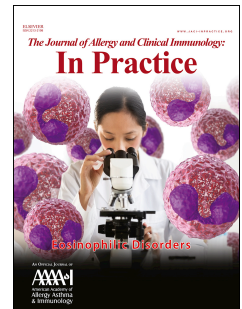


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**Patient Carrying Time, Confidence, and Training with Epinephrine Auto-Injectors: the RACE Survey**

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## ABSTRACT

**Background:** Limited real-world data exist regarding patient carrying compliance and confidence in using different types of epinephrine auto-injectors (EAI).

**Objective:** To perform a Real-world Assessment of Patients' Carrying Time and Confidence with Epinephrine Auto-injector Devices (RACE survey).

**Methods:** This was a non-interventional survey of patients ( $\geq 7$  years) who filled  $\geq 1$  prescription for Auvi-Q or EpiPen between 01/2013-01/2014. Outcomes included: proportion of patients carrying their EAI all the time in the last 7 days (primary), EAI use confidence (secondary), and EAI training experience (secondary). Multivariate regression analyses controlled for significant differences in demographic and clinical characteristics between EAI groups.

**Results:** The survey included 2000 participants (Auvi-Q, N=1000 [children, n=597; adults, n=403]; EpiPen, N=1000 [children, n=105; adults, n=895]). After adjusting for confounding factors, Auvi-Q respondents were more likely to carry their device all the time in the last 7 days versus EpiPen respondents (adjusted odds ratio [aOR], 1.91 [95% CI: 1.49, 2.45];  $P < .001$ ); similar trends were observed in adults and children ( $P < .001$  both). Adults in the Auvi-Q group were more likely to feel "very confident" about correctly using their EAI (aOR, 2.02) and someone else correctly using their EAI (aOR, 2.25) versus the EpiPen group ( $P < .001$  both). Compared with EpiPen, Auvi-Q respondents were more likely to feel EAI instructions were "very clear" (aOR, 3.10) and more likely to find the prescription pack trainer helpful (aOR, 2.29;  $P < .01$  both).

**Conclusions:** This study suggests significant real-world differences in patients' carrying time, confidence in use, and training experiences between Auvi-Q and EpiPen users.

## Highlights Box

1. **What is already known about this topic?** Anaphylaxis is a severe and potentially life-threatening systemic reaction. As prompt treatment is critical, guidelines recommend at-risk patients always carry epinephrine auto-injector devices; however, patients often fail to both consistently carry and use their devices.
2. **What does this article add to our knowledge?** In this large, real-world survey, Auvi-Q respondents were more likely to carry their epinephrine auto-injector all the time, rate device instructions as very clear, and adults had higher confidence in device use versus EpiPen respondents.
3. **How does this study impact current management guidelines?** Understanding the considerations for carrying an EAI—which may influence patient behavior and carrying compliance—could help improve the likelihood of a patient having his/her epinephrine auto-injector available in case of a life-threatening allergic emergency.

## Keywords

questionnaire, Auvi-Q, EpiPen, carriage, adrenaline, anaphylaxis, epinephrine, auto-injector, allergic emergency

**Abbreviations**

ACE = angiotensin-converting enzyme

aOR = adjusted odds ratio

CI = confidence interval

COPD = chronic obstructive pulmonary disease

EAI = epinephrine auto-injector

LS = least squares

SD = standard deviation

US = United States

## INTRODUCTION

Anaphylaxis is a severe and potentially life-threatening systemic reaction<sup>1</sup> that may be induced by allergens such as food, medication, and venom/insect stings.<sup>2</sup> Symptom onset is often rapid—occurring within minutes of allergen exposure.<sup>3,4</sup> Thus, prompt administration of epinephrine is critical, as failure to do so may lead to increased fatalities and higher risk of hospitalizations; delayed epinephrine administration may also increase the likelihood of biphasic anaphylaxis.<sup>2,4-9</sup> As such, consensus guidelines recommend epinephrine as first-line medication for anaphylaxis treatment,<sup>2,10-12</sup> and epinephrine auto-injectors (EAI) are the standard of care outside of a healthcare setting.

Severe consequences of delayed treatment prompted guideline recommendations for patients to carry their EAI at all times<sup>2,3,7,13</sup>; however, studies have shown that patients often fail to consistently carry their device.<sup>14-24</sup> While some studies have identified patient characteristics associated with EAI carrying,<sup>14,17,22</sup> there are limited real-world data regarding patient carrying compliance and confidence in using different types of EAIs.

At the time of this study, EAI devices approved by the US Food and Drug Administration comprised EpiPen<sup>®</sup> (Mylan Specialty LP, Basking Ridge, NJ), Adrenaclick<sup>®</sup> (Amedra Pharmaceuticals LLC, Horsham, PA), and Auvi-Q<sup>®</sup> (kaleo, Inc, Richmond, VA). EpiPen is an elliptical cylinder approximately 6 inches long, with instructions printed on the side of the device, and, at the time of the study, an administration hold time of 10 seconds. Adrenaclick has a similar size and shape as EpiPen, also with instructions printed on the side of the device and an administration hold time of 10 seconds at time of the study. Auvi-Q is approximately 3.5 inches long by 2 inches wide, with instructions printed on the device and audible voice instructions, and, at the time of the study, an administration hold time of 5 seconds.<sup>25,26</sup>

The differences in EAI design and instruction for proper use may impact patient preference, correct use during an allergic emergency, and/or carrying rate. In a simulated-use study of Auvi-Q, most participants (including adults and children) agreed that the information leaflet and other Auvi-Q labeling features facilitated understanding successful use.<sup>25</sup> Further, a large, multicenter, randomized, simulated-use preference study found that overall participants (including adults, caregivers, and children) significantly preferred Auvi-Q over EpiPen for all endpoints assessed, including method of instruction, size and shape, and carrying.<sup>27</sup>

The aim of the present study was to investigate and describe patient carrying times, confidence, and training experiences by type of EAI in a real-world setting.

## METHODS

### *Survey overview*

The RACE study (Real-world Assessment of Patients' Carrying Time and Confidence with Epinephrine Auto-injector Devices) was a non-interventional, cross-sectional survey of English-speaking adults and children who filled at least 1 prescription for an EAI (Auvi-Q, EpiPen, or Adrenaclick). The study was conducted by IMS Health (now IQVIA [Danbury, CT]) in partnership with VisibilityRx (Gainesville, GA)—a company with the capability to recruit survey participants through their contractual network of nationwide pharmacy chains. The RACE study was approved by the New England Institutional Review Board (Needham, MA). Prior to survey initiation, all adult participants or parents/guardians (aged  $\geq 18$  years [ $\geq 19$  years in Alabama]) provided consent and children (aged 7 to 17 years) provided assent.

### *Participant selection and eligibility*

Survey participants were identified using non-probability convenience sampling. A single pharmacy chain, with locations in over 30 US states and a sizeable number of EAI prescriptions filled for both adults and children, was used to identify survey participants.

Patients who filled a prescription for Auvi-Q, EpiPen, or Adrenaclick between January 28, 2013 and January 31, 2014 were randomly sent an invitation letter for survey participation on the pharmacy's letterhead. The letter noted that the purpose of the study—conducted by IMS under the auspices of Sanofi US—was to “learn about patients' experience with epinephrine auto-injectors for severe allergic reactions.” The letter included a unique alphanumeric code to ensure each participant took the survey only once; the letters ‘Q’, ‘E’, and ‘A’ were used at the beginning of each code to differentiate patients who filled a prescription for Auvi-Q, EpiPen, or

Adrenaclick, respectively. Participants were allowed 5 weeks to complete the survey. Following survey completion, patients received \$25 gift cards to their local pharmacies and non-branded educational materials provided by Food Allergy Research & Education (FARE; <https://www.foodallergy.org/>) and the American Academy of Allergy, Asthma & Immunology (AAAAI; <https://www.aaaai.org>).

Eligible participants were  $\geq 7$  years of age at time of EAI prescription and were not required to have previous EAI experience. Individuals who participated in a previous study or market research related to an EAI were unable to participate in this study. Also excluded were patients who were not instructed to carry an EAI all the time (i.e., individuals prescribed an EAI for an allergy shot [immunotherapy] or other injection that may cause anaphylaxis).

### ***Survey design and objectives***

The survey comprised 37 stand-alone, multiple-choice questions, split into 5 categories: device carrying time (5 questions), confidence in using the device (6 questions), auto-injector training (6 questions), anaphylaxis history/clinical characteristics (12 questions), and demographics (8 questions). The approximately 20-minute survey was administered online, with backup via live-call center for patients who did not wish to or were unable to complete online. The survey was to be completed by patients themselves or, for those unable, a parent/guardian. Unless noted otherwise, parents/guardians were informed that survey questions with the words “you” and “your” refer to the person under their care. To avoid over enrollment, the online survey and call center became inactive once the targeted sample size (N=2000) was reached. Prior to study initiation, the RACE survey underwent pilot-testing (n=11) to ensure that the clarity of questions and instructions, as well as completion time, were appropriate. Survey modifications were made based upon pilot testing participant feedback.

