



November 16, 2018

Brenda Destro
Deputy Assistant Secretary for Planning and Evaluation
U.S. Department of Health and Human Services
200 Independence Ave. SW
Washington DC, 20201

Submitted electronically through ASPEImpactStudy@hhs.gov

Attention: RFI Provider and Health Plan Approaches To Improve Care For Medicare Beneficiaries With Social Risk Factors.

Dear Deputy Assistant Secretary Destro:

Medicare Advantage (MA) plans are taking advantage of new flexibilities and changes in the uniformity requirements granted by the Centers for Medicare and Medicaid Services (CMS) to offer supplemental benefits if they compensate for physical impairments, diminish the impact of injuries or health conditions, and/or reduce avoidable emergency room utilization.

An increasing number of plans, are offering non-emergency medical transportation (NEMT) as a supplemental benefit. Avalere compared¹ benefits data in CMS's 2019 and 2018 plan benefit package (PBP) files and found a 22% increase in the number MA plans offering transportation benefits in 2019. This increase means that one in four MA plans will be offering transportation to some or all of their beneficiaries.

On the other hand, the NEMT benefit is a key element of a coordinated care plan for all Medicaid beneficiaries. An analysis² of data from the largest manager or "broker" of

¹ Creighton, Sean; Young, Joanna. "Medicare Advantage Beneficiaries Will See a Jump in New Supplemental Benefit Offerings in 2019." Oct 19, 2018. <http://avalere.com/expertise/managed-care/insights/medicare-advantage-beneficiaries-will-see-a-jump-in-new-supplemental-benefi>

² Kaiser Commission on Medicaid and the Uninsured. Medicaid Non-Emergency Medical Transportation: Overview and Key Issues in Medicaid Expansion Waivers. February 24, 2016.

Medicaid NEMT, LogistiCare Solutions, showed that the majority of NEMT services are for individuals requiring additional assistance with regularly scheduled transportation to coordinated care for behavioral health services, substance abuse treatment and dialysis services. LogistiCare Solutions also manages transportation for a number of Medicare Advantage (MA) plans.

The ASPE RFI asks for information on the Return on Investment (ROI) for providing services to improve care for Medicare beneficiaries with social risk factors. While not focusing on MA plans, a recent study on behalf of the Medical Transportation Access Coalition³ (MTAC) uses Medicaid claims data and a survey of nearly 1,000 Medicaid beneficiaries to determine the ROI in NEMT for three common conditions and their corresponding treatments. As summarized by the study authors⁴:

- Dialysis for kidney disease:
 - Survey respondents reported attending an average of 12.0 dialysis treatments a month using non-emergency medical transportation and said they would expect to attend only 4.1 treatments a month without it.
 - The analysis calculated that NEMT saves Medicaid \$3,423 per month for each individual with kidney failure receiving dialysis, or \$41,076 per year.
- Diabetic wound care:
 - Survey respondents reported attending an average of 5.5 wound care treatments a month using NEMT but expected to attend only 1.3 treatments a month without it.
 - The analysis calculated that Medicaid would avoid spending \$792 per member per month, or \$9,504 per year, by keeping patients on a path to receive all necessary wound care treatments.
- Substance use disorder treatment:
 - NEMT did not appear to save Medicaid money for patients with substance use disorder, in part because the survey methods did not identify the full range of costs avoided.
 - It is possible that different study parameters (such as longer claims analysis period, consideration of relapse rates, and quantification of social costs such as increased employment and productivity) would likely lead to a positive ROI.

Many of these chronic conditions occur with similar frequency among the MA population. For example, according to the Medicare Payment and Advisory Commission (MedPAC), half

<https://www.kff.org/medicaid/issue-brief/medicaid-non-emergency-medical-transportation-overview-and-key-issues-in-medicaid-expansion-waivers/>

³LogistiCare Solutions is a founding member of the Medical Transportation Access Coalition; <https://mtaccoalition.org/>

⁴ Adelberg, Michael; Salber, Patricia; and Cohen, Michael. "Curtailling Medicaid's transportation benefit is 'penny-wise and pound-foolish.'" StatNews. July30, 2018.

<https://www.statnews.com/2018/07/30/curtailing-medicaid-transportation-benefit-pennywise-pound-foolish/>

of the end stage renal disease (ESRD) Medicare beneficiaries are dual eligible. Thus, it is highly likely that MA plans will see similar ROIs associated with providing NEMT to beneficiaries with chronic conditions and social risk factors.

Simon&Co appreciates the opportunity to provide ASPE with the MTAC study and its methodology.⁵

Please contact us if you have any questions.

Sincerely,

A handwritten signature in cursive script, reading "Marsha Simon", enclosed in a thin black rectangular border.

Marsha Simon, PhD
President
Simon&Co.

Attachments

⁵ "Study Reveals Non-Emergency Medical Transportation (NEMT) is Extremely Cost-Effective and Life-Saving to Medicaid Program." <https://mtacoalition.org/study-reveals-non-emergency-medical-transportation-nemt-is-extremely-cost-effective-and-life-saving-to-medicaid-program/>



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NEMT Impact Study for MTAC



Report of Findings

July 20, 2018

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Evidence-based research across diverse industries

Our experience in instrument design affords our clients actionable analytics to help them identify, address, and improve offerings to, and the way they communicate with, their key constituents.

With nearly 40 years of experience in diverse markets, our consultative approach ensures our data can serve as the basis behind important business decisions.

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Expertise in a diverse set of research methodologies

Having conducted millions of surveys and thousands of focus groups since 1979, our experience in instrument design, data collection and the presentation of those findings in manageable, actionable ways allows us to serve our clients across the spectrum of research studies.



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In-Depth Interviews

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Whether direct to clients or through their agencies, we apply our core research methodologies, often applying a mixed methodology to ensure a study that captures both quantitative and qualitative information, to ensure our solutions exceed client expectations.

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Project Overview

- GreatBlue was commissioned by Faegre Baker Daniels, on behalf of the Medical Transportation Access Coalition (MTAC), to conduct a study to measure the need for Non-Emergency Medical Transportation, or NEMT, services among a sampling of patients who currently receive these transportation services.
- The primary goal for this research study was to measure patient reliance on NEMT services, frequency of usage of NEMT services, and measure the effect on patients in the event these NEMT services were eliminated.
- In order to service this need, a telephone survey was conducted among patients currently utilizing NEMT services who are receiving either dialysis or kidney disease, wound care for diabetes, or treatment for substance abuse.
- The outcome of this research will enable MTAC personnel to a) bring awareness to the significance and need for NEMT services among patients and b) effectively measure the return on investment of NEMT services.



Areas of Investigation

The 2018 Faegre Baker Daniels NEMT Study leveraged a quantitative research methodology to address the following areas of investigation:

- Patients' ability to attend appointments with NEMT services
- Ability to attend appointments without NEMT services
- Types of medical rides utilized most frequently
- Access to alternative transportation
- Impact of NEMT on patients' costs
- Impact of NEMT services on patients' health

Research Methodology Snapshot

<p>Methodology</p> <p>Telephone**</p>	<p>No. of Completes</p> <p>977</p> <p>2018 Composite</p>	<p>206</p> <p>Diabetes</p> <p>460</p> <p>Kidney Disease</p> <p>311</p> <p>Substance Abuse</p>	<p>No. of Questions</p> <p>25*</p>	<p>Sample</p> <p>Provided by LogistiCare Solutions, LLC</p>
<p>Target</p> <p>Patients who utilize NEMT services</p>	<p>Margin of Error***</p> <p>+/- 3.1%</p> <p>2018 Composite</p>	<p>+/- 6.8%</p> <p>Diabetes</p> <p>+/- 4.5%</p> <p>Kidney Disease</p> <p>+/- 5.5%</p> <p>Substance Abuse</p>	<p>Confidence Level</p> <p>95%</p>	<p>Research Dates</p> <p>April 23 - May 25</p>

* This represents the total possible number of questions; not all respondents will answer all questions based on skip patterns and other instrument bias.

**Supervisory personnel in addition to computer-aided interviewing platform ensure the integrity of the data set.

***Margin of error values above apply to percent of response calculations. Margin of error for average response calculations at 95% confidence level is less than 1.

Respondent Snapshot

This slide quantifies select data points to provide context for this research study. The data is not meant to be statistically significant, rather to provide an empirical view into the demographic profile of the participants.

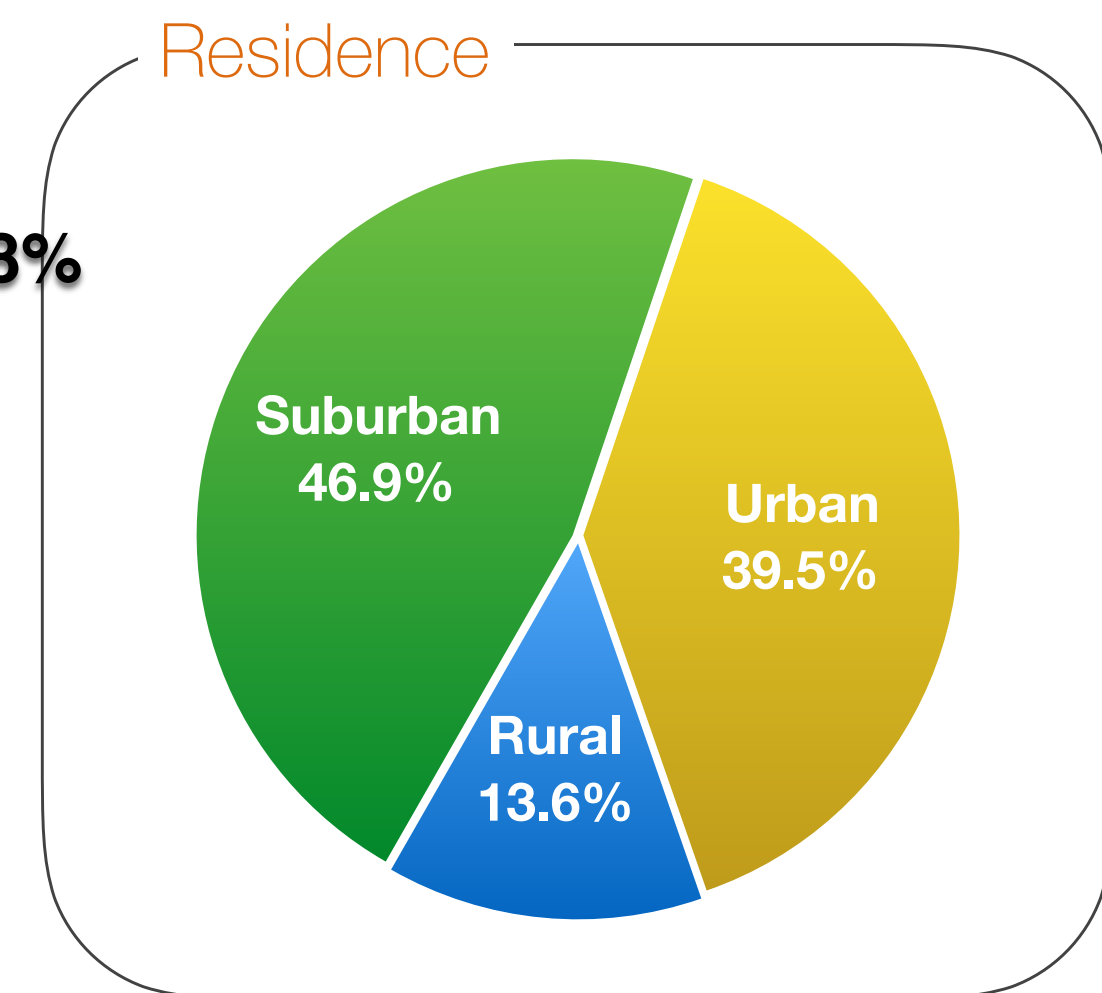
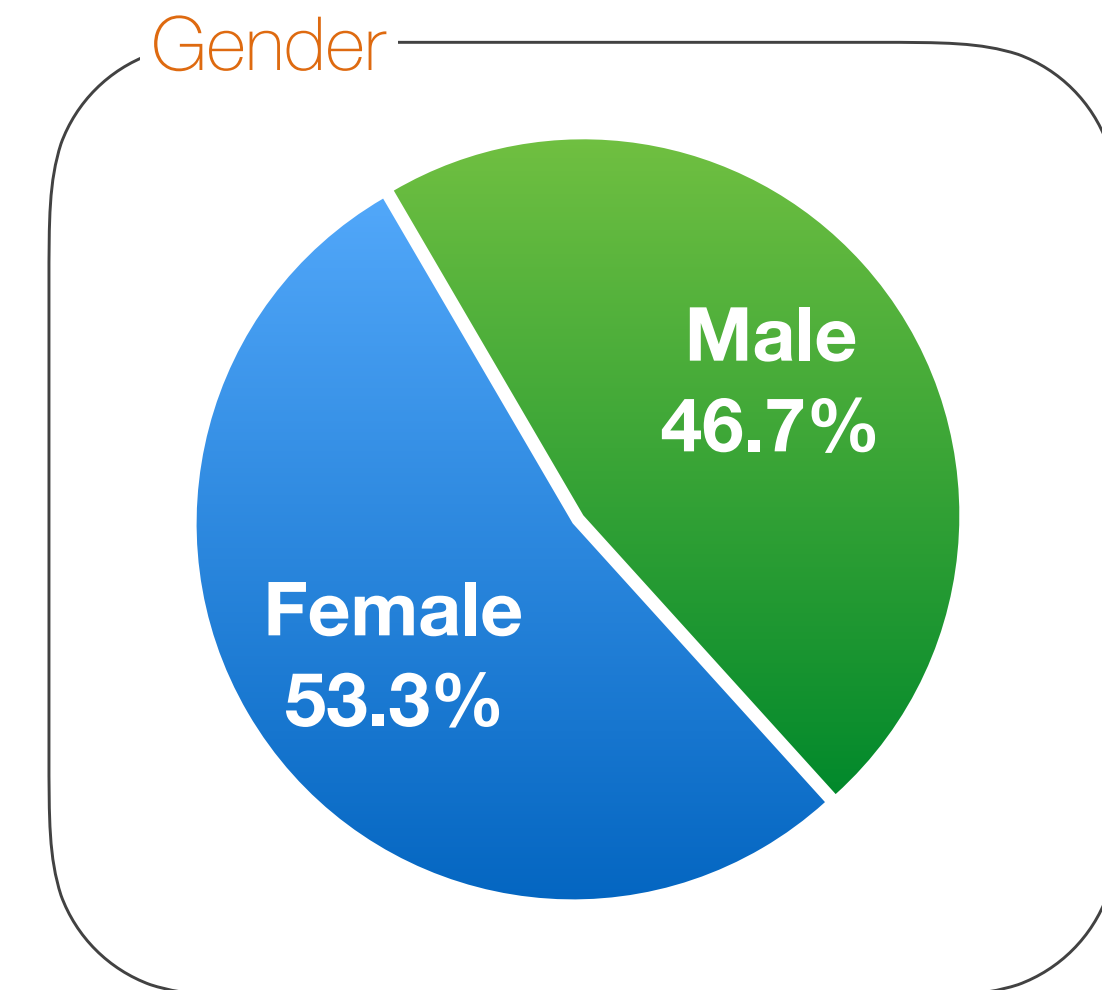
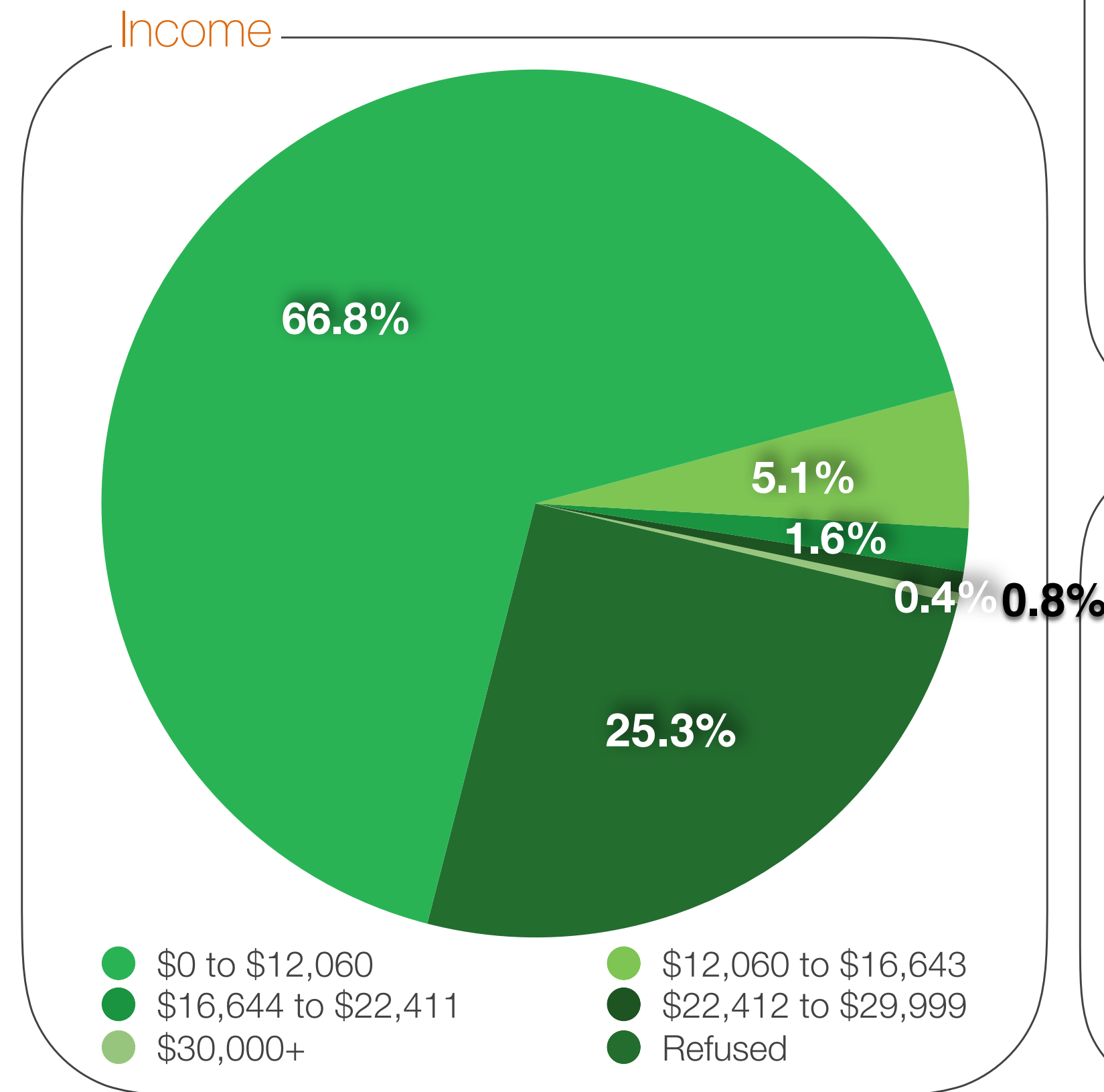
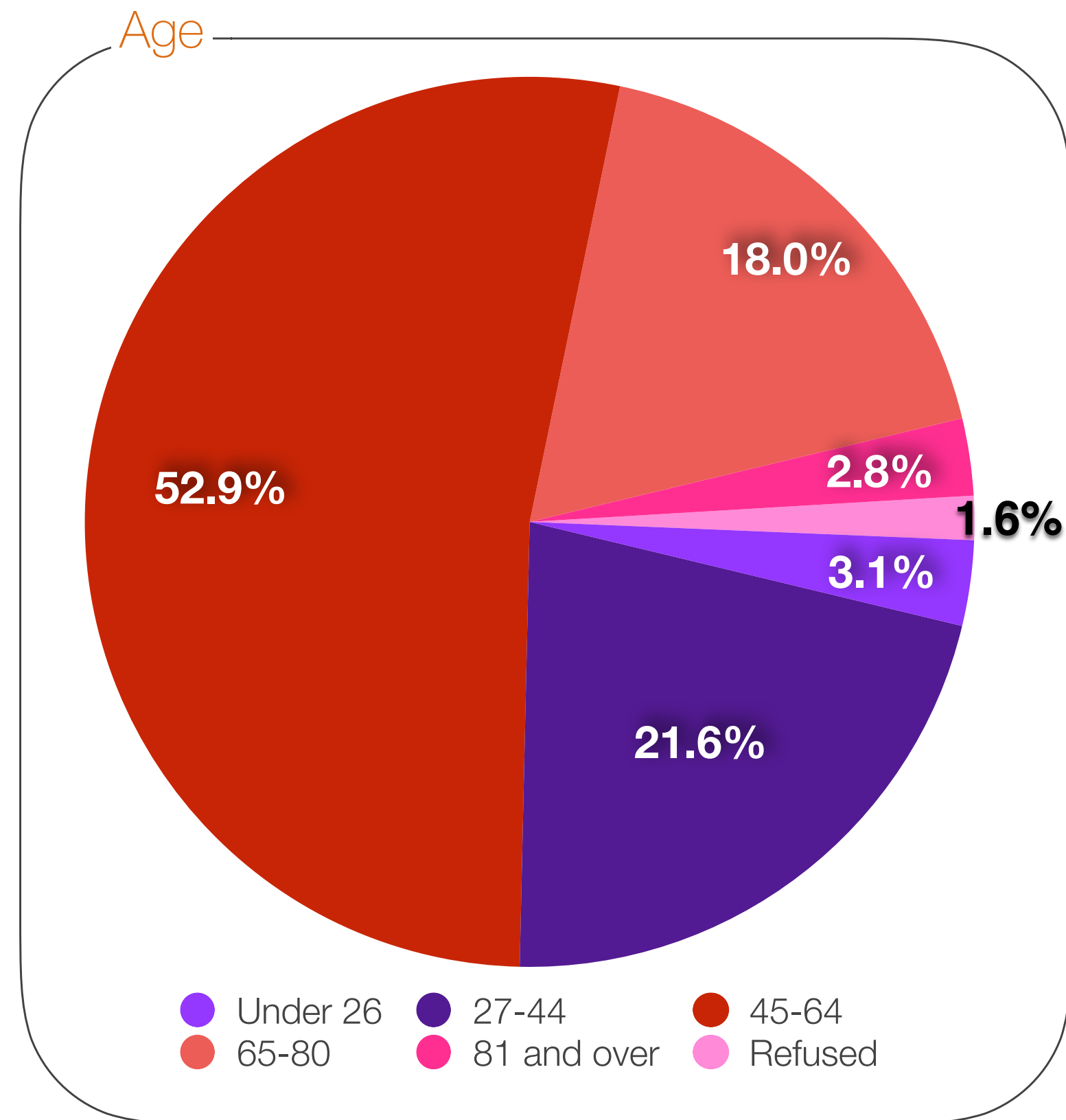


