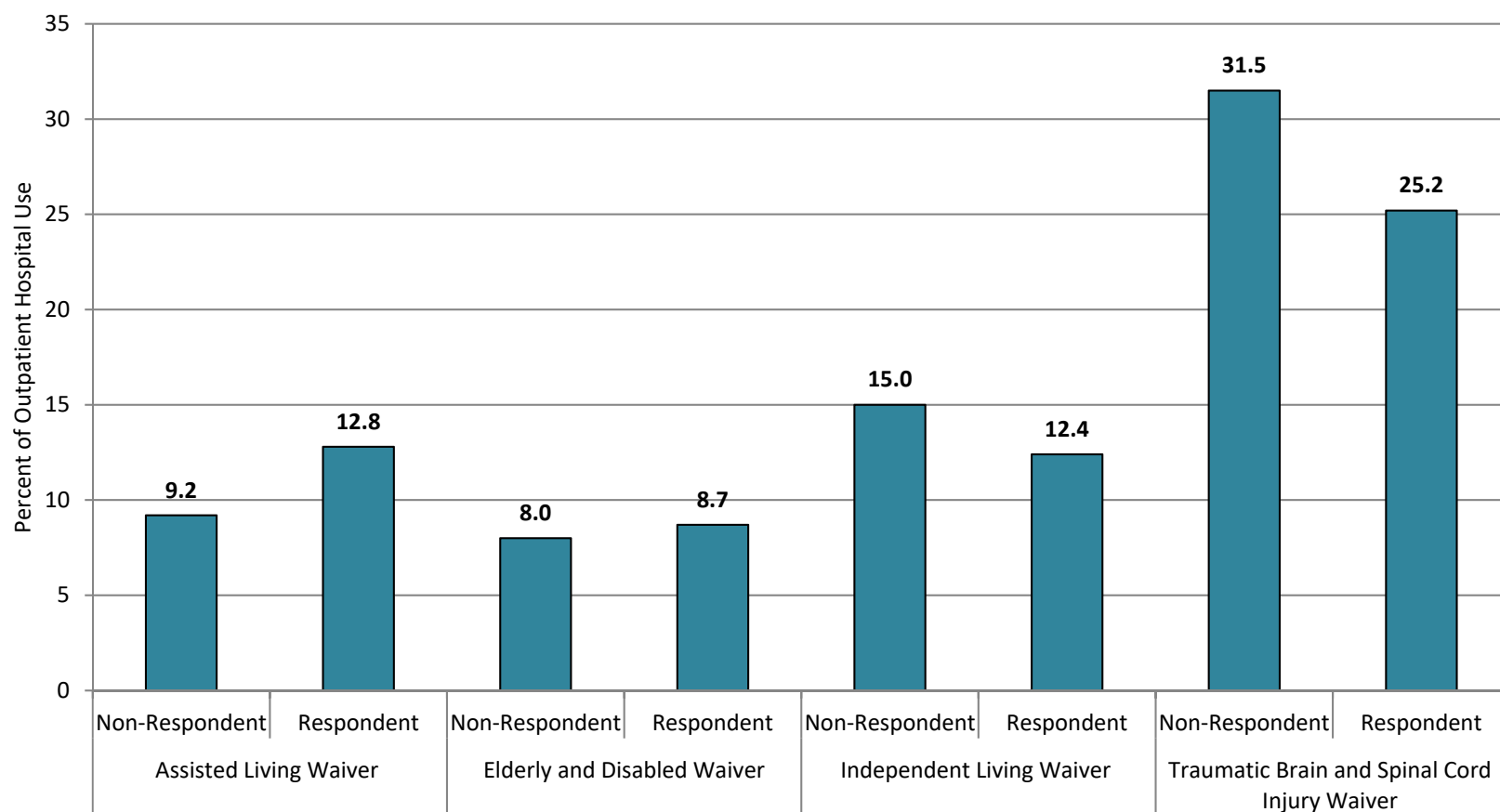
The chi-square test was run to determine if any differences in the observed emergency department (ED) use counts between respondents and non-respondents were statistically significant. There was little variance with respect to ED use (defined as having at least one claim during CY 2014) between respondents and non-respondents with claims for the AL, E&D, and IL Waivers. However, the difference between respondents and non-respondents regarding ED usage was statistically significant in the TBI/SCI Waiver ($p \leq .05$).

Figure 12. NCI-AD Response Status, by Inpatient Hospital Use and Waiver, CY 2014



The chi-square test was run to determine if any differences in the observed inpatient hospital use counts between respondents and non-respondents were statistically significant. There was little variance in inpatient hospital use (defined as having at least one claim during CY 2014) between respondents and non-respondents with claims for each of the waivers. The difference between respondents and non-respondents was the greatest for the TBI/SCI waiver, but this variance was not statistically significant.

Figure 13. NCI-AD Response Status, by Outpatient Hospital Use and Waiver, CY 2014



The chi-square test was run to determine if any differences in the observed outpatient hospital counts between respondents and non-respondents were statistically significant. There was little variance in outpatient hospital use (defined as having at least one claim during CY 2014) between respondents and non-respondents with claims for each of the waivers. The difference between respondents and non-respondents was the greatest for the TBI/SCI waiver, but this variance was not statistically significant.