The primary objective of this study was to compare the proportion of patients carrying their Auvi-Q device all the time during the last 7 days versus EpiPen or Adrenaclick. Carrying “all the time during the last 7 days” was defined as having the EAI within arm’s reach at all times during waking hours in the week prior to taking the survey; the device must have been easily accessible (e.g., not in a locker while at school or in the car while at work). To minimize recall bias, a fixed timeframe of 7 days was used in the device-carrying time section and other survey sections.

Secondary objectives of this study were to: compare EAI carrying time among patients who filled a prescription for Auvi-Q versus EpiPen or Adrenaclick; compare patient and parent/guardian confidence in correct EAI use; and assess patients’ experiences with training on EAI use. Confidence was assessed by how patients felt about using the device correctly during an anaphylactic emergency, as well as how confident they felt about someone else correctly giving them an injection. Questions on EAI training assessed whether patients received training, defined as a demonstration by a healthcare professional on how to use the device, and if the trainer provided with the dispensed EAI prescription was helpful.

### ***Statistical analyses and outcomes***

Univariate analyses were conducted to descriptively compare EAI groups overall and by children/adult subgroups (i.e., unadjusted data). Categorical variables were presented as the percentage of respondents in each category; significance was evaluated using Chi-square tests or Fisher’s exact tests. Continuous variables were summarized by mean, standard deviation (SD), and median; significance was evaluated using Kruskal-Wallis tests (unadjusted data shown in **Table E1**).

Multivariate regression analyses were conducted to control for the significant differences in demographic and clinical characteristics between the different EAI groups (i.e., adjusted data), and to determine factors affecting outcomes of interest. Binary logistic regression models for outcomes of interest (i.e., dependent variables) were generated for adults and children separately, as well as for all patients combined. Outcomes of interest were: device carrying time, confidence in using the device correctly, clarity of the EAI instructions, and receipt of EAI training. Independent variables for all regression models included: EAI device, age group, sex, education, insurance type, geographic region, household income, out of pocket cost, survey mode, survey respondent, allergy to food, allergy to medications, allergy to latex, first EAI prescription ever, prescriber of the EAI, number of anaphylaxis episodes experienced, concomitant use of steroids and antihistamines, and comorbid asthma; length of time with EAI was an additional independent variable for the regression models for device carrying time and confidence in using the device correctly. The model was tested for collinearity and goodness of fit using the Hosmer and Lemeshow Goodness-of-Fit test. Adjusted odds ratios (aOR), 95% confidence intervals (CI), and *P*-values were reported for all regression analyses.

Differences in the number of days patients carried their EAI was explored using a pseudo-binomial regression model. The dependent variable was the logit of the proportion of days the EAI was carried within 7 days; least-squares mean and 95% CI were reported.

For all analyses, a type 1 error probability ( $\alpha$ )  $< .05$  was considered the acceptable threshold for statistical significance.

### ***Sample size and data collection***

Due to the lack of effect-size data on which to base the sample-size calculation for the primary outcome, the difference that could be detected using a total sample size of 2000 was calculated; given  $N=2000$  ( $n=1000$  Auvi-Q;  $n=1000$  other EAI),  $\alpha=.05$ , and desired power of 80%, the study was able to detect an effect difference  $\geq 6.5\%$  between the proportion of Auvi-Q and other EAI patients who carry their device all the time. The target sample size also ensured adequate samples for subgroup analyses of children and adults; no specific targets were set for the number of children and adults as there was no evidence to expect aged-based differences for the EAI.

All completed surveys required a response for all questions; for some questions, patients were allowed to report “I don’t know/I can’t remember/I’d rather not say.” Additionally, nonsensical responses (such as a child reporting age at diagnosis  $>20$  years) were set to “missing” to allow for consistent data interpretation.

## RESULTS

### *Patient disposition and characteristics*

Of 25,623 mailed survey invitations, 2478 individuals (9.7%) responded (**Figure 1**). The final study population comprised 2000 patients (adults, n=1298; children, n=702), with half in the Auvi-Q group and half in the EpiPen group. None of the patients who completed the survey had been prescribed Adrenaclick. Among Auvi-Q respondents, 44.9% completed the survey themselves while 55.1% were completed by a parent/guardian; most EpiPen respondents (92.3%) completed the survey themselves (**Figure 1, Table I**). This difference may be due in part to the higher proportion of children in the Auvi-Q group versus EpiPen group (59.7% vs 10.5%). In addition to age, most demographic characteristics were significantly different between the two EAI groups ( $P<.001$ ); more Auvi-Q patients were male, full-time students, and had a high (>\$69,000) annual household income (**Table I**).

The Auvi-Q and EpiPen groups also differed significantly in terms of anaphylaxis history and clinical characteristics assessed ( $P<.05$ ; **Table II**). Most Auvi-Q patients had food allergies (76.8%) whereas more EpiPen patients reported allergies to insect sting (53.7%). Additionally, more Auvi-Q patients were younger at diagnosis and prescribed their current EAI by an allergist compared with the EpiPen group, who were mostly prescribed their current EAI by their primary care doctor (**Table II**). Across both EAI groups, most patients had experienced at least one anaphylaxis episode (Auvi-Q, 68.1%; EpiPen, 83.5%) but had never used an EAI (Auvi-Q, 76.4%; EpiPen, 63.2%). Many patients were concurrent users of antihistamines (Auvi-Q, 49.6%; EpiPen, 42.0%) and/or steroids (Auvi-Q, 30.9%; EpiPen, 24.6%). Among comorbidities evaluated, allergies and asthma were most common among Auvi-Q respondents, and allergies and other (unspecified) conditions were most common among EpiPen respondents (**Table II**).

Demographic and clinical characteristics stratified by children and adults are shown in **Tables E2 and E3**.

Given these significant differences in baseline demographic and clinical characteristics between the Auvi-Q and EpiPen populations, unless otherwise noted, results are based on multivariate regression analyses that statistically account for these differences (**Tables E4 to E17**).

### ***Carrying EAI all the time***

Half of all respondents (n=1004) reported that they carried their EAI all the time during the last 7 days. Auvi-Q respondents in the overall population were nearly two times more likely to carry their device all the time during the last 7 days compared with EpiPen patients (aOR, 1.91 [95% CI: 1.49, 2.45];  $P<.001$ ; **Figure 2**). Significant predictors of participants more likely to carry an EAI device were: being aged 47 to 56 or 57 to 64 years (vs 7 to 17 years), female, having food or latex allergies, having previously experienced an anaphylaxis episode (vs 0 episodes), and having comorbid asthma (aOR  $>1.2$  and  $P<.05$  for all; **Table E4**). Significant predictors of those less likely to carry an EAI device overall were having a college degree or advanced degree (vs elementary to some college and not reported) and having household income  $>\$69,000$  (vs  $<\$69,000$ ; aOR $<0.65$  and  $P<.01$  for both; **Table E4**).

When asked to rank 7 reasons (on a scale of 1 to 7) for why they did not carry their device with them, respondents in both EAI groups ranked “I don’t think I will be exposed to the allergen” as the top reason for not carrying the device (**Table III [unadjusted data]**). EpiPen participants identified “device size” as the next reason for not carrying their EAI, while “never had to use the device,” “forgot,” and “symptoms are not severe enough” followed for both EAI groups. Both

EAI groups considered “not confident in using it correctly” as the least relevant reason for not carrying an EAI.

When evaluating EAI carrying by subgroups, adult Auvi-Q respondents were nearly twice as likely to carry their EAI all the time compared with EpiPen respondents (aOR, 1.78 [95% CI: 1.33, 2.40];  $P < .001$ ), while the odds of children carrying the EAI all the time were more than 3 times higher in Auvi-Q versus EpiPen patients (aOR, 3.26 [95% CI: 1.88, 5.64];  $P < .001$ ; **Figure 2**). Most adults who did not carry their device all the time kept the EAI at home, and most children kept their EAI in the school nurse’s office and at home (**Table E18**).

### ***Carrying time***

On average, Auvi-Q patients carried their EAI for more days during the last 7 days compared with EpiPen patients (5.24 days vs 4.30 days;  $P < .001$ ; **Figure 3**). This 0.94 difference in days per week translates to an average of 49 days more carry-time per year. Similar results were seen in both adults and children (**Figure 3**), with a yearly carry-time increase averaging 33 days for adults and 93 days for children with Auvi-Q versus EpiPen.