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71.5%

would still purchase
at an increased
price point

8.9%

5.4%

2.8%

0.0%

Negative Impact

Boomers

Key Study Findings

- Overall a vast majority of patients surveyed (92.7%) reported their health would be “much worse” (85.3%) or “slightly worse” (7.4%) without access to medical rides through NEMT services.
- The most frequently used type of medical ride among patients was a van or sedan (55.2%), while roughly one-quarter of patients with kidney disease (23.5%) and approximately one-third of patients with diabetes (31.1%) also used wheel-chair accessible vehicles. Over one-quarter of patients receiving treatment for substance abuse use public transportation (28.3%).
- Without access to NEMT services, 66.5% of patients receiving treatment for wound care for diabetes, 58.8% of patients receiving treatment for substance abuse, and 52.8% of dialysis patients would not be able to attend any medical appointments per month.
- On average, patients across all three treatment categories reported that they would miss approximately 70% of their appointments without NEMT services.

Key Study Findings

- Over three-quarters (82.6%) of patients said they would have to pay more out of pocket if they did not have access to medical rides, and approximately two-thirds (66.6%) have no other form of personal or public transportation that they could use to attend appointments as an alternative.
 - Among those without access to another form of personal or public transportation, 67.6% of those respondents would not be able to attend any medical appointments per month compared to only 37.7% with access to alternative transportation.
 - Further, 85.7% of rural patients would be required to pay more out of pocket without access to NEMT services.
- Nearly one-third of respondents (31.4%) reported having a travel time of greater than 30 minutes to get to an appointment.
 - 88.8% of patients with a travel time of longer than 30 minutes reported their health would be much worse without NEMT services and 60.7% reported they would not be able to attend any medical appointments.
- Finally, in a series of open-ended questions, patients reported that medical rides help maintain their health and manage their conditions, while also helping them receive the medical treatment that they require. Further, without these medical rides, patients noted that they would likely be unable to attend appointments, and their health would worsen as a result.

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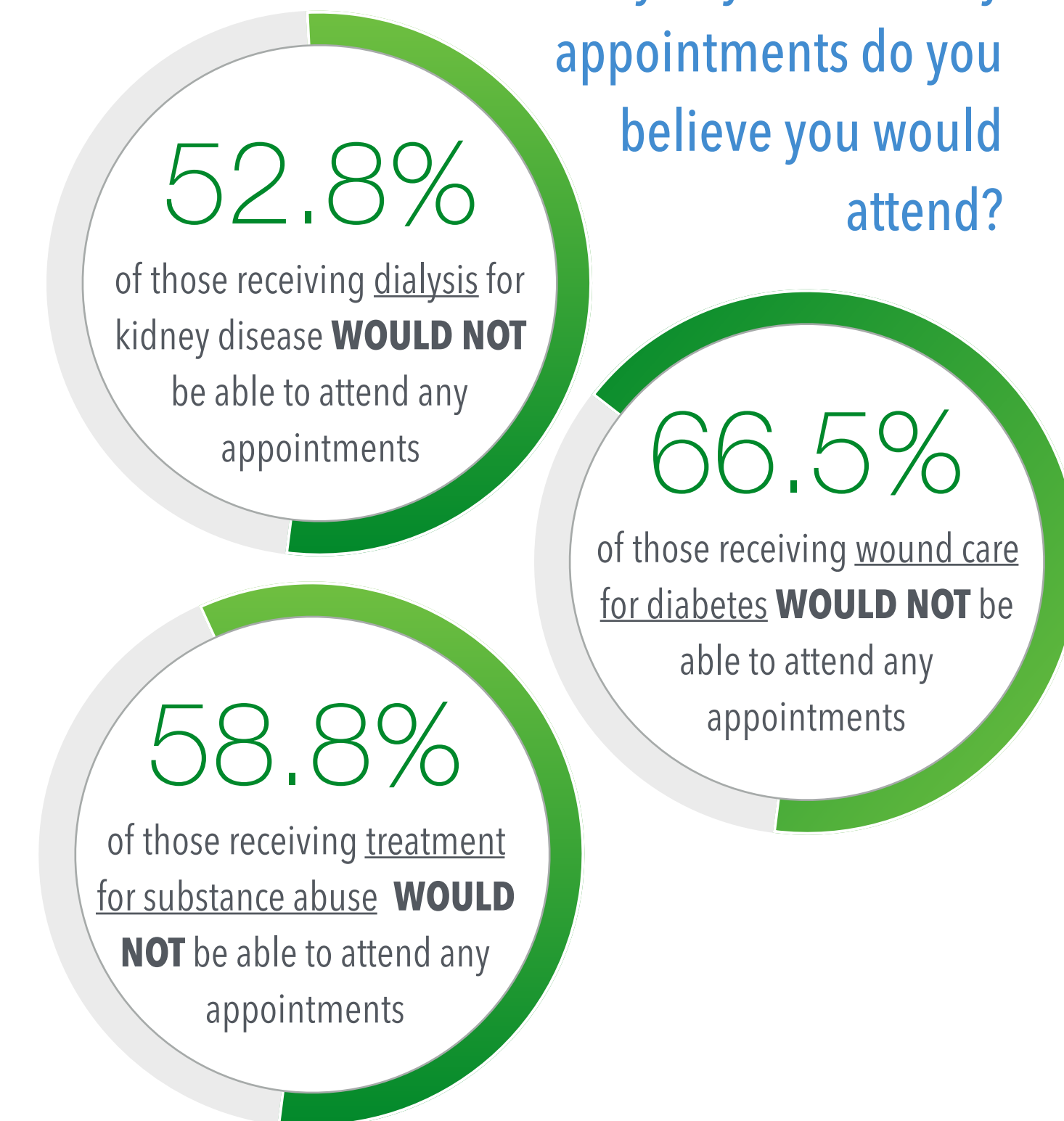
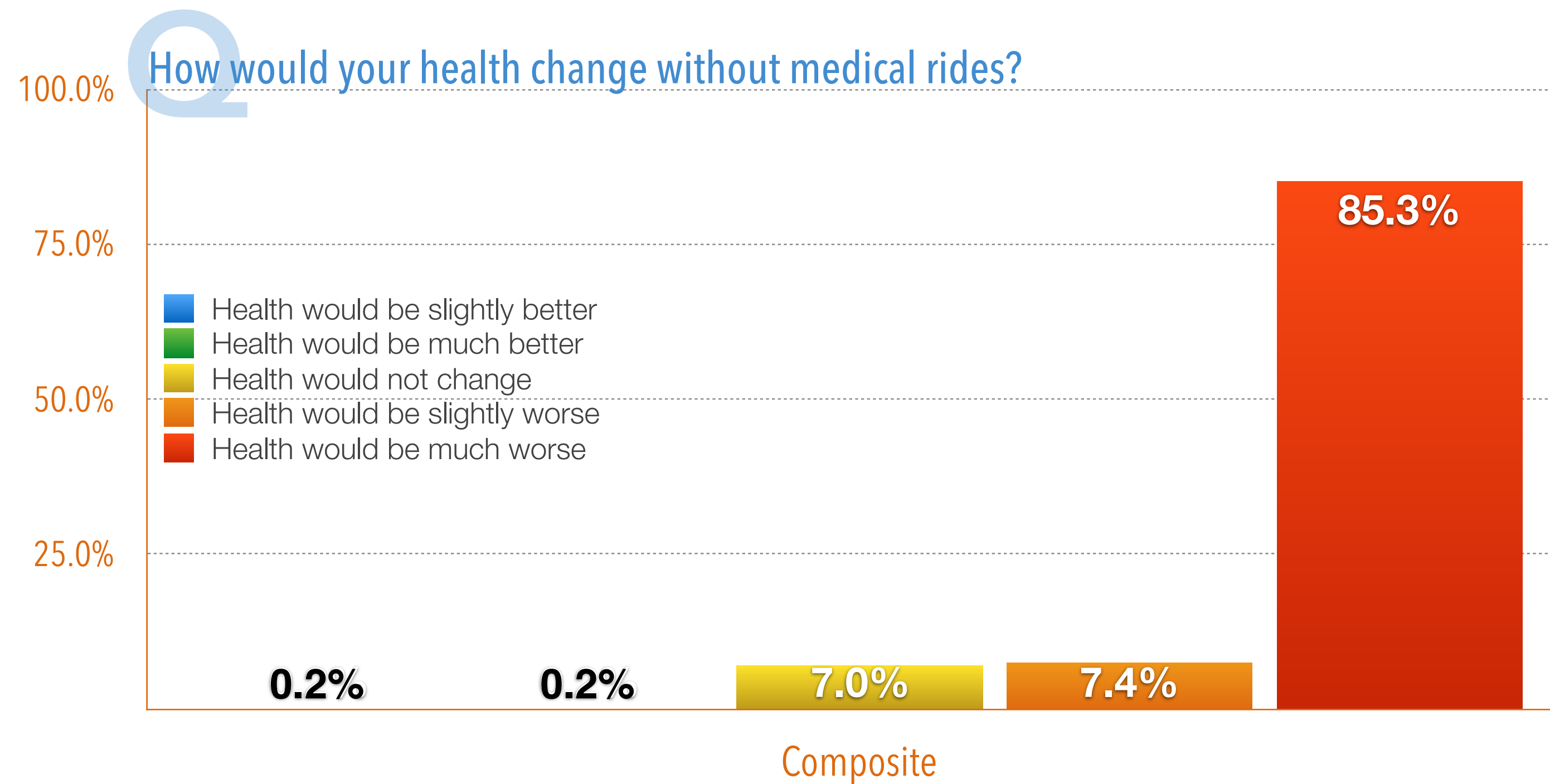
Negative Impact

Boomers

NEMT critical to appointments and health

Respondents clearly indicated that NEMT services were a key component to their overall health. Over nine-tenths of respondents (92.7%) reported their health would be “much worse” (85.3%) or “slightly worse” (7.4%). Further, a majority of patients receiving treatment for wound care for diabetes (66.5%), for substance abuse (58.8%), or for dialysis (52.8%) all reported they would be unable to attend any appointments without NEMT services.

Q If you did not have access to medical rides, how many of your monthly appointments do you believe you would attend?



Vans and sedans most popular ride service

Q What type of medical ride do you use most frequently?

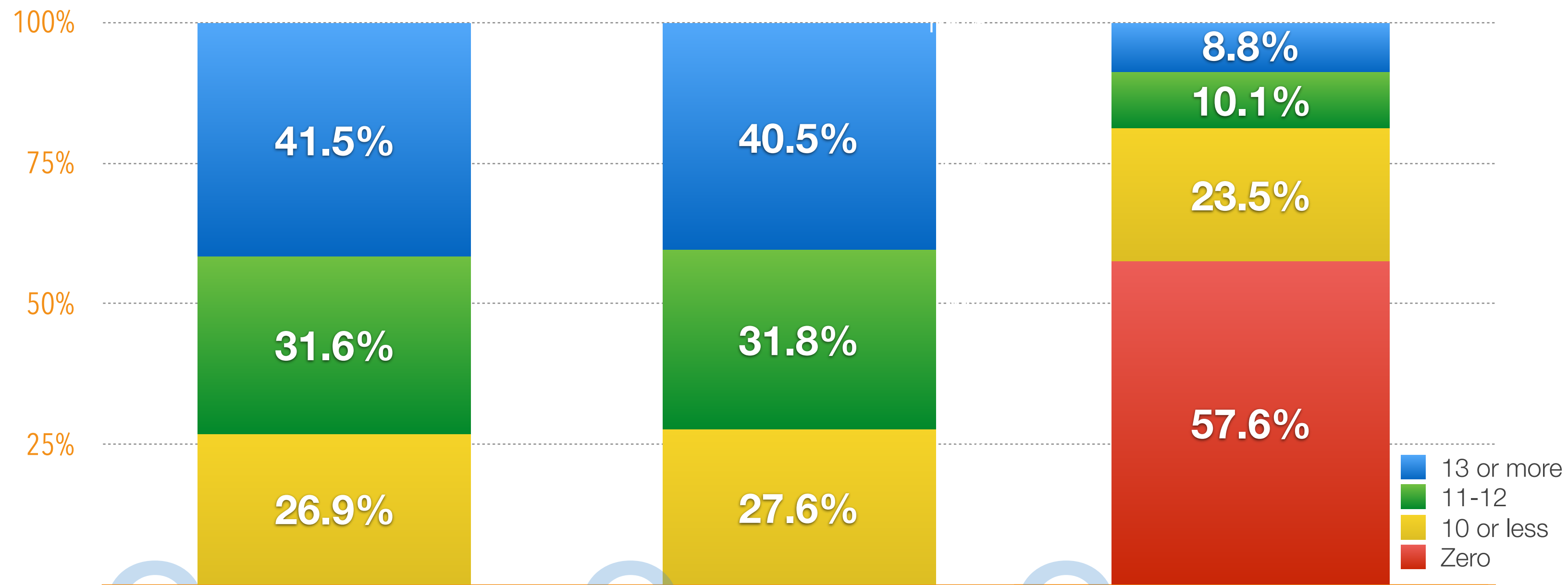
Among all patients surveyed in 2018, the majority reported most frequently utilizing a “van or sedan” (55.2%) to get to their medical appointment. This was followed by “wheelchair-accessible vehicle” for their medical ride (19.2%).

Interestingly, a high rate of patients receiving treatment of substance abuse reported using “public transportation” to get to medical appointments (28.3%).

Ride Services	Composite	Dialysis for Kidney Disease	Wound Care for Diabetes	Treatment for Substance Abuse
Van or sedan (not taxi)	55.2	57.8	56.3	50.5
Wheelchair-accessible vehicle	19.2	23.5	31.1	5.1
Public transportation	11.1	2.8	3.4	28.3
Reimbursement for miles on your own vehicle	4.8	3.0	1.0	10.0
Stretcher-accessible vehicle	2.9	4.8	2.9	0.0
Lyft or Uber	2.8	3.5	1.9	2.3
Taxi	2.0	2.8	1.9	1.0
Other	1.9	1.7	1.5	2.6
Family or friend	0.1	0.0	0.0	0.3

Effect of NEMT transportation on all patients...

Across all patients surveyed, over two-thirds of respondents reported “scheduling” (73.1%) and “going to” (72.3%) over ten (10) appointments per month. However, when asked how many appointments respondents would be able to attend without NEMT services, a majority (57.6%) reported they would not be able to attend any appointments. The average number of appointments fell from 12.03 appointments per month to 3.58 appointments per month without NEMT services.