Chronic Conditions, by NCI-AD Response Status and Waiver

Figure 14. NCI-AD Response Status, Top Chronic Conditions, by Waiver, CY 2014

| Waiver/Chronic Condition | Percentage of Respondents | Percentage of Non-Respondents |
|--|---------------------------|-------------------------------|
| Assisted Living Waiver (Non-Respondents N=585; Respondents N=180) | | |
| Hypertension | 77% | 76% |
| Alzheimer's Disease and Related Disorders or Senile Dementia | 25% | 44% |
| Depression | 39% | 40% |
| Schizophrenia and Other Psychotic Disorders | 51% | 35% |
| Hyperlipidemia | 36% | 38% |
| RA/OA (Rheumatoid Arthritis/Osteoarthritis) | 28% | 35% |
| Diabetes | 34% | 32% |
| Anemia | 21% | 32% |
| Chronic Obstructive Pulmonary Disease and Bronchiectasis | 26% | 26% |
| Heart Failure | 20% | 27% |
| Elderly and Disabled Waiver (Non-Respondents N=18,835; Respondents N=322) | | |
| Hypertension | 85% | 85% |
| Diabetes | 50% | 49% |
| RA/OA (Rheumatoid Arthritis/Osteoarthritis) | 50% | 47% |
| Hyperlipidemia | 41% | 39% |
| Heart Failure | 33% | 36% |
| Cataract | 41% | 35% |
| Anemia | 30% | 35% |
| Ischemic Heart Disease | 28% | 34% |
| Chronic Obstructive Pulmonary Disease and Bronchiectasis | 33% | 32% |
| Chronic Kidney Disease | 26% | 27% |

The chi-square test was run to determine if any differences in the observed chronic condition counts between respondents and non-respondents were statistically significant. The top ten most frequently occurring conditions (based on non-respondent frequencies) are presented for each waiver.

There was a statistically significant difference in the chronic condition counts between respondents and non-respondents in the AL Waiver ($p \leq .001$) and the E&D Waiver ($p \leq .05$).

Figure 14. NCI-AD Response Status, Top 10 Chronic Conditions, by Waiver, CY 2014 continued

| Waiver/Chronic Condition | Percentage of Respondents | Percentage of Non-Respondents |
|--|---------------------------|-------------------------------|
| Independent Living Waiver (Non-Respondents N=2,561; Respondents N=267) | | |
| Hypertension | 74% | 74% |
| RA/OA (Rheumatoid Arthritis/Osteoarthritis) | 55% | 53% |
| Diabetes | 40% | 46% |
| Anemia | 34% | 35% |
| Hyperlipidemia | 34% | 35% |
| Heart Failure | 27% | 34% |
| Cataract | 30% | 29% |
| Stroke/Transient Ischemic Attack | 21% | 29% |
| Ischemic Heart Disease | 26% | 28% |
| Chronic Obstructive Pulmonary Disease and Bronchiectasis | 26% | 27% |
| Traumatic Brain and Spinal Cord Injury (Non-Respondents N=844; Respondents N=107) | | |
| Mobility Impairments | 78% | 80% |
| Spinal Cord Injury | 50% | 51% |
| Hypertension | 19% | 32% |
| Depression | 21% | 25% |
| Anemia | 20% | 24% |
| Chronic Obstructive Pulmonary Disease and Bronchiectasis | 9% | 15% |
| RA/OA (Rheumatoid Arthritis/Osteoarthritis) | 13% | 14% |
| Diabetes | 9% | 15% |
| Anxiety Disorders | 12% | 13% |
| Traumatic Brain Injury and Non-psychotic Mental Disorders due to Brain Damage | 11% | 12% |

There was no statistically significant difference in the chronic condition counts by response status in the IL Waiver or the TBI/SCI Waiver.

Conclusions

Overall, the sample of NCI-AD respondents appear similar to the non-respondents in many instances, thus the NCI-AD survey responses are likely representative of the broader waiver populations. However, there were some statistically significant findings between all respondents and non-respondents, as well as between the two groups within the waivers.

There were statistically significant differences between all respondents and non-respondents with respect to the PMPY total Medicaid expenditures, PMPY waiver service expenditures, and PMPY non-waiver service expenditures. Each of these was higher for the respondents. This is due in part to the findings of statistical significance between the respondents and non-respondents in the AL Waiver for PMPY waiver service expenditures and PMPY total Medicaid expenditures (higher for respondents). There was also a statistically significant difference between PMPY non-waiver service expenditures for IL Waiver participants (lower for respondents).

Additionally, there were statistically significant findings within the AL Waiver with respect to race, age, and chronic conditions. The percentage of Caucasians was smaller, while the All Other and Black/African American racial groups were larger for respondents. For age, the percentage of those 65 and older decreased, while the 0 to 40 and 41 to 64 age groups both increased for respondents. The percentage of respondents and non-respondents for several of the top ten chronic conditions varied; for example, the occurrence of Alzheimer's disease or senile dementia and related disorders was 19 percentage points lower for respondents. There was a statistically significant difference in the chronic condition counts for the E&D Waiver as well.

Finally, the TBI/SCI Waiver had a statistically significant difference between respondents and non-respondents regarding ED usage. The number of respondents using the ED was smaller than the number of non-respondents.

It is important to note that the AL Waiver serves the smallest number of waiver participants and had the largest percentage of NCI-AD respondents. This likely explains some of the statistically significant findings within that waiver and the subsequent effect on all respondents and non-respondents.

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