### ***Confidence in use***

Compared with EpiPen, adults in the Auvi-Q group were more than twice as likely to feel “very confident” about correctly using their EAI on themselves (aOR, 2.02;  $P < .001$ ) and about someone else correctly using their EAI (aOR, 2.25;  $P < .001$ ; **Figure 4**). There were no significant differences between the Auvi-Q and EpiPen groups regarding parent/guardian responses for feeling “very confident” using the device on their children.

***Experiences with training***

Auvi-Q patients were 3 times more likely to feel that instructions provided with the EAI were “very clear” compared with EpiPen patients (aOR, 3.10;  $P<.001$ ); results were similar for adult and children subgroups (**Figure 5A**).

Compared with EpiPen, patients in the Auvi-Q group were also more likely to receive training by a healthcare professional and to find the trainer included in the prescription pack helpful ( $P<.01$  for both; **Figures 5B and 5C**).

## DISCUSSION

The increasing prevalence of anaphylaxis and related fatalities<sup>28,29</sup> necessitates immediate and ubiquitous access to epinephrine as first-line treatment. Patients at risk of anaphylaxis are advised to always carry their EAI.<sup>3,11</sup> Yet, an alarming number of patients do not carry an EAI, even individuals with a history of anaphylaxis.<sup>4,29</sup> This non-interventional study compared carrying times, confidence, and training experiences of 2000 adults, children, and parents/guardians who filled a prescription for Auvi-Q or EpiPen. To our knowledge, this is the first real-world survey comparing such outcomes between EAIs.

In this study, participants overall were nearly twice as likely to carry Auvi-Q all the time during the last 7 days compared with EpiPen ( $P<.001$ ). Similar results were observed in subgroup analyses of adults and children, with more pronounced differences between Auvi-Q and EpiPen in children. Although EAI carrying rates in this study were significantly higher among participants in the Auvi-Q group versus EpiPen group, only 50% of all respondents stated that they carried their EAI device all the time. A similar 44% carrying rate (“all the time”) was reported in another large survey,<sup>22</sup> and overall low EAI carrying rates have been reported in multiple studies, some as low as <10%.<sup>4,14-16,19-24</sup>

Lack of allergen exposure was the primary reason in this survey for why patients did not carry their EAI device all the time, though EpiPen respondents ranked device size as the next reason; however, these unadjusted data did not control for differences in demographic and clinical characteristics between groups. Large device size has also been noted in surveys of teenagers and adults as a main reason for not carrying their EAI.<sup>16-18</sup> In this RACE study, older age, female sex, having food or latex allergies, having previously experienced anaphylaxis, and having comorbid asthma were significant predictors of those who were more likely to carry an auto-injector

device. Some of these predictors have been identified in other survey studies in which higher rates of EAI carrying were reported among females and those who received prior EAI treatment.<sup>14, 17, 22</sup>

Consistent use of EAIs remains a challenge for many patients. While timely treatment with epinephrine has been shown to improve patient outcomes and reduce hospitalizations following anaphylaxis, many patients do not use their EAI, even when it is available.<sup>4, 26</sup> For example, one study found that epinephrine was not administered, even when available, in approximately one third of food-related anaphylaxis episodes<sup>30</sup>; a separate study found that while EAI was available in 79% of anaphylaxis cases, it was only used in 38% of cases when available.<sup>31</sup> While barriers to EAI use are complex and multifaceted, inadequate training and lack of knowledge regarding EAI administration have been cited as potential reasons patients do not use an EAI.<sup>4, 32</sup>

Compared with EpiPen, adult Auvi-Q patients in this study were more than twice as likely to feel “very confident” about correctly using their EAI and about someone else correctly using their EAI ( $P<.001$  for both). This confidence in use may be related to the finding that more Auvi-Q users than EpiPen users were trained by a healthcare provider and were more likely to find instructions very clear and helpful ( $P<.01$  for all); although healthcare providers differed between the 2 groups (e.g., more allergists prescribed Auvi-Q and more primary care doctors prescribed EpiPen), multivariate regression analyses in this study controlled for prescriber of the EAI. The increased confidence in use may also be a result of the design of the Auvi-Q device. Although the current survey did not evaluate use of EAIs, a randomized device-switch study found that participants who switched to Auvi-Q had the highest rate of successful adrenaline administration (93%) compared with 3 other EAI devices (49% [Anapen<sup>®</sup>/EpiPen, new EpiPen, or JEXT<sup>®</sup>];  $P<.001$ ), regardless of the device on which they had been previously trained

(Anapen or EpiPen).<sup>33</sup> The authors concluded that EAI device design, and not only training, is critical for effective epinephrine delivery during emergency anaphylaxis.

Though multivariate analyses found no statistical difference in confidence of EAI use between parents/guardians of children in the Auvi-Q or EpiPen groups, this may be related to increased stress and anxiety generally felt by parents of children with allergies,<sup>34</sup> as well as an overall discomfort among parents when using an EAI on their child.<sup>35</sup> This underscores the importance of training parents/guardians as well as patients on proper EAI use, as a previous study demonstrated that parents satisfied with EAI training or who found the device easy to use were less afraid of using an EAI on their child.<sup>35</sup>

Though study designs differed, real-world data from this survey support preference data from a randomized, simulated-use study of nearly 700 participants (including adults, caregivers, and children) where Auvi-Q was preferred over EpiPen for all study endpoints, including preference to carry, ease in carrying, device size, device shape, method of instruction, ease in following instructions, ease of use, and overall preference to use ( $P < .05$  for all).<sup>27</sup>

Limitations of this study are inherent to survey designs and their interpretation. As a non-interventional survey conducted among real-world patients, there is a lack of control over demographics and clinical characteristics of the individuals who chose to participate. Thus, a multivariate regression analysis was used to control for baseline characteristics that were significantly different between the Auvi-Q and EpiPen groups; these analyses are dependent upon the accuracy of such models and assumptions. Further, causality cannot be established by multivariate analyses. For example, the survey found that significant predictors of being less likely to carry an EAI device were having a college/advanced degree or having household

income >\$69,000. Although this study cannot establish the reasons for this finding, separate surveys have noted that some individuals rely on emergency services for anaphylaxis treatment, particularly in urban or non-rural areas.<sup>17, 18</sup> Another common concern with surveys is recall bias, which can threaten the validity of self-reported data due to participant difficulty in accurately recalling past events. As such, the fixed timeframe of 7 days was used in this survey to minimize recall bias. However, given that significantly more parents/guardians in the Auvi-Q group answered survey questions on behalf of their child versus the EpiPen group, the possibility of caregiver's over- or under-estimation of how often children are carrying may impact these results. Responder bias may also limit generalizability of the findings, as just under 10% of all individuals contacted participated in the survey. Further, the study population was from a convenience sample—i.e., individuals who filled their EAI prescription from a single pharmacy chain with locations in over 30 states in the US—and therefore may not be nationally representative. This survey did not include individuals with primary nonadherence (i.e., not filling an EAI prescription) and the reasons patients did or did not fill their EAI prescription are out of scope of the present survey. However, we recognize that having these data might provide insight into the management of anaphylaxis and lack of these data imparts a natural bias of the surveyed population and the results presented here.

## CONCLUSIONS

Compared with EpiPen, patients who filled a prescription for Auvi-Q had significantly better compliance carrying their EAI all the time, were more likely to rate instructions provided with the EAI device as very clear and helpful, and among adult respondents, had a higher level of confidence in being able to use the device correctly (or in others using it correctly). Understanding the considerations for carrying an EAI—which may influence patient behavior

363 and carrying compliance—could help improve the likelihood of a patient having his/her EAI  
364 available in case of a life-threatening allergic emergency.

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**FIGURE LEGENDS****Figure 1. Respondent Disposition**

<sup>a</sup>Reminder letters were also mailed to Auvi-Q patients (n=5128) to help achieve recruitment goal.

<sup>b</sup>To avoid over-enrollment, the online survey and call center became inactive once the targeted sample size (N=1000) was reached.

**Figure 2. Likelihood of Patients Carrying Auvi-Q All the Time During the Last 7 Days vs EpiPen**

N value for children (n=697) does not match the total population of children in the study (n=702) due to the exclusion from the model of 5 children with missing age-group data.

See Tables E4-E6 for results on all model parameters.

aOR; adjusted odds ratio; CI, confidence interval; EAI, epinephrine auto-injector.

**Figure 3. Number of Days the EAI was Carried in the Previous 7 Days**

N value for children (n=697) does not match the total population of children in the study (n=702) due to the exclusion of 5 children with missing age-group data.