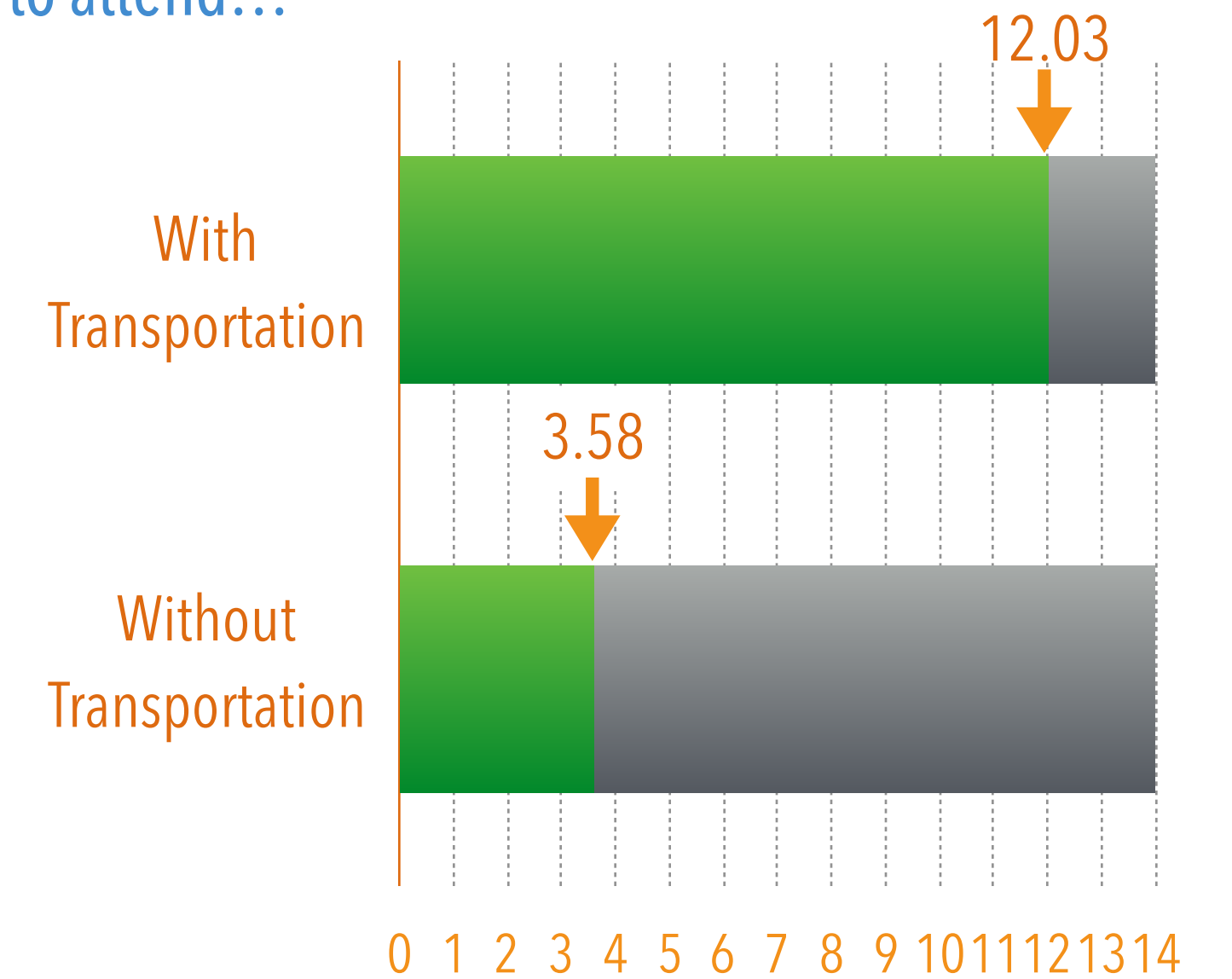


How many medical appointments, per month, do you typically have scheduled to treat your condition?

How many of those medical appointments, per month, would you say that you go to?

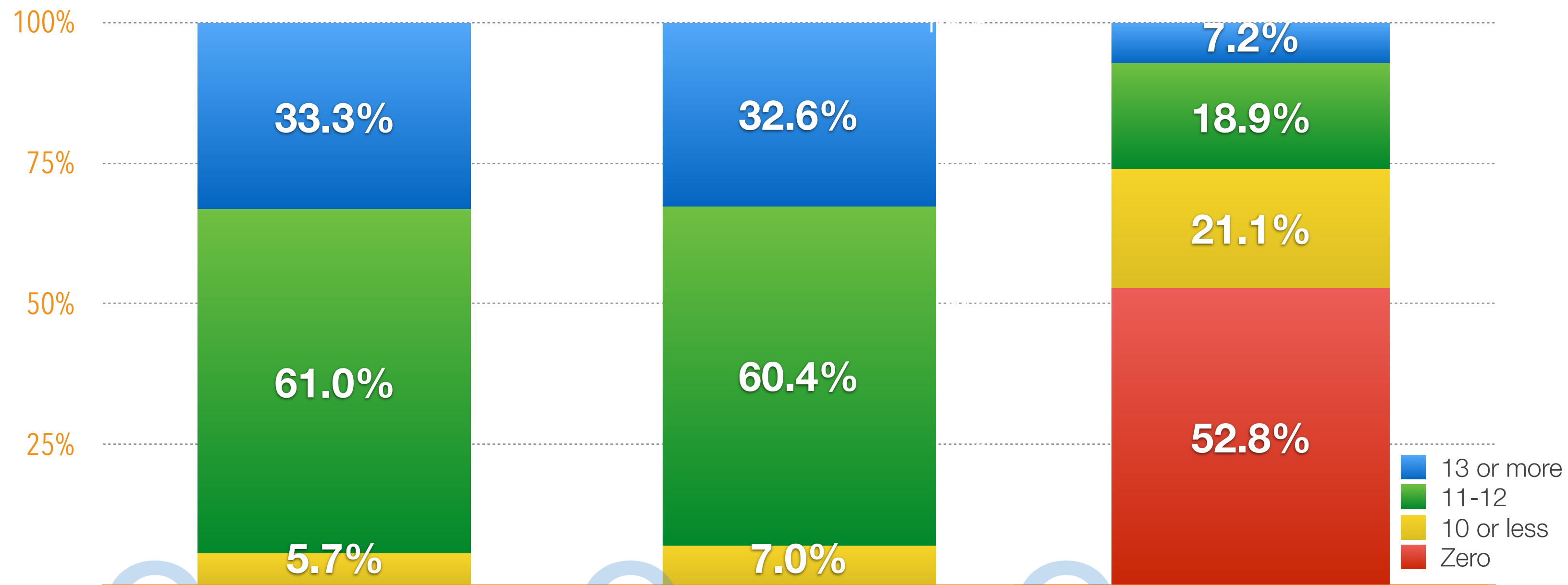
If you did not have access to medical rides, how many monthly appointments do you believe you would attend?

Average number of treatments patients are able to attend...



Dialysis patients...

Across dialysis patients surveyed, over nine-tenths of respondents reported “scheduling” (94.3%) and “going to” (93.0%) over ten (10) appointments per month. However, when asked how many appointments respondents would be able to attend without NEMT services, a majority (52.8%) reported they would not be able to attend any appointments. The average number of appointments fell from 11.97 appointments per month to 4.05 appointments per month without NEMT services.

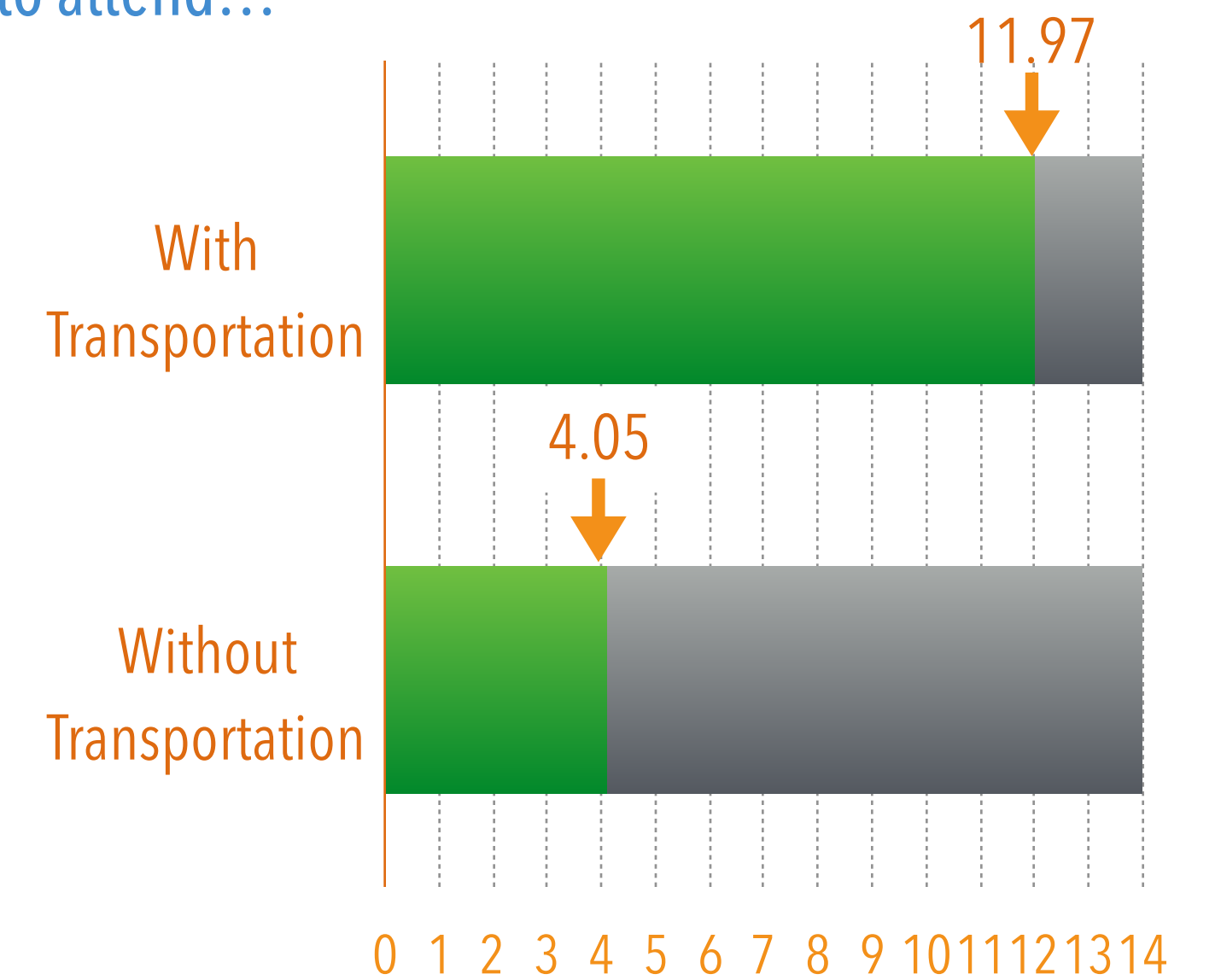


How many medical appointments, per month, do you typically have scheduled to treat your condition?

How many of those medical appointments, per month, would you say that you go to?

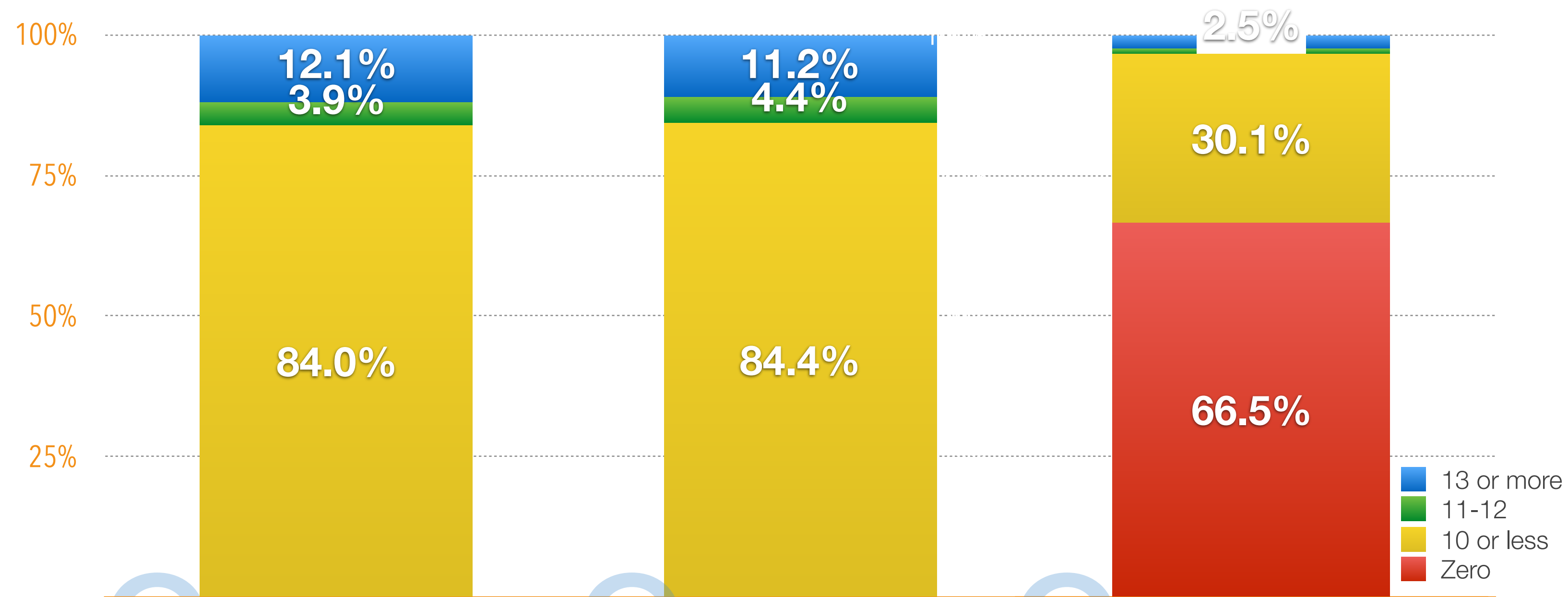
If you did not have access to medical rides, how many monthly appointments do you believe you would attend?

Average number of treatments patients are able to attend...



Wound care for diabetes patients...

Across diabetes patients surveyed, over four-fifths of respondents reported “scheduling” (84.0%) and “going to” (84.4%) ten (10) appointments or less per month. However, when asked how many appointments respondents would be able to attend without NEMT services, almost two-thirds (66.5%) reported they would not be able to attend any appointments. The average number of appointments fell from 5.56 appointments per month to 1.37 appointments per month without NEMT services.

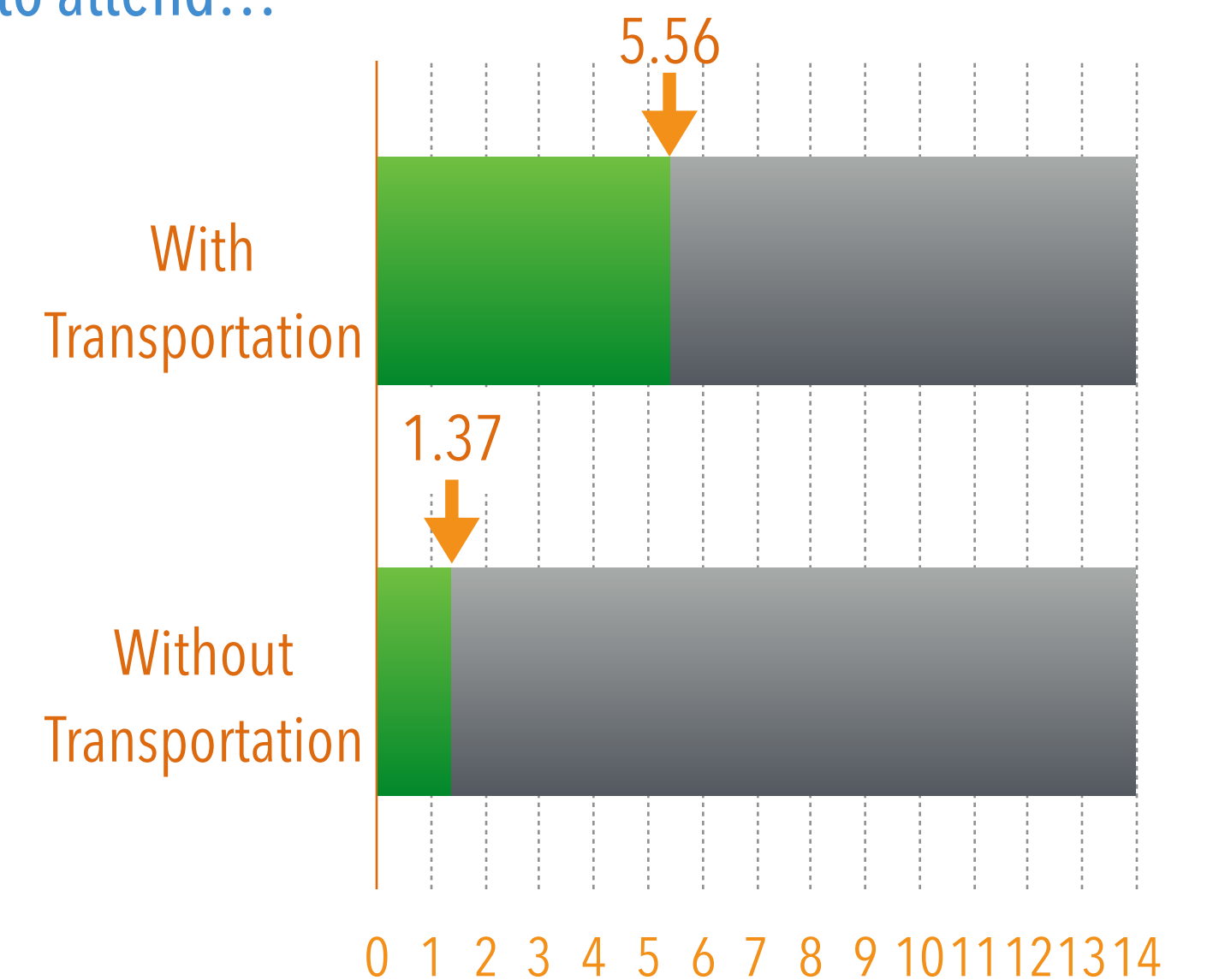


How many medical appointments, per month, do you typically have scheduled to treat your condition?

How many of those medical appointments, per month, would you say that you go to?

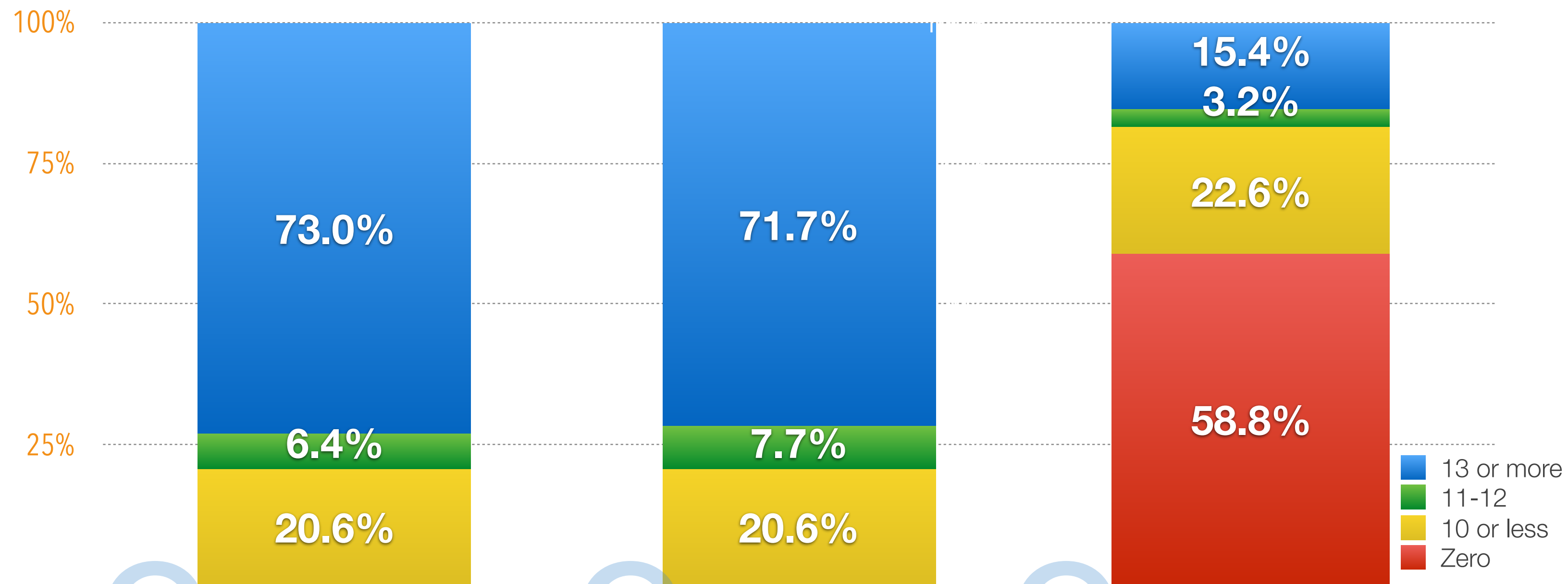
If you did not have access to medical rides, how many monthly appointments do you believe you would attend?

Average number of treatments patients are able to attend...



Substance abuse patients...

Across dialysis patients surveyed, over three-quarters of respondents reported “scheduling” (79.4%) and “going to” (79.4%) over ten (10) appointments per month. However, when asked how many appointments respondents would be able to attend without NEMT services, a majority (58.8%) reported they would not be able to attend any appointments. The average number of appointments fell from 16.40 appointments per month to 4.36 appointments per month without NEMT services.

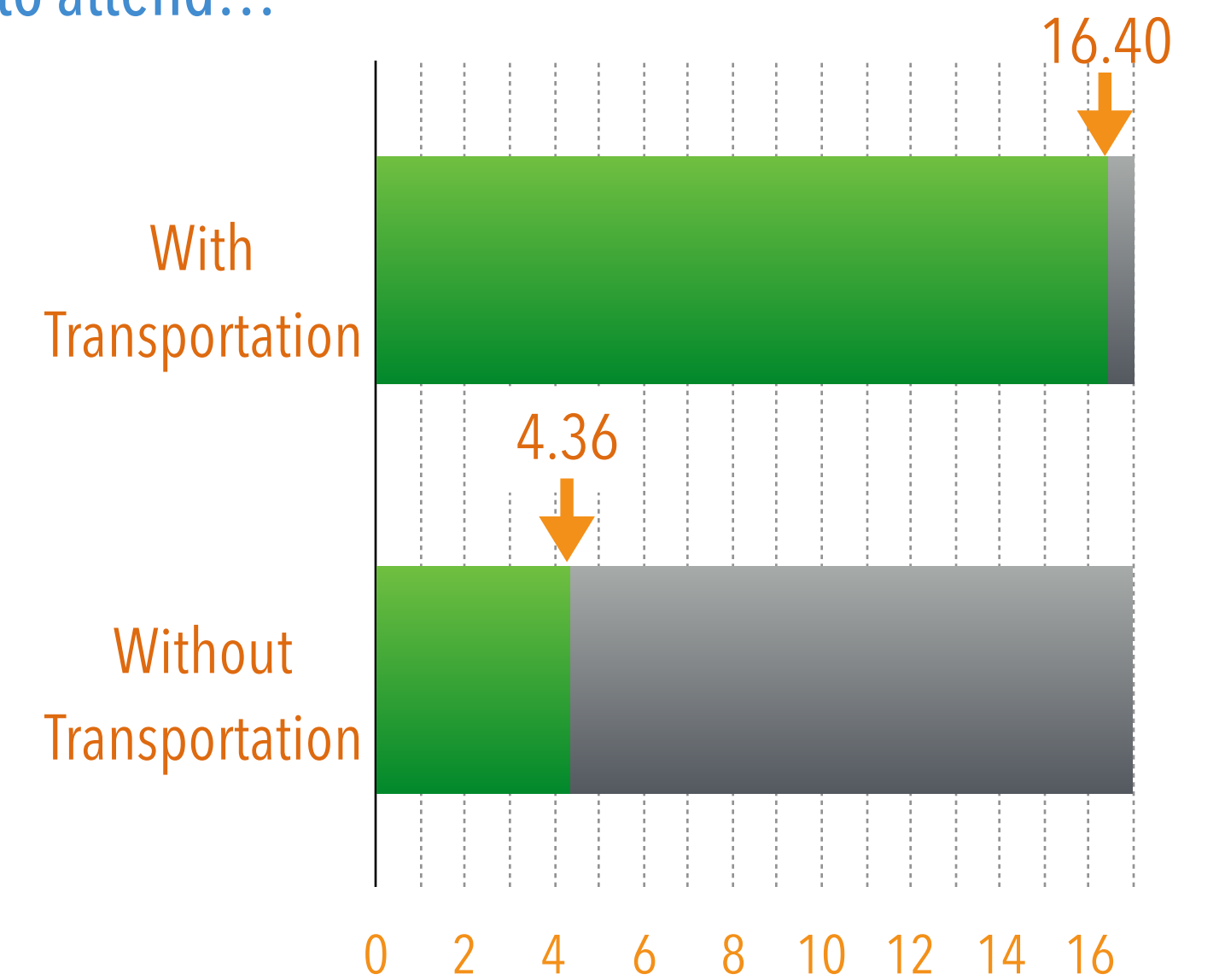


How many medical appointments, per month, do you typically have scheduled to treat your condition?

How many of those medical appointments, per month, would you say that you go to?

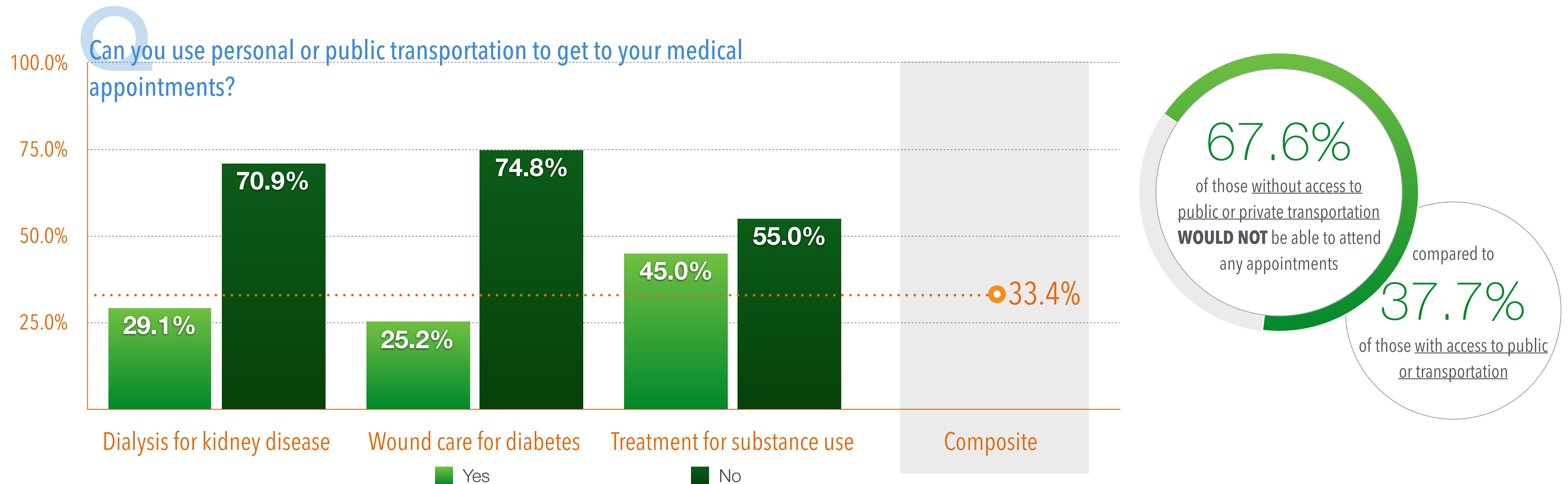
If you did not have access to medical rides, how many monthly appointments do you believe you would attend?

Average number of treatments patients are able to attend...



Lack of options for alternative transportation

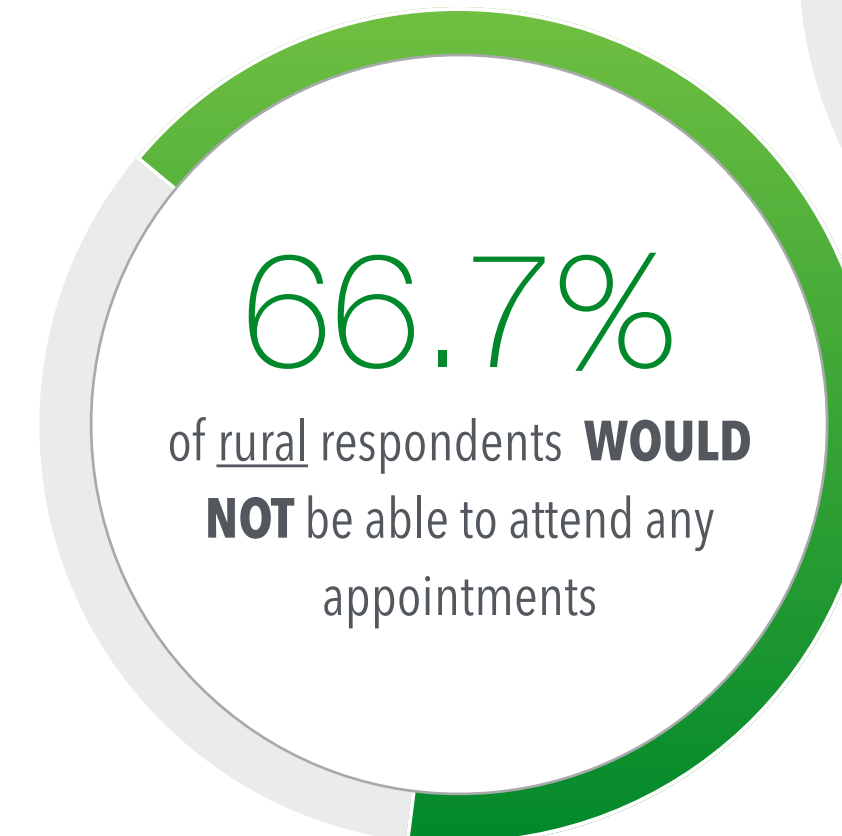
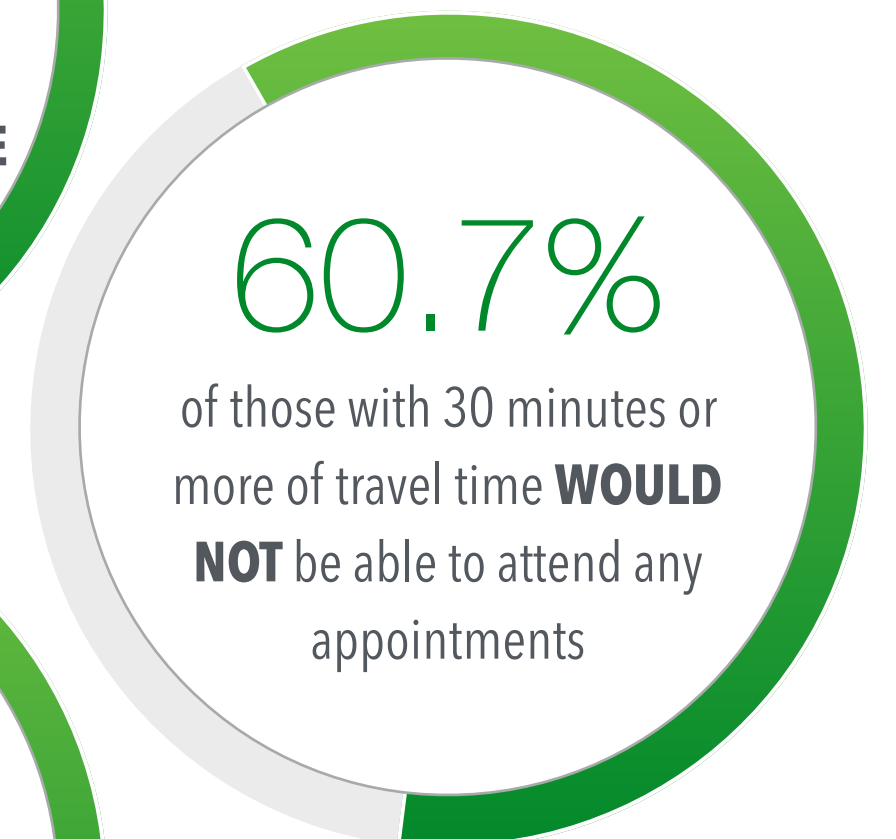
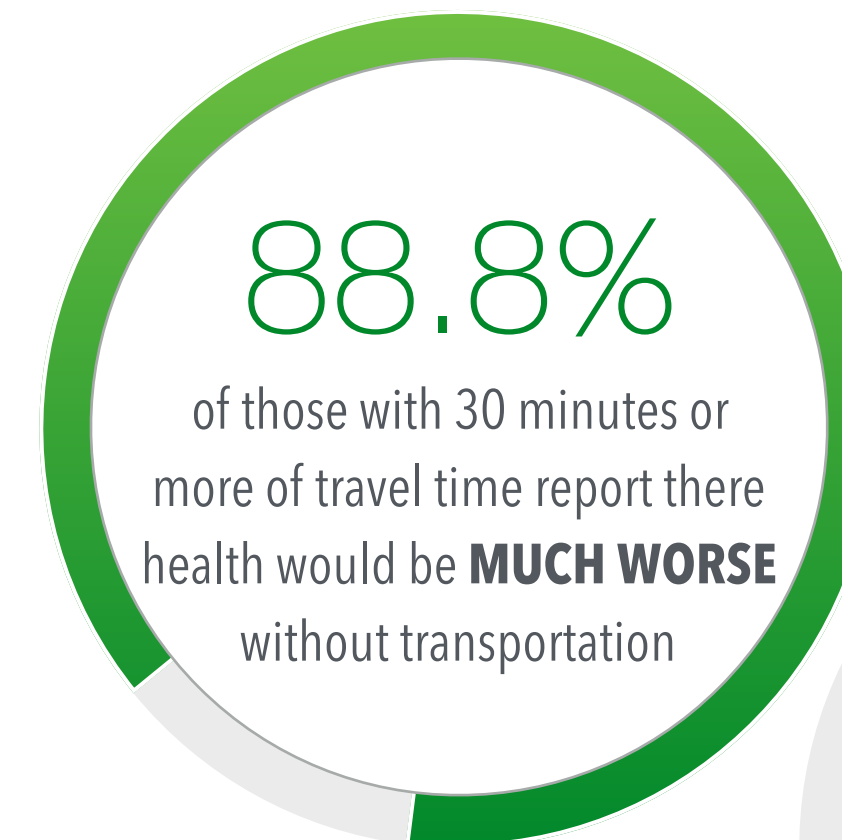
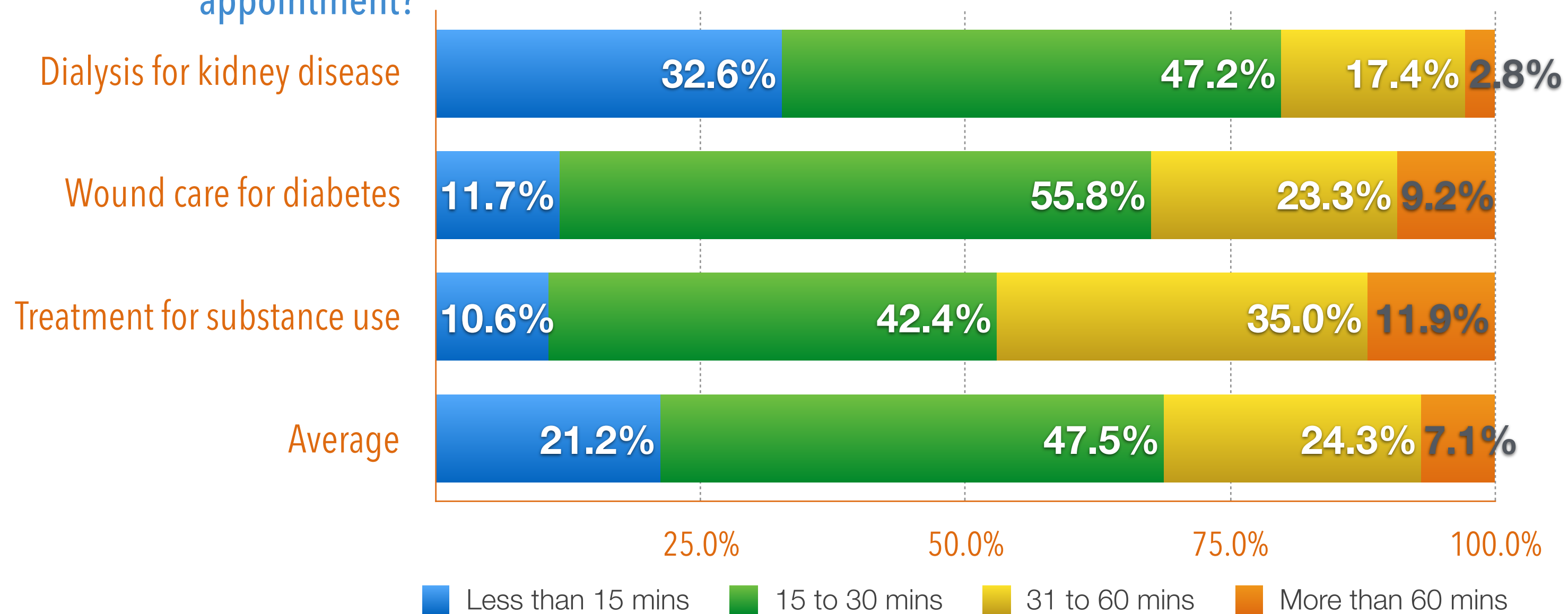
One-third of all patients surveyed (33.4%) reported having access to personal or public transportation to get to medical appointments, which implies that 651 of the 977 patients surveyed would not have access to personal or public transportation to get to medical appointments. Among those patients without other transportation options, 67.6% would not be able to attend any medical appointments without NEMT services.