EAI, epinephrine auto-injector; CI, confidence interval; LS, least squares.

**Figure 4. Confidence in Using Auvi-Q vs EpiPen Correctly: “Very Confident”**

<sup>a</sup>Responses shown for parent/guardian confidence about correctly using the EAI on their child.

See Tables E7-E9 for results on all model parameters.

aOR; adjusted odds ratio; CI, confidence interval; EAI, epinephrine auto-injector.

**Figure 5. Clarity of Instructions and Training for Auvi-Q vs EpiPen**

<sup>a</sup>Model for *finding trainer helpful on EAI use* could not be fit due to the extremely low number of “No” responses in children.

N value for children (n=697) does not match the total population of children in the study (n=702) due to the exclusion from the model of 5 children with missing age-group data.

See Tables E10-E17 for results on all model parameters.

aOR; adjusted odds ratio; CI, confidence interval; EAI, epinephrine auto-injector.

**Table I. Demographic Characteristics**

|                                 | <b>Auvi-Q<br/>(N=1000)</b> | <b>EpiPen<br/>(N=1000)</b> | <b>P-value</b>  |
|---------------------------------|----------------------------|----------------------------|-----------------|
| <b>Age group, y, %</b>          |                            |                            | <b>&lt;.001</b> |
| 7-17                            | 59.7                       | 10.5                       |                 |
| 18-26                           | 8.7                        | 14.6                       |                 |
| 27-36                           | 6.8                        | 11.9                       |                 |
| 37-46                           | 7.7                        | 14.2                       |                 |
| 47-56                           | 8.4                        | 21.1                       |                 |
| 57-64                           | 6.2                        | 15.7                       |                 |
| >65                             | 2.5                        | 12.0                       |                 |
| <b>Sex, %</b>                   |                            |                            | <b>&lt;.001</b> |
| Male                            | 49.5                       | 31.0                       |                 |
| <b>Work status, %</b>           |                            |                            | <b>&lt;.001</b> |
| Full-time student               | 65.3                       | 18.6                       |                 |
| Part-time employee              | 4.1                        | 9.9                        |                 |
| Full-time employee              | 21.6                       | 36.4                       |                 |
| Unemployed                      | 4.0                        | 13.9                       |                 |
| Retired                         | 5.0                        | 21.2                       |                 |
| <b>Education, %<sup>a</sup></b> |                            |                            | <b>&lt;.001</b> |
| Elementary School               | 29.5                       | 5.0                        |                 |
| Middle School                   | 18.4                       | 4.2                        |                 |
| High School                     | 16.6                       | 21.9                       |                 |
| Some College                    | 10.5                       | 23.0                       |                 |
| Associate's degree              | 3.7                        | 10.3                       |                 |
| Bachelor's degree               | 11.6                       | 20.3                       |                 |

|                                               | <b>Auvi-Q<br/>(N=1000)</b> | <b>EpiPen<br/>(N=1000)</b> | <b>P-value</b>  |
|-----------------------------------------------|----------------------------|----------------------------|-----------------|
| Master's degree                               | 7.2                        | 11.2                       |                 |
| Doctorate/Professional degree                 | 2.4                        | 4.2                        |                 |
| <b>Insurance type, %</b>                      |                            |                            | <b>&lt;.001</b> |
| Uninsured / self-pay                          | 0.9                        | 2.1                        |                 |
| HMO                                           | 19.2                       | 17.8                       |                 |
| PPO                                           | 62.3                       | 38.1                       |                 |
| POS                                           | 5.1                        | 5.1                        |                 |
| Medicaid                                      | 3.1                        | 15.8                       |                 |
| Medicare                                      | 4.1                        | 11.8                       |                 |
| Other                                         | 5.3                        | 9.3                        |                 |
| <b>Geographic region, %</b>                   |                            |                            | <b>.31</b>      |
| Northeast                                     | 56.8                       | 57.4                       |                 |
| Midwest                                       | 14.1                       | 11.5                       |                 |
| South                                         | 21.7                       | 23.7                       |                 |
| West                                          | 7.4                        | 7.4                        |                 |
| <b>Annual household income, %<sup>b</sup></b> |                            |                            | <b>&lt;.001</b> |
| <\$45,000                                     | 13.1                       | 39.5                       |                 |
| \$45,000 to <\$50,000                         | 4.4                        | 7.2                        |                 |
| \$50,000 to <\$60,000                         | 4.8                        | 7.4                        |                 |
| \$60,000 to <\$69,000                         | 6.4                        | 7.1                        |                 |
| >\$69,000                                     | 71.3                       | 38.8                       |                 |
| <b>Out of pocket costs, %<sup>c</sup></b>     |                            |                            | <b>.73</b>      |
| <\$20                                         | 48.5                       | 51.7                       |                 |
| \$20 to <\$50                                 | 30.3                       | 28.5                       |                 |

|                            | <b>Auvi-Q<br/>(N=1000)</b> | <b>EpiPen<br/>(N=1000)</b> | <b>P-value</b>  |
|----------------------------|----------------------------|----------------------------|-----------------|
| \$50 to <\$75              | 9.1                        | 8.3                        |                 |
| \$75 to <\$100             | 4.3                        | 3.7                        |                 |
| >\$100                     | 7.8                        | 7.7                        |                 |
| <b>Survey mode, %</b>      |                            |                            | <b>&lt;.001</b> |
| Through the call center    | 4.3                        | 17.7                       |                 |
| Through the website        | 95.7                       | 82.3                       |                 |
| <b>Survey respondent %</b> |                            |                            | <b>&lt;.001</b> |
| Patient                    | 44.9                       | 92.3                       |                 |
| Parent / guardian          | 55.1                       | 7.7                        |                 |

*P*-values indicate differences between the Auvi-Q and EpiPen groups for each categorical variable (i.e., count and percentage of respondents in each category).

<sup>a</sup> "Not reported" (Auvi-Q, n=18; EpiPen, n=14) were not included in percentage calculation.

<sup>b</sup> "Not reported" (Auvi-Q, n=251; EpiPen, n=194) were not included in percentage calculation.

<sup>c</sup> "Not reported" (Auvi-Q, n=132; EpiPen, n=113) were not included in percentage calculation.

**Table II. Participant Anaphylaxis History and Clinical Characteristics**

|                                                                   | <b>Auvi-Q<br/>(N=1000)</b> | <b>EpiPen<br/>(N=1000)</b> | <b>P-value</b>  |
|-------------------------------------------------------------------|----------------------------|----------------------------|-----------------|
| <b>Age at initial diagnosis, y, %<sup>a</sup></b>                 |                            |                            | <b>&lt;.001</b> |
| 0 to 5                                                            | 49.6                       | 14.4                       |                 |
| 6 to 10                                                           | 12.4                       | 8.8                        |                 |
| 11 to 15                                                          | 7.9                        | 7.9                        |                 |
| 16 to 20                                                          | 5.1                        | 12.0                       |                 |
| >20                                                               | 25.0                       | 56.9                       |                 |
| <b>Type of allergen, %</b>                                        |                            |                            |                 |
| Food                                                              | 76.8                       | 45.5                       | <.001           |
| Insect sting                                                      | 20.4                       | 53.7                       | <.001           |
| Medications                                                       | 15.7                       | 27.5                       | <.001           |
| Latex                                                             | 5.6                        | 9.5                        | .001            |
| Other                                                             | 14.9                       | 21.9                       | <.001           |
| Don't know                                                        | 2.6                        | 4.4                        | .03             |
| <b>First EAI prescription, %</b>                                  |                            |                            | <b>&lt;.001</b> |
| Yes                                                               | 29.0                       | 41.8                       |                 |
| No                                                                | 71.0                       | 58.2                       |                 |
| If no, is this the same EAI that was<br>prescribed the last time? |                            |                            | <b>&lt;.001</b> |
| Yes                                                               | 15.5                       | 88.1                       |                 |
| No                                                                | 84.5                       | 11.9                       |                 |
| <b>Prescriber of current EAI, %</b>                               |                            |                            | <b>&lt;.001</b> |
| Allergist                                                         | 71.1                       | 29.8                       |                 |
| Pediatrician                                                      | 13.3                       | 4.4                        |                 |