Distance traveled impacts health concerns

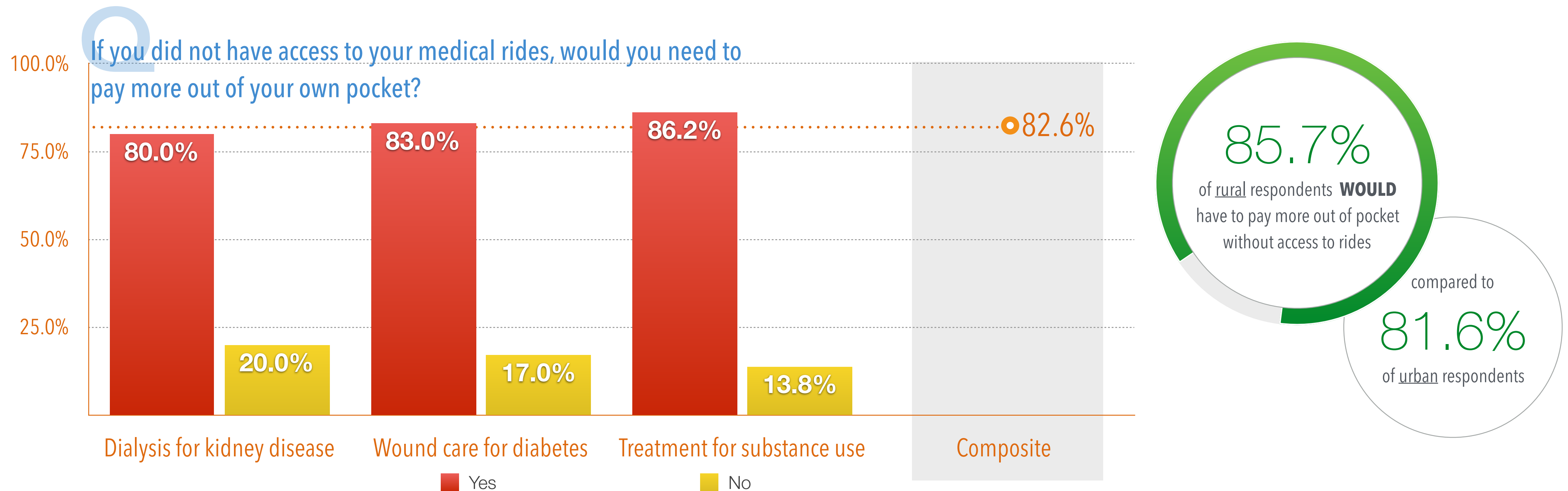
Slightly less than one-third of patients reported traveling over 30 minutes for their medical appointments. Among those with an extended travel time, 88.8% reported their health would be much worse and 60.7% would not be able to attend any appointments without NEMT services. Further, two-thirds of rural respondents (66.7%) reported they would not be able to attend any appointments without NEMT services.

How long does it take you to travel one-way to your medical appointment?



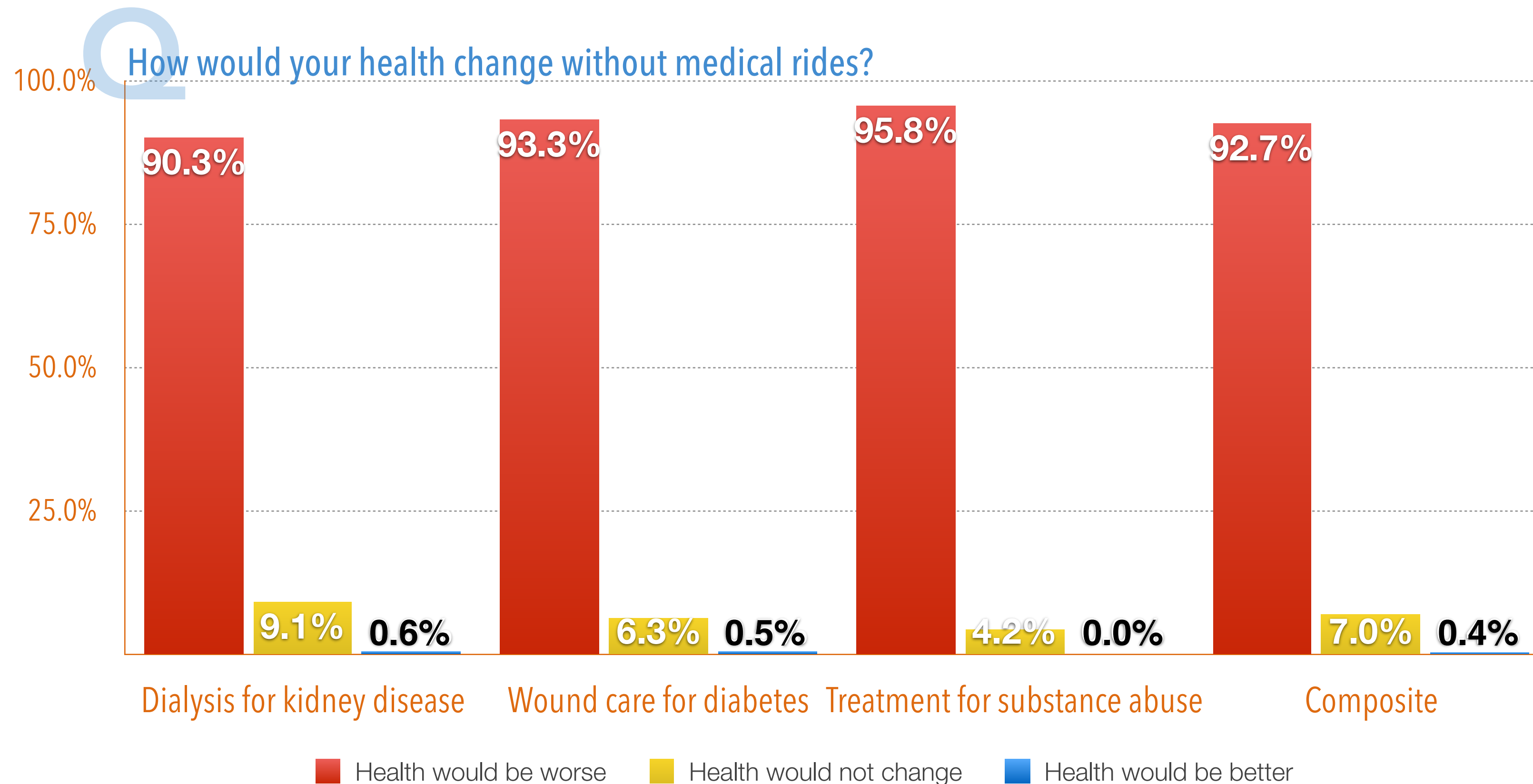
Out of pocket costs increase

The majority of patients reported that they would be required to pay more out of pocket without access to medical rides (82.6%). Further, a higher rate of respondents receiving treatment for substance abuse (86.2%) and rural respondents (85.7%) reported having to pay more out of pocket without access to rides.



Serious health impacts without transportation

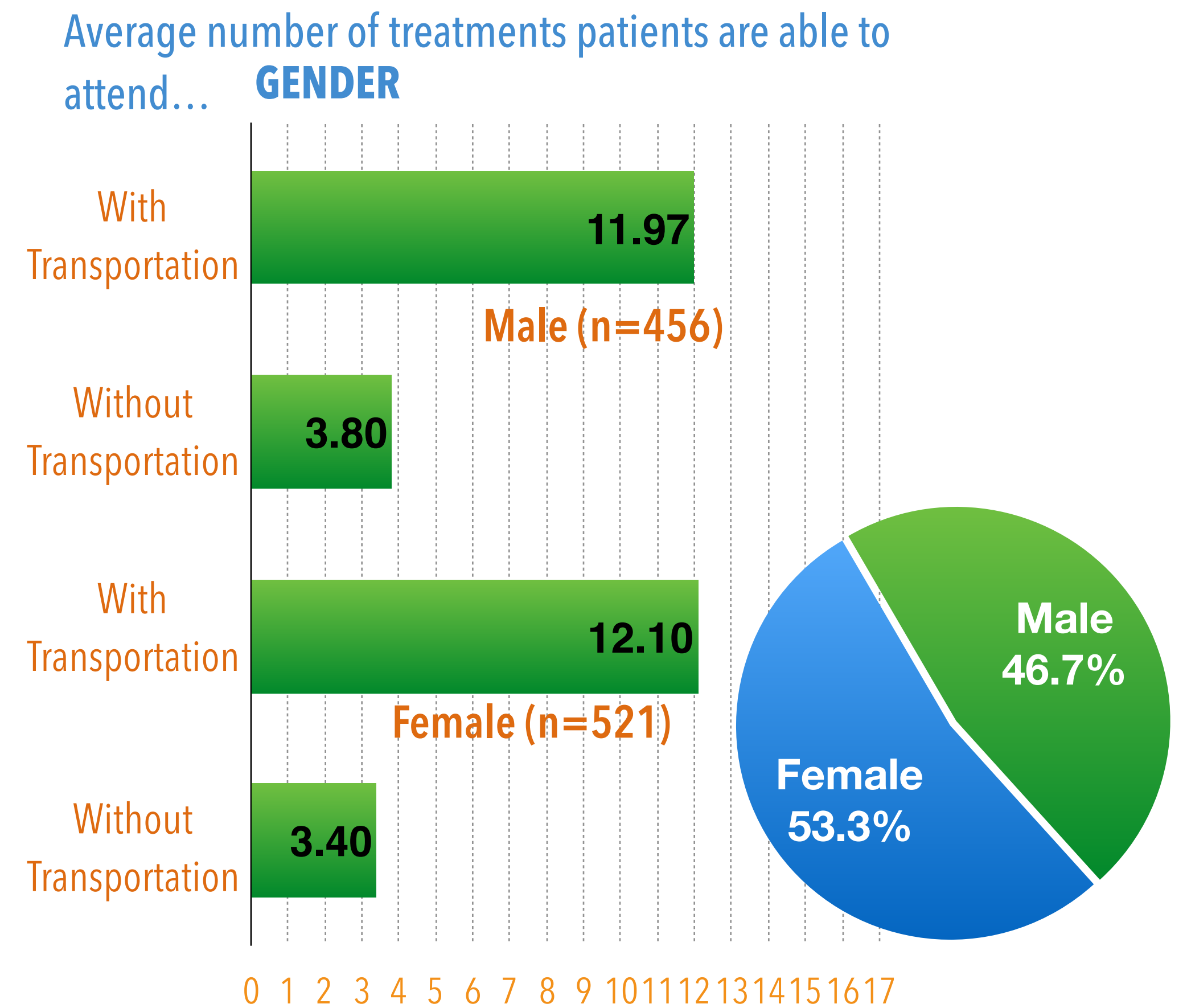
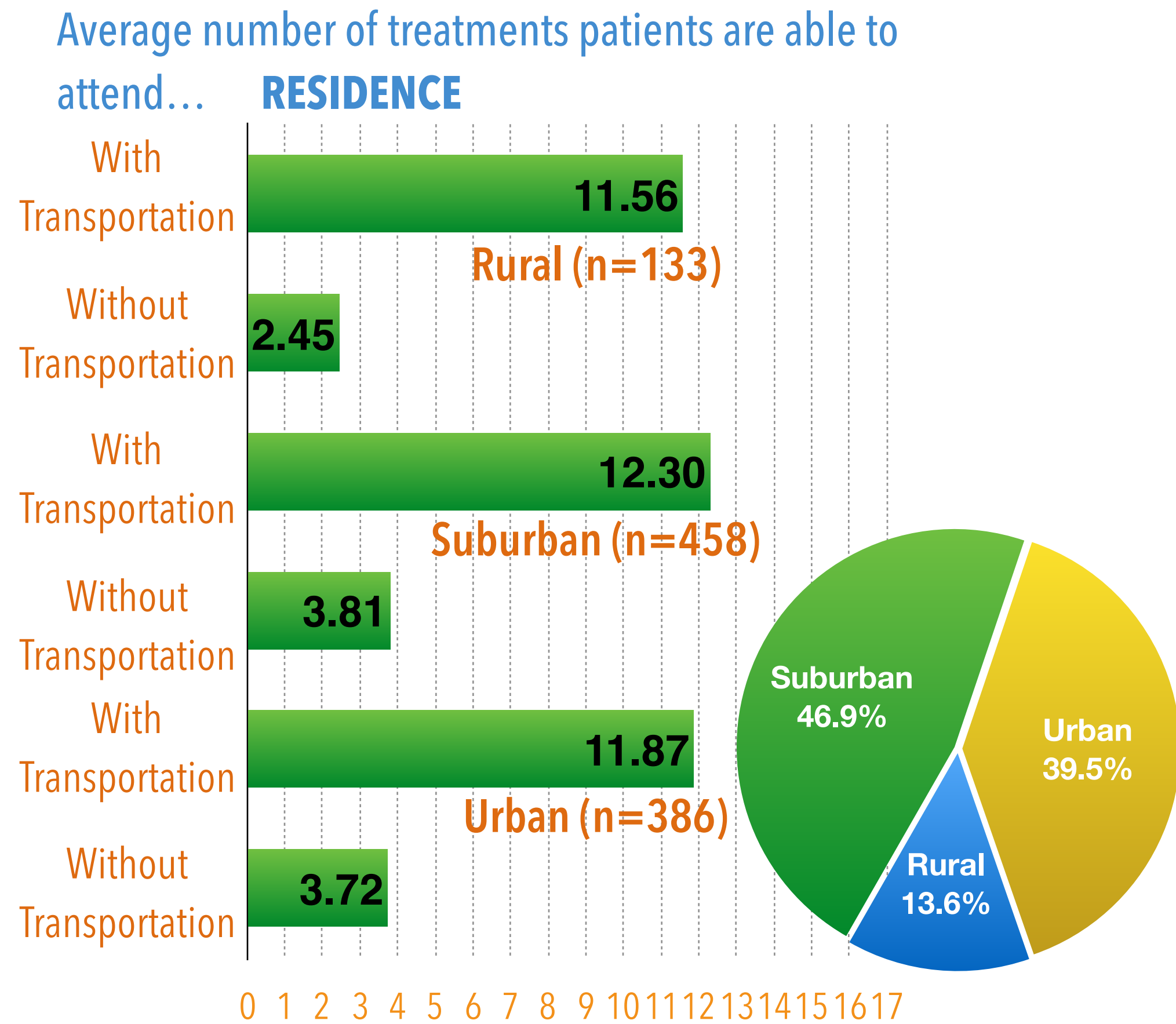
The majority of patients reported that their health would become either “much worse” or “slightly worse” if they lacked access to medical rides, yielding a rate of 92.7% of all patients reporting worsening health in this situation.



In your own words, what would happen if you did not have the ride services you currently receive?

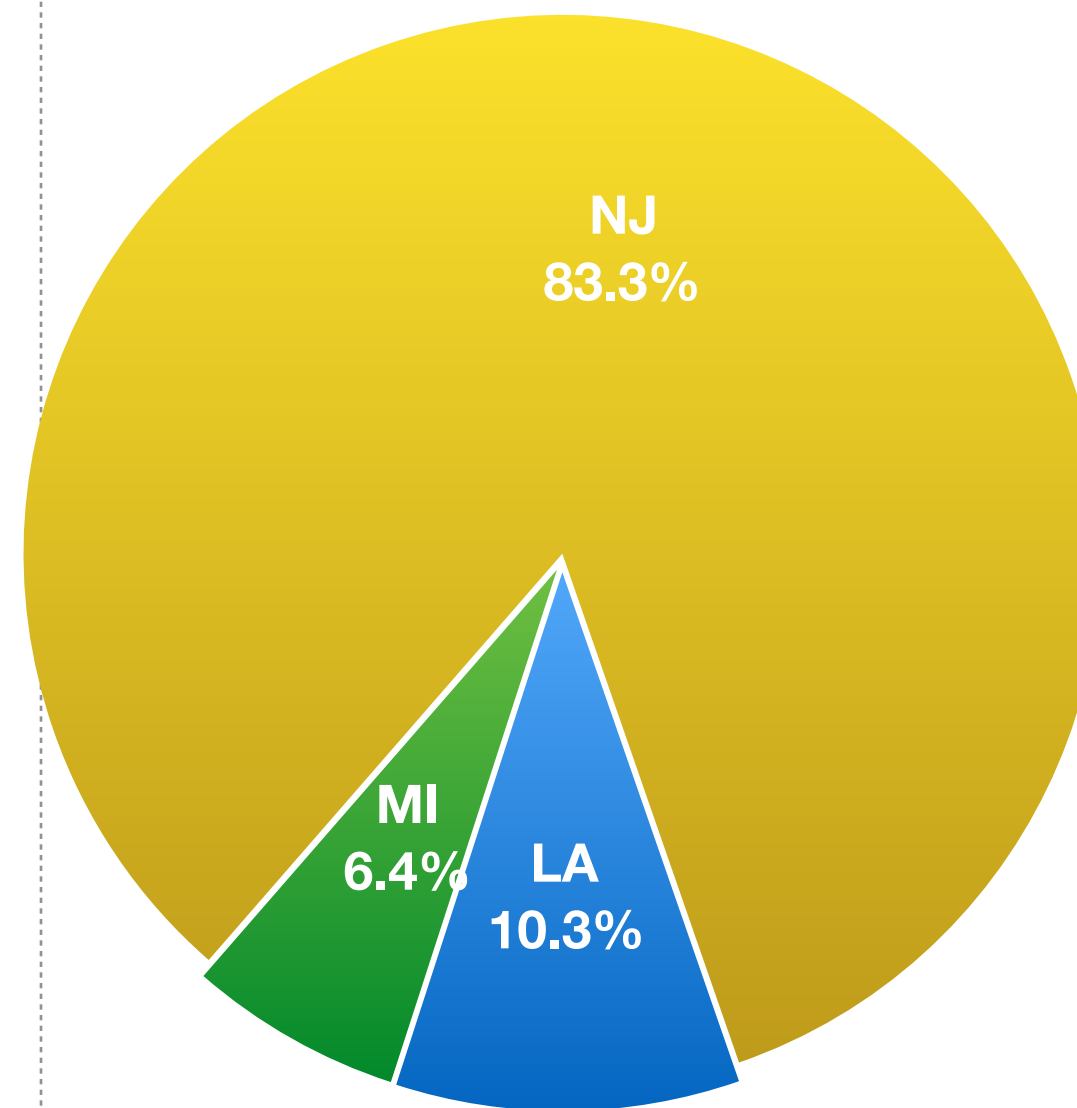
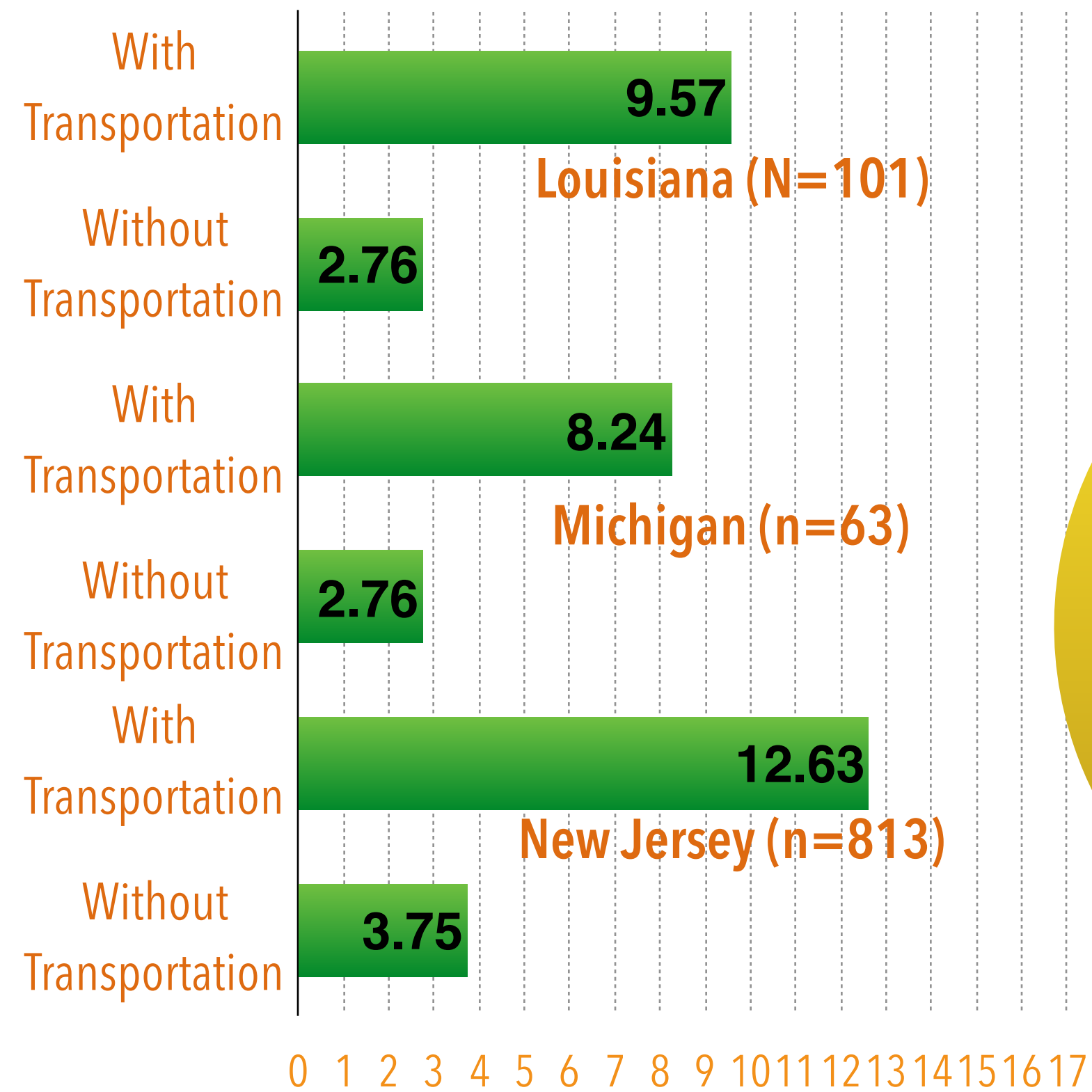
103 of 977 patients reported that they **"would die/would probably die"** without rides