|                                                               | <b>Auvi-Q<br/>(N=1000)</b> | <b>EpiPen<br/>(N=1000)</b> | <b>P-value</b>  |
|---------------------------------------------------------------|----------------------------|----------------------------|-----------------|
| Primary care doctor                                           | 12.6                       | 53.8                       |                 |
| ER doctor                                                     | 1.6                        | 9.4                        |                 |
| Other                                                         | 1.4                        | 2.6                        |                 |
| <b>Use of EAI ever, %</b>                                     |                            |                            | <b>&lt;.001</b> |
| 0                                                             | 76.4                       | 63.2                       |                 |
| 1                                                             | 11.0                       | 12.2                       |                 |
| 2 to 4                                                        | 9.5                        | 16.7                       |                 |
| 5                                                             | 2.6                        | 7.3                        |                 |
| Don't remember                                                | 0.5                        | 0.6                        |                 |
| <b>Number of anaphylaxis episodes experienced, %</b>          |                            |                            | <b>&lt;.001</b> |
| 0                                                             | 31.9                       | 16.5                       |                 |
| 1                                                             | 30.1                       | 27.1                       |                 |
| 2 to 5                                                        | 28.9                       | 41.1                       |                 |
| >5                                                            | 7.3                        | 14.0                       |                 |
| Don't remember                                                | 1.8                        | 1.3                        |                 |
| <b>Number of anaphylaxis-related emergency room visits, %</b> |                            |                            | <b>&lt;.001</b> |
| 0                                                             | 46.7                       | 28.8                       |                 |
| 1                                                             | 28.0                       | 31.2                       |                 |
| 2 to 5                                                        | 21.2                       | 31.0                       |                 |
| >5                                                            | 3.6                        | 7.9                        |                 |
| Don't remember                                                | 0.5                        | 1.1                        |                 |
| <b>Anaphylaxis-related inpatient</b>                          |                            |                            | <b>&lt;.001</b> |

|                                                       | <b>Auvi-Q<br/>(N=1000)</b> | <b>EpiPen<br/>(N=1000)</b> | <b>P-value</b> |
|-------------------------------------------------------|----------------------------|----------------------------|----------------|
| <b>admissions, %</b>                                  |                            |                            |                |
| 0                                                     | 83.3                       | 75.9                       |                |
| 1                                                     | 11.0                       | 15.2                       |                |
| 2 to 5                                                | 4.7                        | 6.4                        |                |
| >5                                                    | 0.6                        | 1.4                        |                |
| Don't remember                                        | 0.4                        | 1.1                        |                |
| <b>Anaphylaxis-related physician office visits, %</b> |                            |                            | <b>.01</b>     |
| 0                                                     | 41.1                       | 35.3                       |                |
| 1                                                     | 30.3                       | 29.0                       |                |
| 2 to 5                                                | 21.8                       | 27.0                       |                |
| >5                                                    | 5.4                        | 7.3                        |                |
| Don't remember                                        | 1.4                        | 1.4                        |                |
| <b>Concomitant medication, %</b>                      |                            |                            |                |
| None                                                  | 27.7                       | 19.3                       | <.001          |
| Antihistamines                                        | 49.6                       | 42.0                       | <.001          |
| Steroids                                              | 30.9                       | 24.6                       | .002           |
| ACE inhibitors                                        | 2.2                        | 15.1                       | <.001          |
| Beta blockers                                         | 2.1                        | 7.8                        | <.001          |
| Other                                                 | 27.3                       | 47.0                       | <.001          |

|                                      | <b>Auvi-Q<br/>(N=1000)</b> | <b>EpiPen<br/>(N=1000)</b> | <b>P-value</b> |
|--------------------------------------|----------------------------|----------------------------|----------------|
| <b>Other medical conditions, %</b>   |                            |                            |                |
| None                                 | 22.6                       | 15.6                       | <.001          |
| Allergies                            | 64.0                       | 58.9                       | .02            |
| Asthma                               | 37.7                       | 31.7                       | .005           |
| High blood pressure                  | 6.0                        | 25.6                       | <.001          |
| Diabetes                             | 1.6                        | 8.2                        | <.001          |
| COPD                                 | 1.4                        | 6.3                        | <.001          |
| Heart disease                        | 0.6                        | 5.6                        | <.001          |
| Cancer                               | 1.5                        | 4.6                        | <.001          |
| Other                                | 17.2                       | 37.6                       | <.001          |
| <b>Length of time with device, %</b> |                            |                            | <b>.003</b>    |
| ≤3 months                            | 3.1                        | 4.6                        |                |
| >3 to ≤6 months                      | 40.5                       | 34.5                       |                |
| >6 to ≤9 months                      | 40.9                       | 46.6                       |                |
| >9 to ≤12 months                     | 13.6                       | 11.3                       |                |
| >12 months                           | 1.9                        | 3.0                        |                |

Unless noted otherwise, *P*-values indicate differences between the Auvi-Q and EpiPen groups for each categorical variable (i.e., count and percentage of respondents in each category).

<sup>a</sup> "Not reported/Missing" (Auvi-Q, n=7; EpiPen, n=13) were not included in percentage calculation.

ACE, angiotensin-converting enzyme; COPD, chronic obstructive pulmonary disease; EAI, epinephrine auto-injector.

**Table III: Rankings of Reasons for Not Carrying an EAI (Unadjusted Data)**

|                                                                                                       | <b>Auvi-Q<br/>(N=1000)</b> |               | <b>EpiPen<br/>(N=1000)</b> |               |
|-------------------------------------------------------------------------------------------------------|----------------------------|---------------|----------------------------|---------------|
|                                                                                                       | <b>Mean</b>                | <b>Median</b> | <b>Mean</b>                | <b>Median</b> |
| I don't think I will be exposed to the allergen that will cause me to have a severe allergic reaction | 2.9                        | 2             | 3.1                        | 3             |
| I have never had to use it, so I don't see a need to carry it all the time                            | 3.3                        | 3             | 3.8                        | 4             |
| I forget to carry it with me                                                                          | 3.3                        | 3             | 3.8                        | 4             |
| I don't think my symptoms are severe enough to carry the device all the time                          | 3.6                        | 3             | 3.9                        | 4             |
| The size of the device makes it difficult to carry                                                    | 4.7                        | 5             | 3.7                        | 3             |
| The shape of the device makes it difficult to carry                                                   | 4.9                        | 5             | 4.3                        | 4             |
| I am not confident with using it correctly                                                            | 5.4                        | 6             | 5.4                        | 6             |

**Survey question:** Using a scale of 1 through 7, please rank the reasons you do not carry your epinephrine auto-injector with you, with 1 being the top reason and 7 being the least relevant reason?

**Auvi-Q****EpiPen**

Survey invitations mailed<sup>a</sup>  
N=9991

Survey invitations mailed  
N=15,632

Patients responding to  
invitation letter  
N=1219 (12.2%)

Patients responding to  
invitation letter  
N=1259 (8.1%)

**Attrition, n=211**

- Patient/guardian has not provided consent, n=151
- Patient not  $\geq 7$  y or age missing, n=60

Inactivation,<sup>b</sup> n=8

**Attrition, n=251**

- Patient/guardian has not provided consent, n=183
- EAI prescription precludes patient carrying the device at all times, n=1
- Patient not  $\geq 7$  y or age missing, n=67

Inactivation,<sup>b</sup> n=8

**Final cohort  
N=1000**

Children, n=597

- Patient: 60 (10.1%)
- Parent/guardian: 537 (89.9%)

Adults, n=403

- Patient: 389 (96.5%)
- Parent/guardian: 14 (3.5%)

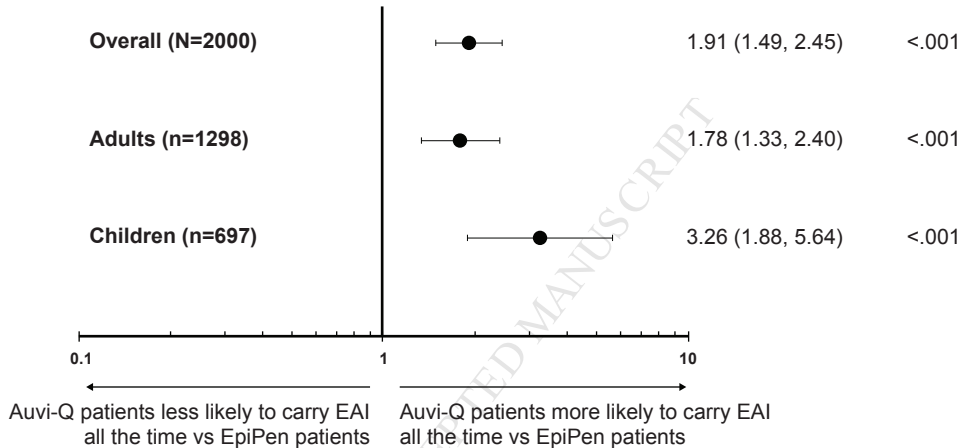
**Final cohort  
N=1000**

Children, n=105

- Patient: 31 (29.5%)
- Parent/guardian: 74 (70.5%)

Adults, n=895

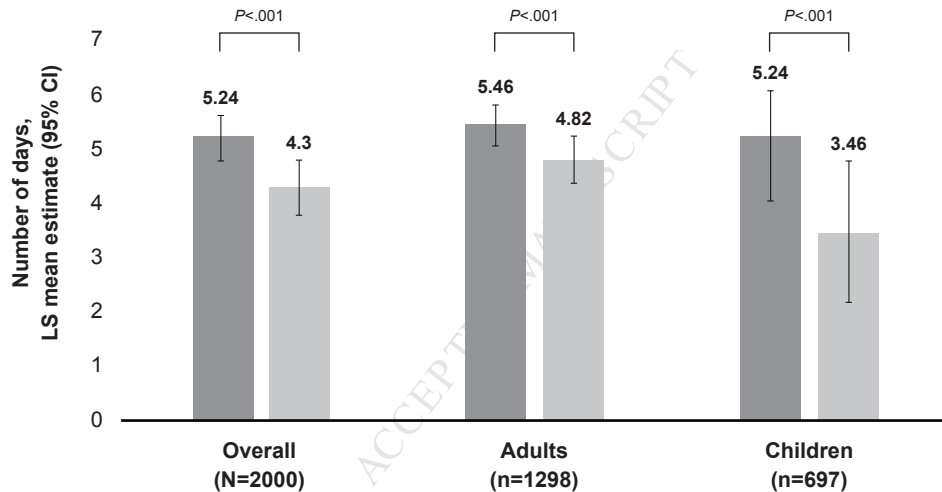
- Patient: 892 (99.7%)
- Parent/guardian: 3 (0.3%)



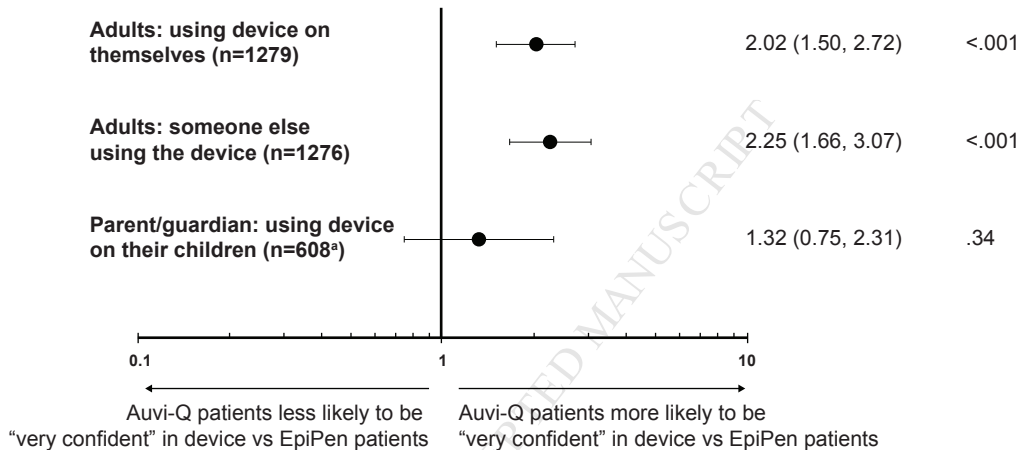
**Survey question:** *During the last 7 days, how many days did you carry\* your epinephrine auto-injector device with you all the time when you were awake?*

**Answer options:** 0, 1, 2, 3, 4, 5, 6, or 7 days.

*\*Carrying the epinephrine auto-injector is defined as having the epinephrine auto-injector with you all the time when you are awake within arm's reach. (This does not include having it in the locker at school or in the car while at work. The device must be easily accessible). If you are the parent/guardian, the words "you" and "your" refer to the person under your care that is being at risk for severe allergic reaction.*



Survey question was the same as that shown in Figure 2.

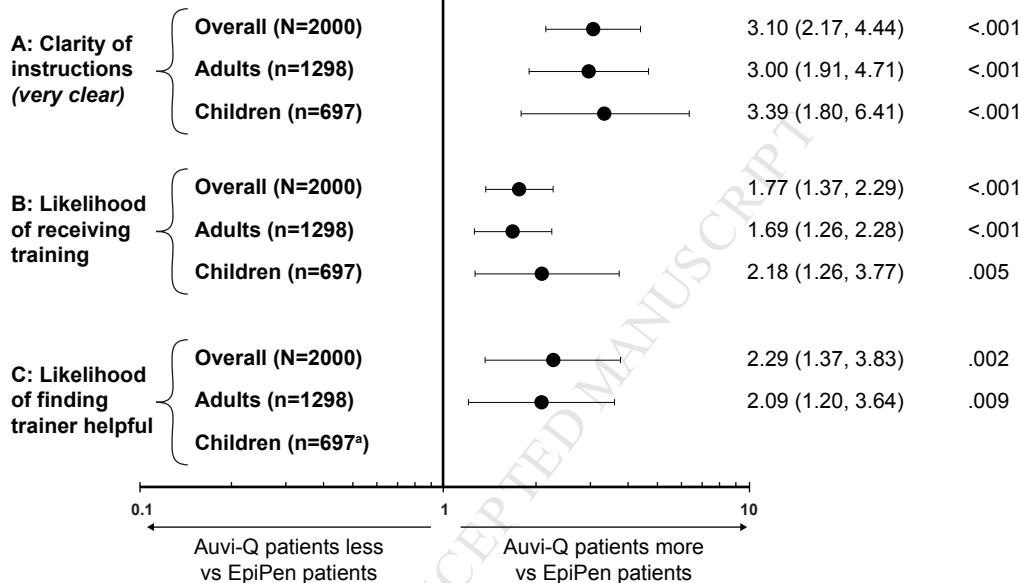


**Survey question (adults on themselves):** *If you were to have a severe allergic reaction, how confident are you about correctly using your epinephrine auto-injector yourself, assuming that you were well enough to do so?*

**Survey question (adults on others using the device):** *If you were to have a severe allergic reaction, how confident do you feel about someone else correctly giving you an epinephrine injection with your epinephrine auto-injector?*

**Survey question (parent/guardian):** *If your child was to have a severe allergic reaction, how confident are you about correctly using the epinephrine auto-injector on your child?*

**Answer options:** Very confident; Fairly confident; Not very confident; Not at all confident.



**Survey question (A):** How clear are the instructions for use that are provided with your epinephrine auto-injector?

**Answer options:** Very clear; Fairly clear; Not very clear; Not at all clear.

**Survey question (B):** Did you receive any training on how to use the epinephrine auto-injector?

**Answer options:** Yes; No.

**Survey question (C):** Do you find the trainer included in the prescription pack helpful for preparing you to use the epinephrine auto-injector in case of a severe allergic reaction?

**Answer options:** Yes; No.

## Supplementary Materials

Table E1. Survey Outcomes (Unadjusted Data)

|                                                                 | Children Patients |                   |          | Adult Patients    |                   |          | Overall            |                    |          |
|-----------------------------------------------------------------|-------------------|-------------------|----------|-------------------|-------------------|----------|--------------------|--------------------|----------|
|                                                                 | Auvi-Q<br>(n=597) | EpiPen<br>(n=105) | <i>P</i> | Auvi-Q<br>(n=403) | EpiPen<br>(n=895) | <i>P</i> | Auvi-Q<br>(N=1000) | EpiPen<br>(N=1000) | <i>P</i> |
| <b>DEVICE CARRYING TIME</b>                                     |                   |                   |          |                   |                   |          |                    |                    |          |
| <b>Carrying device all the time, %</b>                          |                   |                   | .005     |                   |                   | .48      |                    |                    | .65      |
| 0-6 days                                                        | 53.9              | 68.6              |          | 44.9              | 47.0              |          | 50.3               | 49.3               |          |
| 7 days                                                          | 46.1              | 31.4              |          | 55.1              | 53.0              |          | 49.7               | 50.7               |          |
| <b>Carrying time, mean (SD), days</b>                           | 4.5 (2.8)         | 3.5 (3.0)         | <.001    | 5.1 (2.7)         | 4.9 (2.8)         | .22      | 4.7 (2.8)          | 4.7 (2.8)          | .98      |
| <b>CONFIDENCE IN USING DEVICE</b>                               |                   |                   |          |                   |                   |          |                    |                    |          |
| <b>Patients using the EAI themselves, %<sup>a</sup></b>         | n=60              | n=31              | .69      | n=389             | n=892             | .006     | n=449              | n=923              | .01      |
| Very confident                                                  | 59.3              | 51.6              |          | 70.4              | 62.7              |          | 69.0               | 62.3               |          |
| Fairly confident                                                | 35.6              | 45.2              |          | 28.0              | 32.2              |          | 29.0               | 32.7               |          |
| Not very confident                                              | 5.1               | 3.2               |          | 1.3               | 3.7               |          | 1.8                | 3.7                |          |
| Not at all confident                                            | 0                 | 0                 |          | 0.3               | 1.3               |          | 0.2                | 1.3                |          |
| <b>Someone else using the EAI on the patient, %<sup>a</sup></b> | n=60              | n=31              | .36      | n=389             | n=892             | <.001    | n=449              | n=923              | <.001    |
| Very confident                                                  | 18.6              | 22.6              |          | 35.8              | 31.0              |          | 33.6               | 30.7               |          |
| Fairly confident                                                | 61.0              | 45.2              |          | 49.5              | 44.6              |          | 51.0               | 44.6               |          |
| Not very confident                                              | 18.6              | 25.8              |          | 11.1              | 20.8              |          | 12.1               | 21.0               |          |
| Not at all confident                                            | 1.7               | 6.5               |          | 3.6               | 3.6               |          | 3.4                | 3.7                |          |
| <b>Parents using the EAI on their children, %<sup>a</sup></b>   | n=537             | n=74              | .002     | n=14              | n=3               | 1.00     | n=551              | n=77               | .003     |
| Very confident                                                  | 67.1              | 64.9              |          | 71.4              | 100               |          | 67.2               | 65.8               |          |
| Fairly confident                                                | 30.8              | 25.7              |          | 21.4              | 0                 |          | 30.6               | 25.0               |          |
| Not very confident                                              | 2.1               | 9.5               |          | 7.1               | 0                 |          | 2.2                | 9.2                |          |
| Not at all confident                                            | 0                 | 0                 |          | 0                 | 0                 |          | 0                  | 0                  |          |