Demographic breakdown

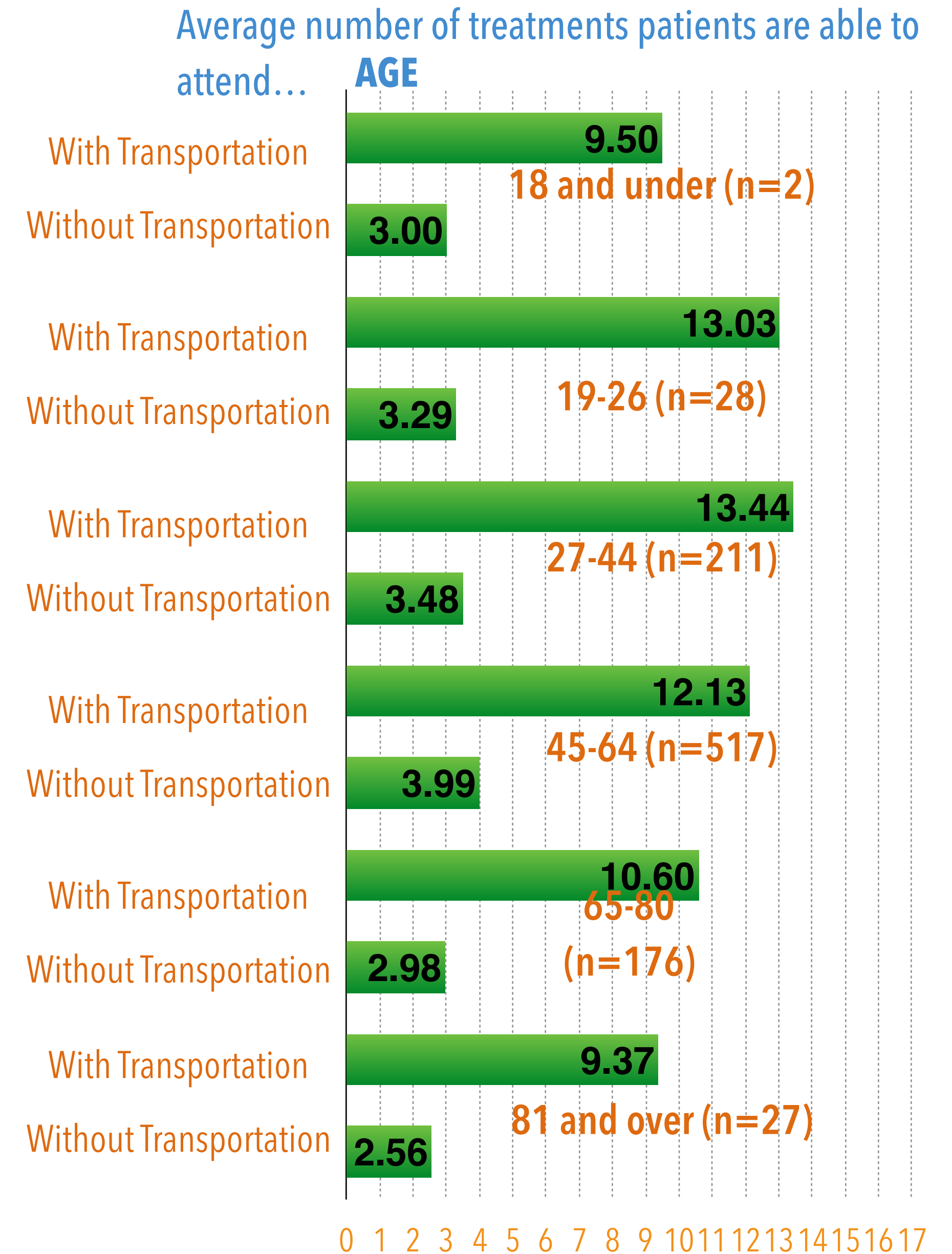
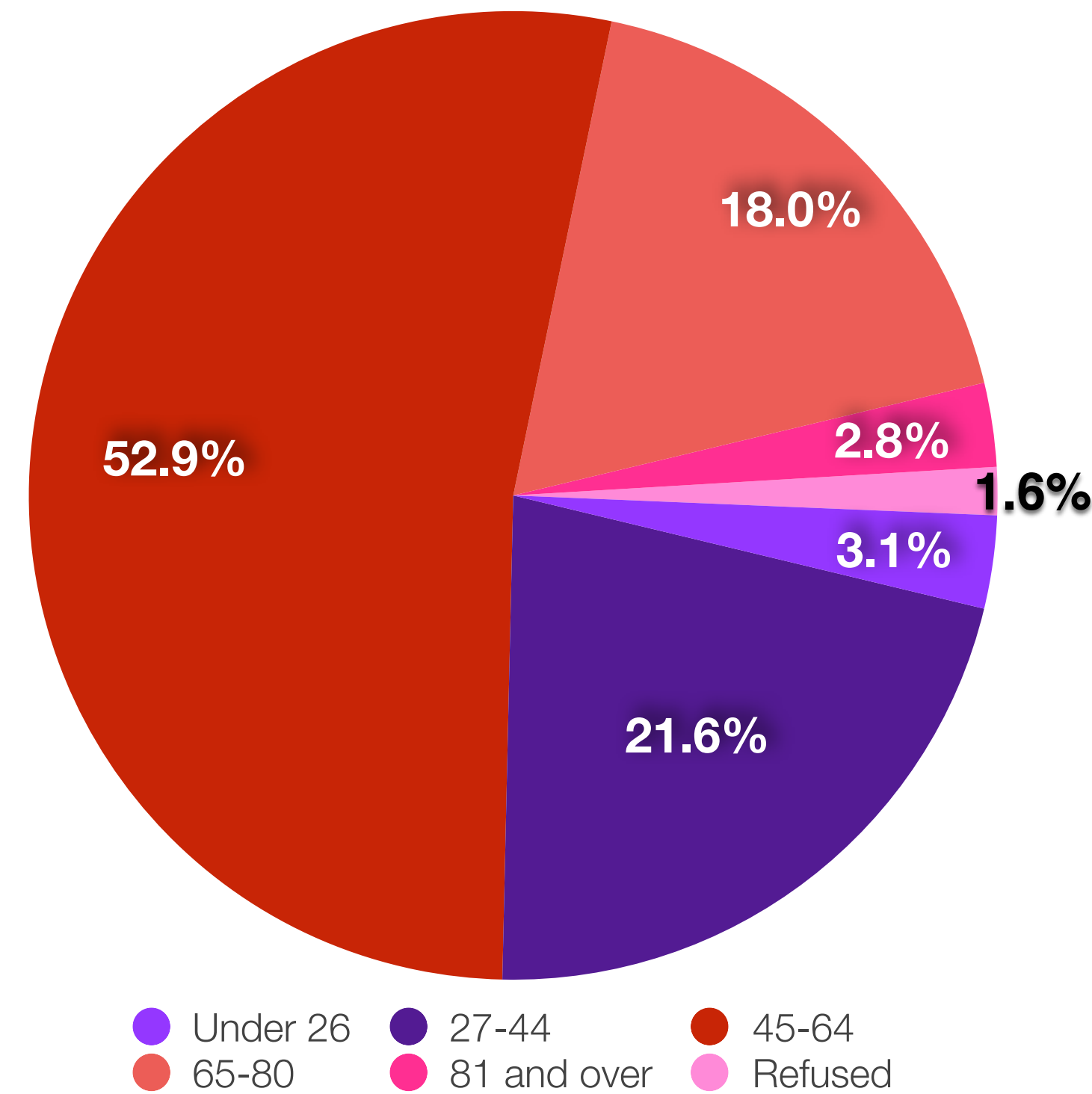


Demographic breakdown

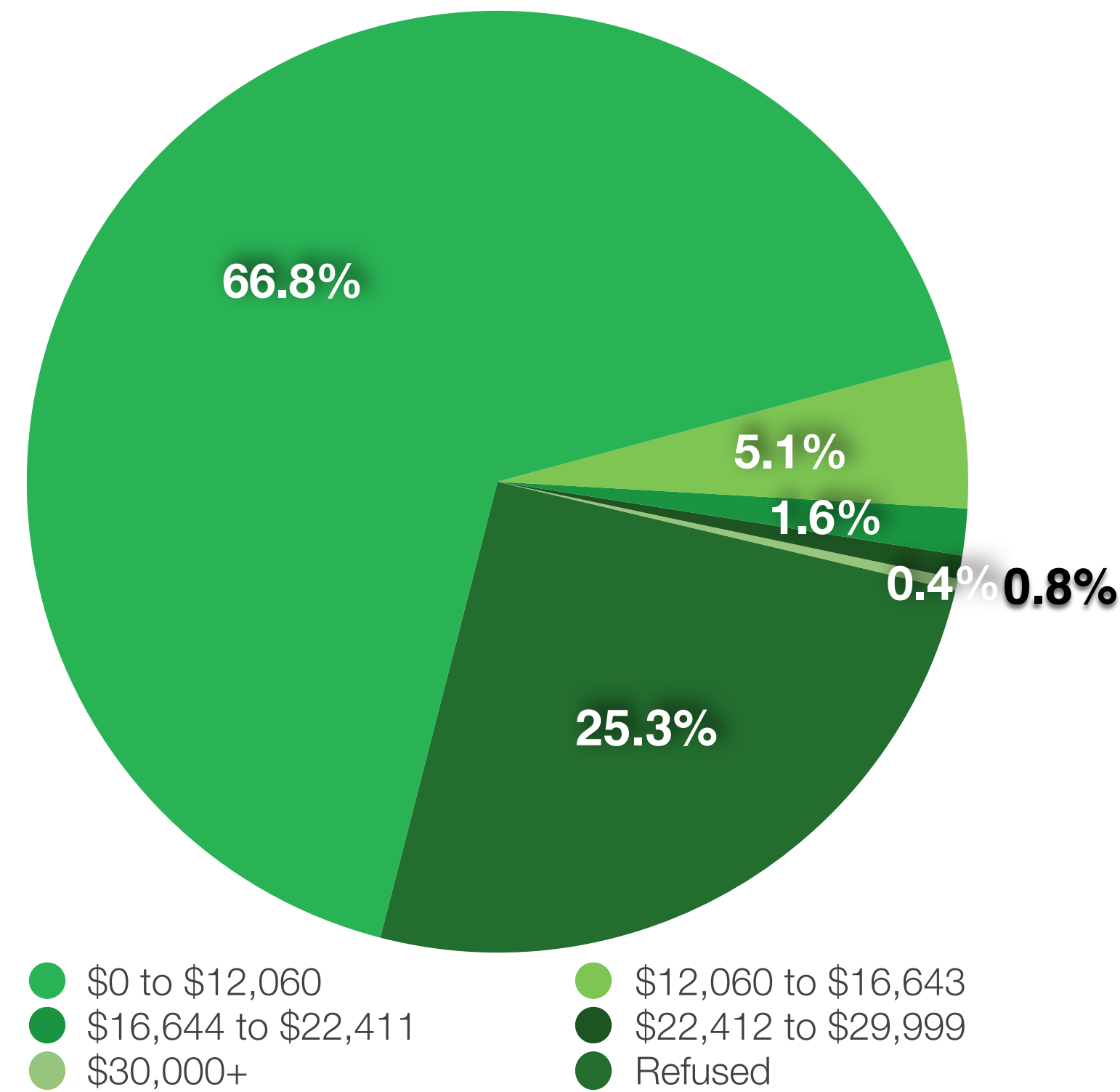
Average number of treatments patients are able to attend... **STATE**