|                                        | Children Patients |                   |          | Adult Patients    |                   |          | Overall            |                    |          |
|----------------------------------------|-------------------|-------------------|----------|-------------------|-------------------|----------|--------------------|--------------------|----------|
|                                        | Auvi-Q<br>(n=597) | EpiPen<br>(n=105) | <i>P</i> | Auvi-Q<br>(n=403) | EpiPen<br>(n=895) | <i>P</i> | Auvi-Q<br>(N=1000) | EpiPen<br>(N=1000) | <i>P</i> |
| <b>DEVICE TRAINING</b>                 |                   |                   |          |                   |                   |          |                    |                    |          |
| <b>Clarity of instructions, %</b>      |                   |                   | .002     |                   |                   | <.001    |                    |                    | <.001    |
| Very clear                             | 89.3              | 77.1              |          | 92.6              | 83.6              |          | 90.6               | 82.9               |          |
| Fairly clear                           | 10.6              | 22.9              |          | 7.2               | 15.5              |          | 9.2                | 16.3               |          |
| Not very clear                         | 0.2               | 0                 |          | 0.2               | 0.9               |          | 0.2                | 0.8                |          |
| Not at all clear                       | 0                 | 0                 |          | 0                 | 0                 |          | 0                  | 0                  |          |
| <b>Received training in EAI use, %</b> |                   |                   | .003     |                   |                   | <.001    |                    |                    | <.001    |
| Yes                                    | 79.9              | 66.7              |          | 74.7              | 56.6              |          | 77.8               | 57.7               |          |
| No                                     | 20.1              | 33.3              |          | 25.3              | 43.4              |          | 22.2               | 42.3               |          |
| <b>Found trainer useful, %</b>         |                   |                   | .03      |                   |                   | .02      |                    |                    | <.001    |
| Yes                                    | 98.2              | 94.3              |          | 95.0              | 91.3              |          | 96.9               | 91.6               |          |
| No                                     | 1.8               | 5.7               |          | 5.0               | 8.7               |          | 3.1                | 8.4                |          |

<sup>a</sup> "Missing" and "Not applicable" were not included in the percentage calculation.

*P*-values indicate differences between the Auvi-Q and EpiPen groups for each measure.

EAI, epinephrine auto-injector; SD, standard deviation.

**Table E2. Demographic Characteristics of the Auvi-Q and EpiPen Patients**

|                                 | Children Patients <sup>a</sup> |                   |          | Adult Patients <sup>a</sup> |                   |          | Overall             |                    |
|---------------------------------|--------------------------------|-------------------|----------|-----------------------------|-------------------|----------|---------------------|--------------------|
|                                 | Auvi-Q<br>(n=597)              | EpiPen<br>(n=105) | <i>P</i> | Auvi-Q<br>(n=403)           | EpiPen<br>(n=895) | <i>P</i> | Children<br>(N=702) | Adults<br>(N=1298) |
| <b>Age Group, years, %</b>      |                                |                   | *        |                             |                   | <.001    |                     |                    |
| 7 to 17 <sup>b</sup>            | 100                            | 100               |          | 0                           | 0                 |          | 100                 | 0                  |
| 18 to 26                        | 0                              | 0                 |          | 21.6                        | 16.3              |          | 0                   | 18.0               |
| 27 to 36                        | 0                              | 0                 |          | 16.9                        | 13.3              |          | 0                   | 14.4               |
| 37 to 46                        | 0                              | 0                 |          | 19.1                        | 15.9              |          | 0                   | 16.9               |
| 47 to 56                        | 0                              | 0                 |          | 20.8                        | 23.6              |          | 0                   | 22.7               |
| 57 to 64                        | 0                              | 0                 |          | 15.4                        | 17.5              |          | 0                   | 16.9               |
| > 65                            | 0                              | 0                 |          | 6.2                         | 13.4              |          | 0                   | 11.2               |
| <b>Sex, %</b>                   |                                |                   | .21      |                             |                   | .01      |                     |                    |
| Male                            | 60.1                           | 66.7              |          | 33.7                        | 26.8              |          | 61.1                | 29.0               |
| <b>Work status, %</b>           |                                |                   | .68      |                             |                   | <.001    |                     |                    |
| Full-time student               | 99.0                           | 99.0              |          | 15.4                        | 9.2               |          | 99.0                | 11.1               |
| Part-time employee              | 0.2                            | 0                 |          | 9.9                         | 11.1              |          | 0.1                 | 10.7               |
| Full-time employee              | 0.2                            | 0                 |          | 53.3                        | 40.7              |          | 0.1                 | 44.6               |
| Unemployed                      | 0.7                            | 1.0               |          | 8.9                         | 15.4              |          | 0.7                 | 13.4               |
| Retired                         | 0                              | 0                 |          | 12.4                        | 23.7              |          | 0                   | 20.2               |
| <b>Education, %<sup>c</sup></b> |                                |                   | .88      |                             |                   | *        |                     |                    |
| Elementary School               | 49.1                           | 46.6              |          | 0                           | 0.1               |          | 48.1                | 0.1                |
| Middle School                   | 30.3                           | 34.0              |          | 0.5                         | 0.7               |          | 30.5                | 0.6                |
| High School                     | 20.0                           | 19.4              |          | 11.4                        | 22.2              |          | 19.7                | 18.6               |
| Some College                    | 0.2                            | 0                 |          | 25.9                        | 25.7              |          | 0.1                 | 25.3               |
| Associate's degree              | 0                              | 0                 |          | 9.1                         | 11.6              |          | 0                   | 10.6               |
| Bachelor's degree               | 0                              | 0                 |          | 28.9                        | 22.7              |          | 0                   | 24.2               |
| Master's degree                 | 0                              | 0                 |          | 18.0                        | 12.5              |          | 0                   | 13.9               |
| Doctorate / Professional degree | 0                              | 0                 |          | 6.1                         | 4.6               |          | 0                   | 5.0                |
| Not reported                    |                                |                   |          |                             |                   |          | 1.6                 | 1.6                |
| <b>Insurance type, %</b>        |                                |                   | <.001    |                             |                   | <.001    |                     |                    |
| Uninsured / self-pay            | 0.5                            | 0                 |          | 1.5                         | 2.3               |          | 0.4                 | 2.1                |
| HMO                             | 19.4                           | 21.0              |          | 18.9                        | 17.4              |          | 19.7                | 17.9               |
| PPO                             | 64.8                           | 45.7              |          | 58.6                        | 37.2              |          | 62.0                | 43.8               |
| POS                             | 5.5                            | 4.8               |          | 4.5                         | 5.1               |          | 5.4                 | 4.9                |
| Medicaid                        | 0.7                            | 1.9               |          | 6.7                         | 17.4              |          | 0.9                 | 14.1               |
| Medicare                        | 4.0                            | 16.2              |          | 4.2                         | 11.3              |          | 5.8                 | 9.1                |
| Other                           | 5.0                            | 10.5              |          | 5.7                         | 9.2               |          | 5.8                 | 8.1                |