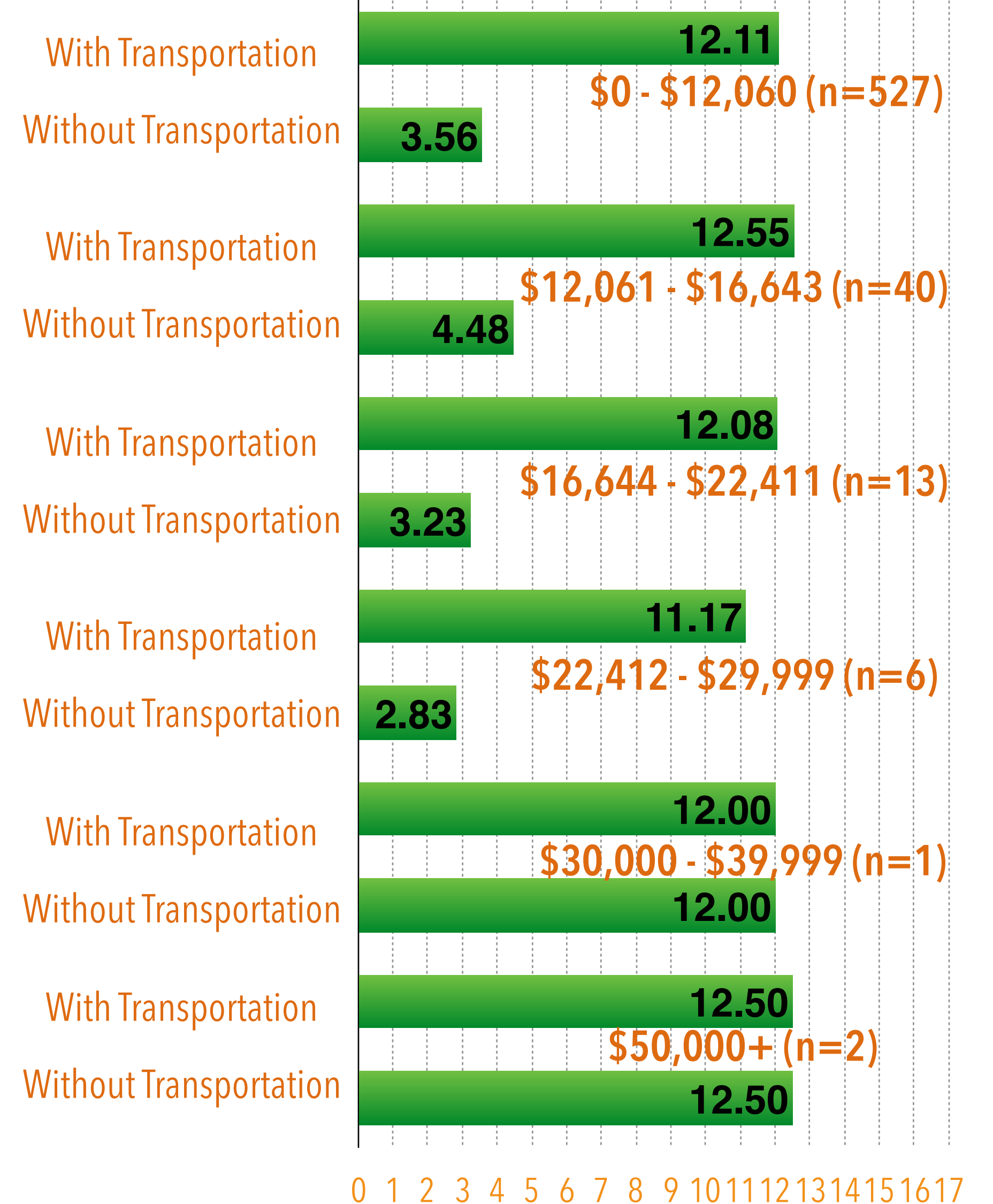
Demographic breakdown



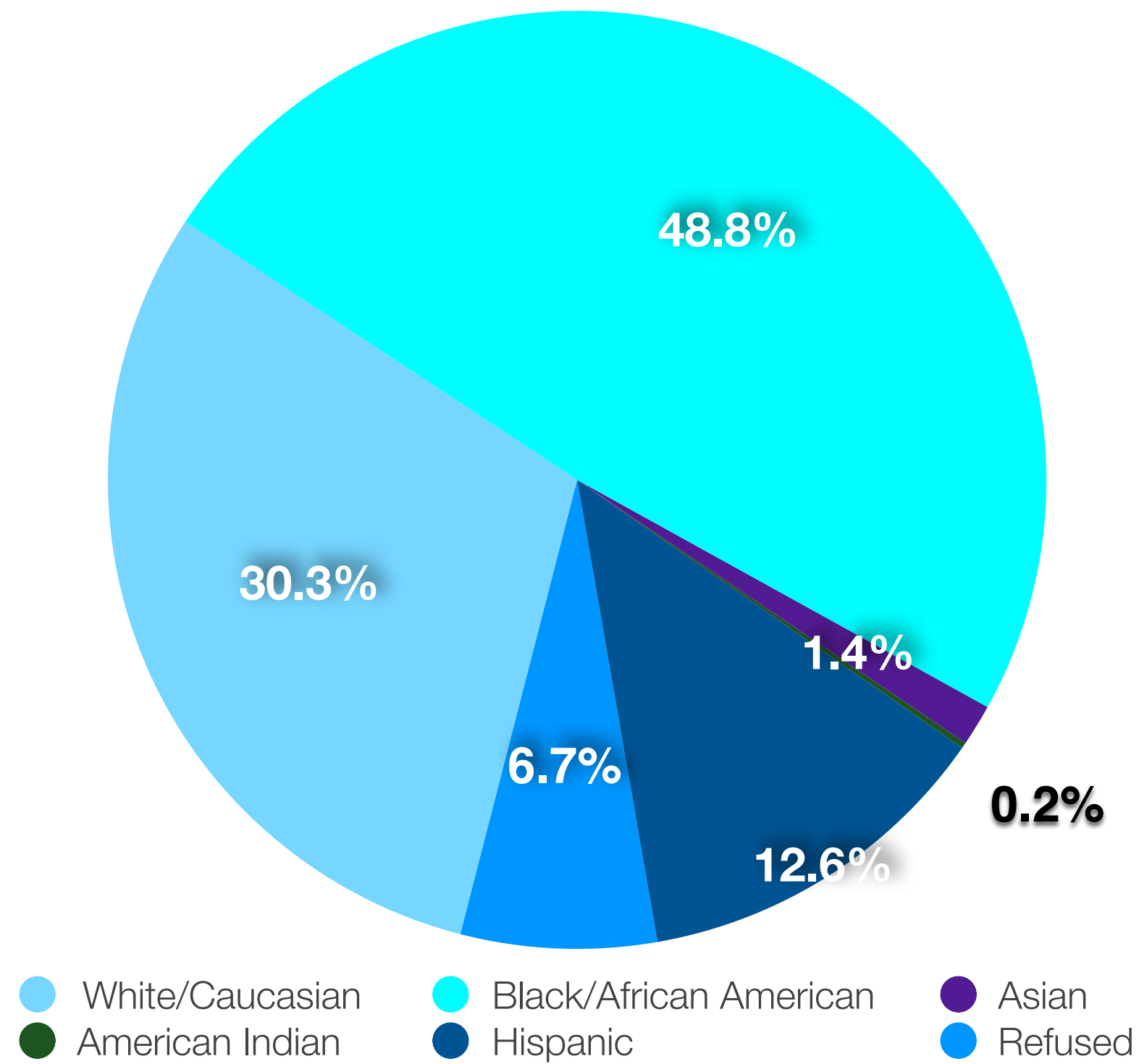
Demographic breakdown



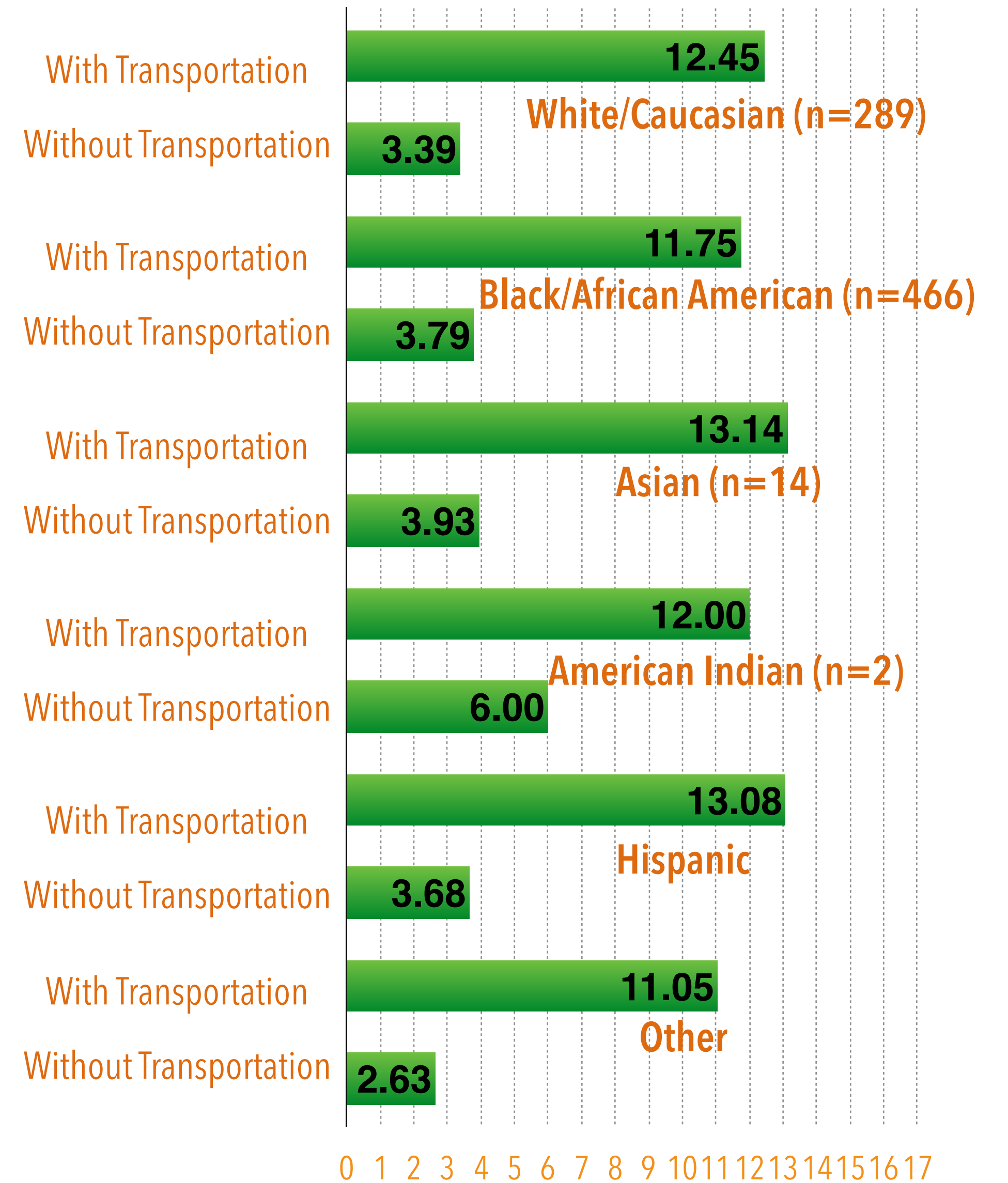
Average number of treatments patients are able to attend... **INCOME**



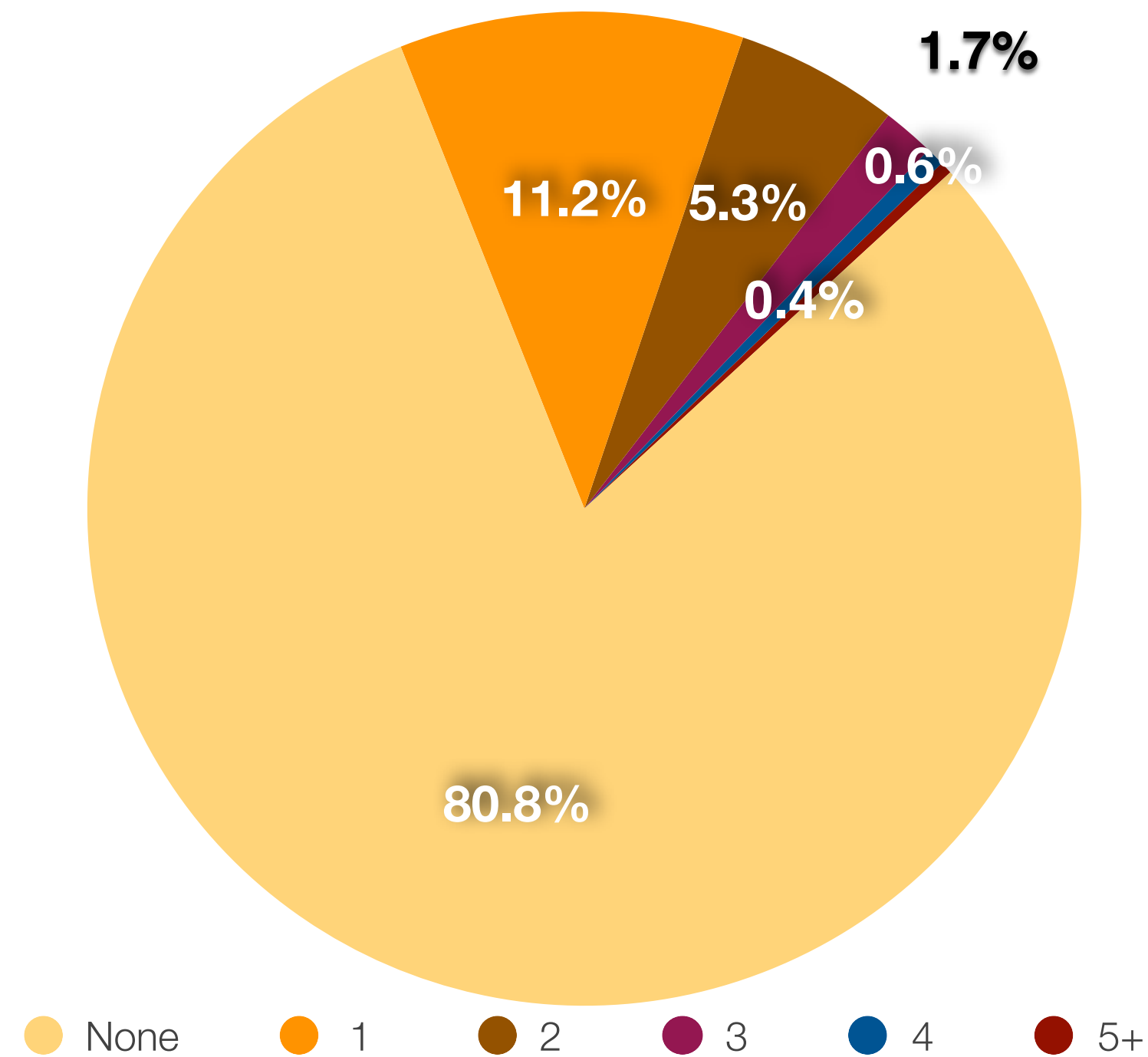
Demographic breakdown



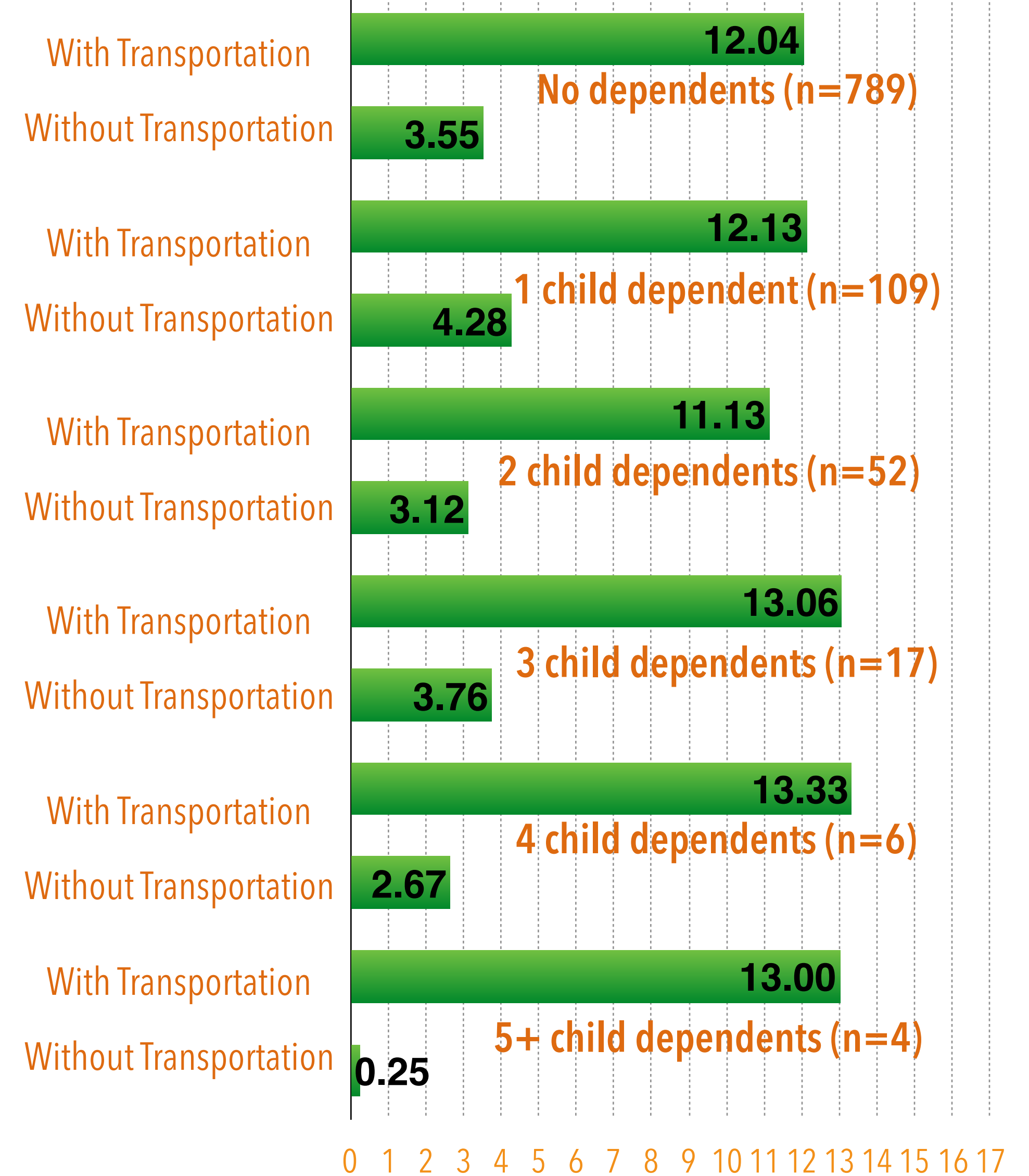
Average number of treatments patients are able to attend... **RACE**



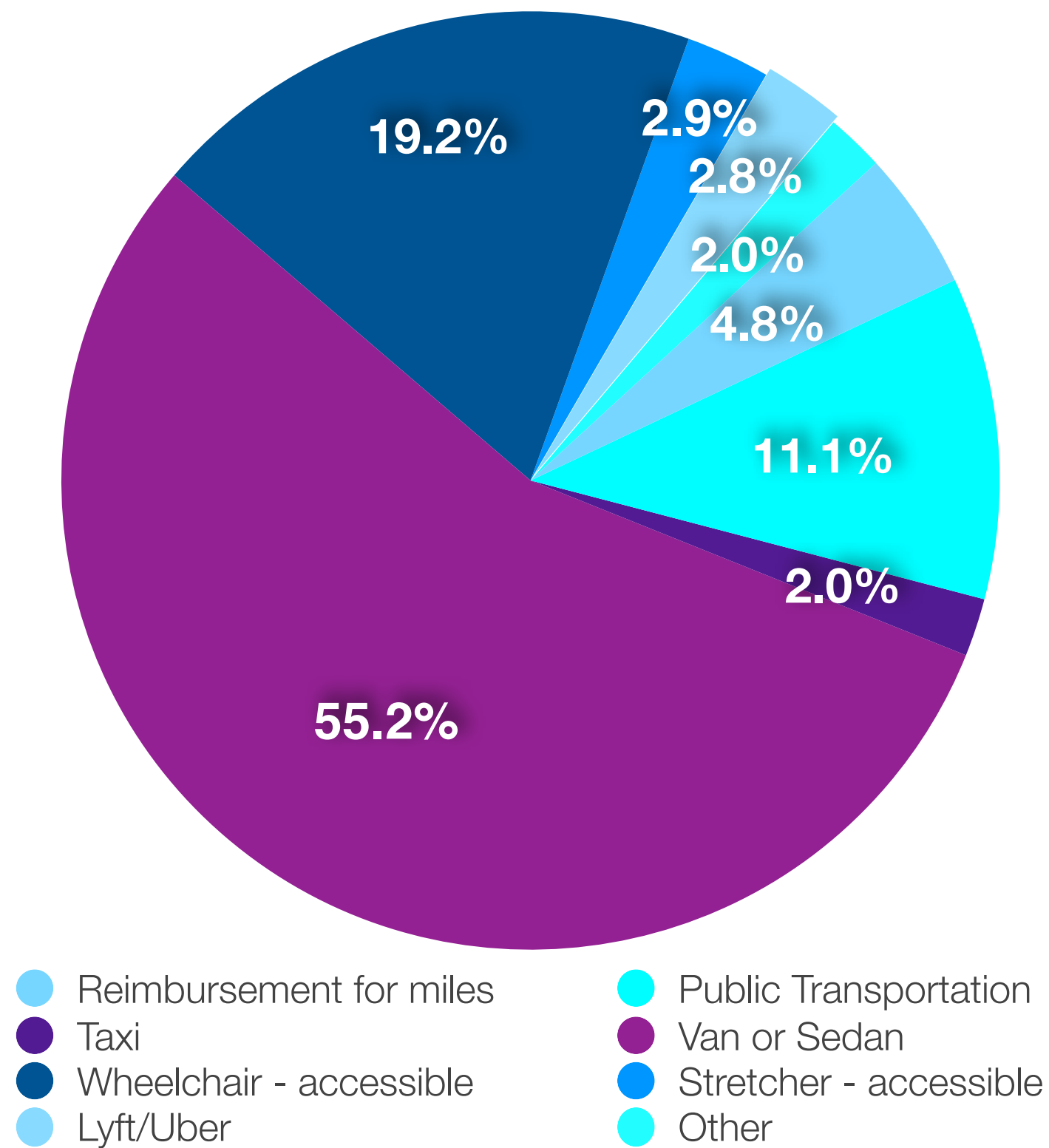
Demographic breakdown



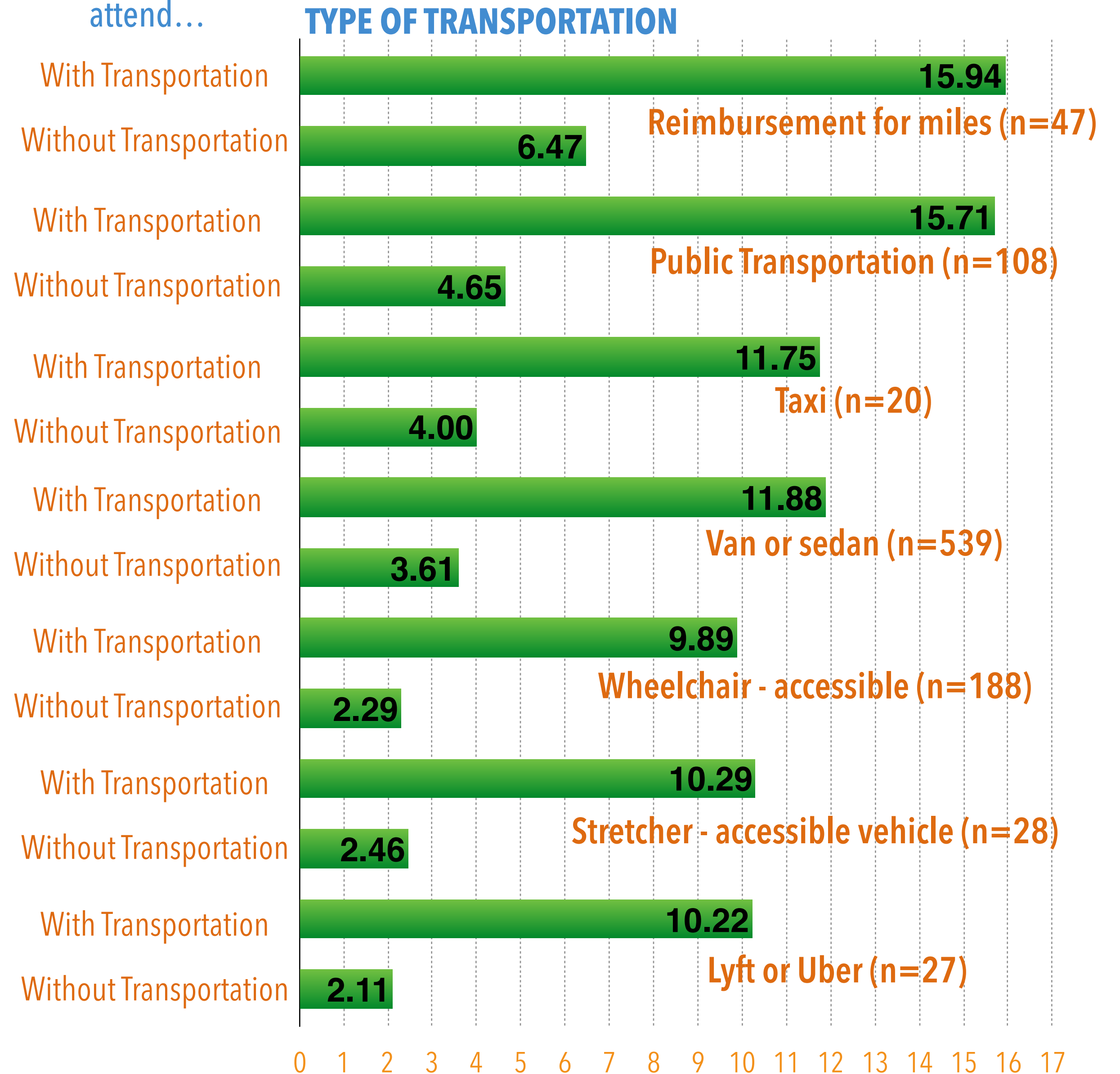
Average number of treatments patients are able to attend... **DEPENDENTS**



Demographic breakdown



Average number of treatments patients are able to attend...



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/GreatBlueResearch



@GBResearch

Non-Emergency Medical Transportation: Findings from a Return on Investment Study

Americans with low incomes may lack access to reliable transportation, and lack reliable of transportation can lead to missed medical appointments and poor health outcomes. To check this problem, Non-Emergency Medical Transportation (“NEMT”)—free or low-cost transport to medical appointments for beneficiaries who need it—has been a mandatory Medicaid benefit since the program’s inception in 1966. It is codified in regulation.¹ States can limit its availability through federal waivers. The Trump Administration’s budget would allow states to limit the benefit without seeking a waiver.² Indiana and Iowa do not provide the benefit to a most beneficiaries within their Medicaid expansion populations, and Kentucky and Massachusetts plan to do so.³

We face an unusual moment where NEMT is being expanded across multiple health insurance markets even as it faces curtailment in Medicaid.⁴ Perhaps this is because we lack strong evidence of the financial benefit of NEMT, although a few studies have offered positive savings frameworks.⁵ Because there is limited research on the financial benefit of NEMT, the [Medical Transportation Access Coalition](#) commissioned Faegre Baker Daniels Consulting, Wakely Consulting Group, and Patricia Salber, M.D., to conduct a first of its kind study to examine NEMT’s return on investment. The findings suggest that NEMT more than pays for itself as part of a care management strategy for people with chronic diseases, resulting in a total positive return on investment of over \$40 million per month (\$480 million annually) per 30,000 Medicaid beneficiaries. The methodology used to conduct the study and calculate disease specific results is detailed below.

Methodology Used to Calculate ROI

The financial benefit of NEMT is likely to be shown most clearly in the costs avoided due to increased utilization of lower cost medical services (i.e., physician appointments) to increase adherent treatment care. The theory goes: missed medical appointments lead to deviations from clinical guidelines which, in turn, lead to complications and increased expensive medical services, such as hospitalizations. Therefore, for each disease and corresponding treatment, our ROI methodology involved: (1) determining the present-state treatment volumes of NEMT users and expected future-state treatment volumes if NEMT were not provided; (2) calculating the difference in total medical costs at the present-state and future-state treatment volume levels; (3) subtracting the cost of NEMT from change in total medical costs; and (4) extrapolating the per member per month ROI to the appropriate disease population.

¹ See: <https://www.healthaffairs.org/doi/10.1377/hblog20180608.971229/full/> . See also: 42 CFR § 431.53: “Assurance of transportation. A State plan must—(a) Specify that the Medicaid agency will ensure necessary transportation for recipients to and from providers; and (b) Describe the methods that the agency will use to meet this requirement.”

² Per the President’s budget: “Make Medicaid Non-Emergency Medical Transportation Optional: Under current regulations, states are required to provide Non-Emergency Medical Transportation to all Medicaid beneficiaries. The Budget commits to using regulatory authority to change provision of this benefit from mandatory to optional.” See also: <https://www.hhs.gov/sites/default/files/fy-2019-budget-in-brief.pdf>

³ Iowa, Indiana, and Kentucky eliminate the benefit for most non-medically frail adults covered by Medicaid expansion; Massachusetts and Arizona may implement similar cuts.

⁴ See: <https://www.healthaffairs.org/doi/10.1377/hblog20170920.062063/full/>

⁵ A 2008 [study](#) conducted by Florida State University concluded that if only 1 percent of the medical trips funded resulted in the avoidance of an emergency department visit, the payback to the State would be 1108 percent. A 2013 [study](#) in the *Journal of Health Economics and Outcomes Research* examined the high costs of ambulance transportation and suggested that greater use of public transportation and NEMT might save as much as \$1 billion a year.

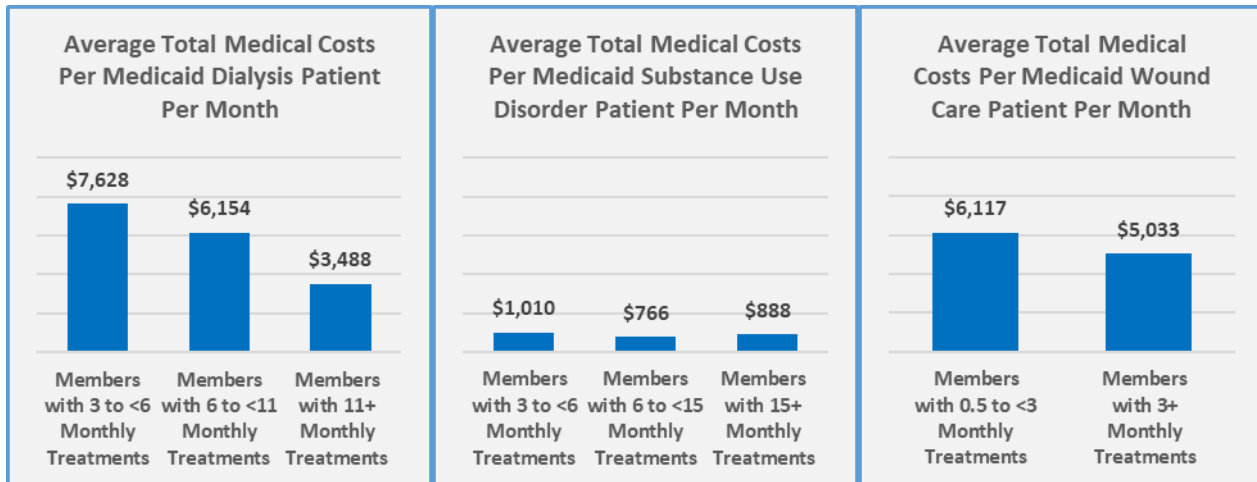
Calculating Medical Costs by Treatment Volumes

Six diseases and corresponding treatments were identified as potentially having sufficient monthly treatment volumes to be evaluated for this study: (1) wound care for diabetic wounds, (2) dialysis for kidney disease, (3) treatment for bipolar disorder, (4) treatment for schizophrenia, (5) adult day care for dementia, and (6) treatment for substance use disorder. We reviewed 2014 and 2015 Medicaid claims for each type of treatment using the Truven Health MarketScan® Database. For each disease and treatment, medical claims, pharmacy claims, and long-term care claims for members⁶ enrolled during the 24-month period were processed based on the following logic:

1. Members were identified based on an initial indicator claim and the earliest date of treatment was recorded (the “identification date”). Members whose identification date was after August 31, 2015, were excluded from the analysis. This restriction was included to ensure that an adequate number of months were used to determine the monthly adherence rate (defined below).
2. Adherence events occurring after the identification date were counted and recorded, and members were segmented by the number of days containing an adherence event post-identification divided by the member months post-identification (the “monthly adherence rate”).
3. All medical costs for each monthly adherence rate segment were summed together and divided by the total number of member months for the segment to determine the average total medical costs per member per month for the segment.
4. Finally, monthly adherence rate segments were combined based on clinical treatment protocols and medical cost changes, and very low volume treatment segments were excluded.

Additional parameters were used for dialysis and diabetic wound care. Members identified as having had a kidney transplant were removed from the analysis at the date of transplant. Members with wound care treatments spanning fewer than sixty days were not included in this study and the observation window used to calculate the monthly adherence rate for the remaining members was limited to sixteen weeks during the 24-month period after the initial treatment, since regular treatment for a wound is generally limited to 16 weeks. We did not find credible population sizes or claims for bipolar disorder, schizophrenia, and adult day care for dementia. Hence, these diseases were dropped from the analysis. The following charts show the average total medical costs for each of the remaining conditions by monthly adherence rate categories.

⁶ We use the term “members” in this paper in the interest of conforming with common health insurance industry terminology (i.e., per-member per-month). Use of this term is not meant to imply that this study controlled for a managed care delivery system. Rather, both the claims dataset and survey included a mix of fee-for-service and managed care enrollees.



Survey to Determine Treatment Volumes with and without NEMT

To determine the present-state treatment volumes of NEMT users and expected future-state treatment volumes if NEMT were not provided, we surveyed Medicaid beneficiaries who use NEMT to attend their medical appointments. We surveyed Medicaid beneficiaries in New Jersey, Louisiana, and Michigan who use NEMT services provided by LogistiCare, the nation’s largest NEMT broker.

We asked survey participants the following questions: what disease treatment he or she uses NEMT to attend; whether he or she has access to public or private transportation; what type of NEMT he or she uses; how many treatments he or she attends per month and uses NEMT to attend; how many treatments he or she would attend per month absent the availability of NEMT; how his or her health has been affected by NEMT; and what would happen if NEMT were not provided.

The survey vendor collected 460 surveys from respondents who self-identified as dialysis patients, 311 who self-identified as substance use disorder patients, and 206 who self-identified as diabetic wound care patients. We then calculated the self-reported average treatment volumes with and without NEMT per disease/treatment. See the averages and standard deviations below. (Note: nearly all survey respondents reported that they used NEMT to attend all of their treatments.)

Dialysis			Treatment for SUD			Wound Care		
Survey Count	Average Treatments per Month with NEMT (SD)	Average Expected Treatments per Month without NEMT (SD)	Survey Count	Average Treatments per Month with NEMT (SD)	Average Expected Treatments per Month without NEMT (SD)	Survey Count	Average Treatments per Month with NEMT (SD)	Average Expected Treatments per Month without NEMT (SD)
460	12.0 (1.5)	4.1 (5.3)	311	16.4 (6.1)	4.3 (7.2)	206	5.5 (3.7)	1.3 (2.7)

Overall, 58% of respondents reported that they would make none of their treatments if NEMT were not provided, 22% reported that they would make all of their treatments if NEMT were not provided, and

20% reported that they would make less than all but more than none of their treatments if NEMT were not provided. Importantly, in open-ended response to the question “what would happen if you did not have the transportation ride services you currently receive,” 103 respondents (10%) reported that they would die or probably die.

We found limited variation in the survey data by different demographics. No significant variations were found between members in different states, different genders, different marital statuses, different ethnicities, different living environments (urban/rural/suburban), or different age ranges. The only significant variations were found between members that responded “yes” or “no” to the question “do you have access to public or private transportation.” “Yes” respondents were approximately two times higher on average than “no” respondents in projecting the number of expected treatments per month without NEMT.

Specific Disease Results

A positive ROI was found for both dialysis for kidney disease and wound care for diabetes. The study failed to determine a positive ROI for SUD, though we believe our methods were ill-suited for SUD treatment and might have had better results under different study parameters.

Survey respondents reported attending 12.0 dialysis treatments per month on average with NEMT and would expect to attend 4.1 treatments per month without NEMT. The Medicaid cost analysis shows that dialysis patients who attend 3 to 6 dialysis treatments per month incur on average \$4,140 more per month in total medical costs than dialysis patients who attend 11+ dialysis treatments per month.⁷ The cost of the average round trip of NEMT for dialysis patients (based on private broker data) is \$60.24, so the average cost of NEMT per survey respondent per month for dialysis is $11.9^8 \times \$60.24 = \717.25 . Therefore, the Medicaid cost avoided due to NEMT per survey respondent per month is $\$4,140 - \$717.25 = \$3,423$. Assuming that the survey represents at least 10,000 like Medicaid members, the ROI of NEMT for treating kidney disease with dialysis per 10,000 members per month is \$34,229,448.

Survey respondents reported attending 16.4 treatments for SUD per month on average with NEMT and would expect to attend 4.3 treatments for SUD per month without NEMT. The Medicaid cost analysis shows that SUD members who attend 3 to 6 treatments per month incur on average \$123 more per month in total medical costs than SUD members who attend 15+ SUD treatments per month. The cost of the average round trip of NEMT for SUD patients (based on private broker data) is \$20.47, so the average cost of NEMT per survey respondent per month for SUD is $16.3 \times \$20.47 = \333.71 . Therefore, the Medicaid cost avoided due to NEMT per survey respondent per month is $\$123 - \$333.71 = (\$211)$. Assuming that the survey represents at least 10,000 like Medicaid members, the ROI of NEMT for treating SUD per 10,000 members per month is $(\$2,109,779)$. While our analysis does not yield positive ROI for SUD transportation, we believe different study parameters, i.e., a longer claims analysis period, relapse rates, quantification of social costs (e.g., increased employment and productivity, less law enforcement and judicial system costs, less strain on child services agencies and foster care system), likely would have led to positive ROI.

⁷ We note that alignment with the survey results with the similar average bucket is a simplifying assumption as the distribution may be non-normal. However, given data limitations, we believe this assumption is appropriate.

⁸ The average NEMT round trips per member per month (11.9) is slightly less than average treatments per member per month for dialysis (12) since a few dialysis survey respondents reported that they used NEMT to attend less than all of their treatments.

For diabetic wound care, survey respondents reported attending 5.5 wound care treatments per month on average with NEMT and would expect to attend 1.3 treatments per month without NEMT. The Medicaid cost analysis shows that wound care patients who attend 0.5 to 3 wound care treatments per month incur on average \$1,084 more monthly medical costs than wound care patients who attend 3+ wound care treatments per month. The cost of the average round trip of NEMT for wound care patients (based on private broker data) is \$53.25, so the average cost of NEMT per survey respondent per month for wound care is $5.5 \times \$53.25 = \291.96 . Therefore, the Medicaid cost avoided due to NEMT per survey respondent per month is $\$1,084 - \$291.96 = \$792$. Assuming that the survey represents at least 10,000 like Medicaid members, the ROI of NEMT for attending diabetic wound care treatments per 10,000 members per month is \$7,920,635.

Disease/ Treatment	Average Treat. per Month with NEMT	Average Monthly Medical Cost with NEMT	Average Treat. per Month without NEMT	Average Monthly Medical Cost without NEMT	Average Monthly Medical Cost Increase without NEMT	Average Cost per NEMT Round Trip	Average NEMT Round Trips PMPM	Total Cost of NEMT PMPM	Avg. ROI of NEMT PMPM	ROI Per 10,000 Members Per Month
Dialysis for Kidney Disease	12.0	\$3,488	4.1	\$7,628	\$4,140	\$60.24	11.9	\$717.25	\$3,423	\$34,229,448
Treatment for Substance Use	16.4	\$888	4.3	\$1,010	\$123	\$20.47	16.3	\$333.71	(\$211)	(\$2,109,779)
Wound Care for Diabetes	5.5	\$5,033	1.3	\$6,117	\$1,084	\$53.25	5.5	\$291.96	\$792	\$7,920,635

For all conditions, the total ROI per month is \$40,040,304 (per 30,000 members; 10,000 in each condition).

Policy Implications

The significant positive ROI associated with dialysis and wound care transport demonstrate that, at least for these conditions and presumably others (such as asthma and heart disease), curtailing NEMT is penny-wise, pound-foolish. While our analysis does not yield positive ROI for SUD transportation, we believe that speaks to study limitations rather than the value of the benefit. The data presented above offers a strong indication that NEMT more than pays for itself as part of a care management strategy for people with chronic diseases within and outside of Medicaid.

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