|                                   | Children Patients <sup>a</sup> |                   |          | Adult Patients <sup>a</sup> |                   |          | Overall             |                    |
|-----------------------------------|--------------------------------|-------------------|----------|-----------------------------|-------------------|----------|---------------------|--------------------|
|                                   | Auvi-Q<br>(n=597)              | EpiPen<br>(n=105) | <i>P</i> | Auvi-Q<br>(n=403)           | EpiPen<br>(n=895) | <i>P</i> | Children<br>(N=702) | Adults<br>(N=1298) |
| <b>Geographic region, %</b>       |                                |                   | .45      |                             |                   | .83      |                     |                    |
| Northeast                         | 56.6                           | 62.9              |          | 57.1                        | 56.8              |          | 57.5                | 56.9               |
| Midwest                           | 15.9                           | 10.5              |          | 11.4                        | 11.6              |          | 15.1                | 11.6               |
| South                             | 20.9                           | 19.0              |          | 22.8                        | 24.2              |          | 20.7                | 23.8               |
| West                              | 6.5                            | 7.6               |          | 8.7                         | 7.4               |          | 6.7                 | 7.8                |
| <b>Annual household income, %</b> |                                |                   | <.001    |                             |                   | <.001    |                     |                    |
| < \$45,000                        | 7.7                            | 37.2              |          | 20.6                        | 39.7              |          | 9.0                 | 27.2               |
| = \$45,000 to < \$50,000          | 4.3                            | 5.1               |          | 4.5                         | 7.4               |          | 3.3                 | 5.2                |
| = \$50,000 to < \$60,000          | 3.9                            | 3.8               |          | 6.1                         | 7.8               |          | 2.8                 | 5.9                |
| = \$60,000 to < \$69,000          | 6.2                            | 12.8              |          | 6.8                         | 6.5               |          | 5.3                 | 5.2                |
| More than \$69,000                | 77.9                           | 41.0              |          | 61.9                        | 38.6              |          | 53.3                | 36.4               |
| Not reported                      |                                |                   |          |                             |                   |          | 26.4                | 20.0               |
| <b>Out of pocket costs, %</b>     |                                |                   | .33      |                             |                   | .99      |                     |                    |
| < \$20                            | 46.6                           | 48.4              |          | 51.3                        | 52.1              |          | 41.0                | 45.6               |
| = \$20 to < \$50                  | 30.1                           | 22.6              |          | 30.5                        | 29.2              |          | 25.4                | 26.0               |
| = \$50 to < \$75                  | 10.0                           | 11.8              |          | 7.8                         | 7.9               |          | 9.0                 | 6.9                |
| = \$75 to < \$100                 | 4.6                            | 3.2               |          | 3.7                         | 3.8               |          | 3.8                 | 3.3                |
| More than \$100                   | 8.6                            | 14.0              |          | 6.6                         | 6.9               |          | 8.3                 | 6.0                |
| Not reported                      |                                |                   |          |                             |                   |          | 12.5                | 12.1               |
| <b>Survey mode, %</b>             |                                |                   | .06      |                             |                   | <.001    |                     |                    |
| Through the call center           | 1.7                            | 4.8               |          | 8.2                         | 19.2              |          | 2.1                 | 15.8               |
| Through the website               | 98.3                           | 95.2              |          | 91.8                        | 80.8              |          | 97.9                | 84.2               |
| <b>Survey Respondent</b>          |                                |                   | <.001    |                             |                   | <.001    |                     |                    |
| Patient                           | 10.1                           | 29.5              |          | 96.5                        | 99.7              |          | 13.0                | 98.7               |
| Parent / guardian                 | 90.0                           | 70.5              |          | 3.5                         | 0.3               |          | 87.0                | 1.3                |

Note for statistical tests: Unless otherwise specified, nonparametric Kruskal-Wallis Test of median for continuous variables and chi-square test for categorical variables.

If Chi-square test is not valid, *P*-value from Fisher's Exact test will be calculated.

\* A valid *P*-value was unable to be calculated.

<sup>a</sup> "Not reported" are not included in the percentage calculation.

<sup>b</sup> Further age breakdown in Children: Auvi-Q: 7 to 11 years, 53.9%; 12 to 17 years, 45.6%; unknown, 0.5%. EpiPen: 7 to 11 years, 51.4%; 12 to 17 years, 46.7%; unknown, 1.9%.

<sup>c</sup> Children with bachelors, masters, and doctorate degrees were set to missing.

**Table E3. Anaphylaxis History and Clinical Characteristics of the Auvi-Q and EpiPen Patients**

|                                                            | Children Patients <sup>a</sup> |                   |          | Adult Patients <sup>a</sup> |                   |          | Overall             |                    |
|------------------------------------------------------------|--------------------------------|-------------------|----------|-----------------------------|-------------------|----------|---------------------|--------------------|
|                                                            | Auvi-Q<br>(n=597)              | EpiPen<br>(n=105) | <i>P</i> | Auvi-Q<br>(n=403)           | EpiPen<br>(n=895) | <i>P</i> | Children<br>(N=702) | Adults<br>(N=1298) |
| <b>Age at initial diagnosis, years, %</b>                  |                                |                   | .14      |                             |                   | .14      |                     |                    |
| 0 to 5                                                     | 74.6                           | 64.1              |          | 13.2                        | 9.3               |          | 71.1                | 10.5               |
| 6 to 10                                                    | 14.9                           | 22.8              |          | 8.7                         | 7.4               |          | 15.5                | 7.8                |
| 11 to 15                                                   | 8.8                            | 9.8               |          | 6.5                         | 7.7               |          | 8.7                 | 7.3                |
| 16 to 20                                                   | 1.7                            | 3.3               |          | 10.2                        | 12.8              |          | 1.9                 | 12.0               |
| >20 <sup>b</sup>                                           | 0                              | 0                 |          | 61.5                        | 62.8              |          | 0                   | 62.4               |
| <b>Type of Allergen, %</b>                                 |                                |                   |          |                             |                   |          |                     |                    |
| Food                                                       | 91.5                           | 73.3              | <.001    | 55.1                        | 42.2              | <.001    | 88.7                | 46.2               |
| Insect sting                                               | 8.2                            | 25.7              | <.001    | 38.5                        | 57.0              | <.001    | 10.8                | 51.2               |
| Medications                                                | 9.4                            | 13.3              | .21      | 25.1                        | 29.2              | .13      | 10.0                | 27.9               |
| Latex                                                      | 2.2                            | 3.8               | .30      | 10.7                        | 10.2              | .78      | 2.4                 | 10.3               |
| Other                                                      | 11.1                           | 18.1              | .04      | 20.6                        | 22.3              | .48      | 12.1                | 21.8               |
| Don't know                                                 | 0.8                            | 2.9               | .10      | 5.2                         | 4.6               | .62      | 1.1                 | 4.8                |
| <b>First EAI prescription, %</b>                           |                                |                   | <.001    |                             |                   | .73      |                     |                    |
| Yes                                                        | 21.4                           | 46.7              |          | 40.2                        | 41.2              |          | 25.2                | 40.9               |
| No                                                         | 78.6                           | 53.3              |          | 59.8                        | 58.8              |          | 74.8                | 59.1               |
| If no, is this the same EAI that was prescribed last time? |                                |                   | <.001    |                             |                   | <.001    |                     |                    |
| Yes                                                        | 16.2                           | 80.4              |          | 14.1                        | 89.0              |          | 17.2                | 38.7               |
| No                                                         | 83.8                           | 19.6              |          | 85.9                        | 11.0              |          | 57.5                | 20.4               |
| <b>Prescriber of current EAI, %</b>                        |                                |                   | <.001    |                             |                   | <.001    |                     |                    |
| Allergist                                                  | 73.5                           | 48.6              |          | 67.5                        | 27.6              |          | 69.8                | 40.0               |
| Pediatrician                                               | 20.6                           | 30.5              |          | 2.5                         | 1.3               |          | 22.1                | 1.7                |
| Primary care doctor                                        | 4.2                            | 18.1              |          | 25.1                        | 58.0              |          | 6.3                 | 47.8               |
| ER doctor                                                  | 1.0                            | 1.9               |          | 2.5                         | 10.3              |          | 1.1                 | 7.9                |
| Other                                                      | 0.7                            | 1.0               |          | 2.5                         | 2.8               |          | 0.7                 | 2.7                |
| <b>Use of EAI ever, %</b>                                  |                                |                   | .83      |                             |                   | <.001    |                     |                    |
| 0                                                          | 78.6                           | 76.2              |          | 73.2                        | 61.7              |          | 78.2                | 65.3               |
| 1                                                          | 11.2                           | 14.3              |          | 10.7                        | 12.0              |          | 11.7                | 11.6               |
| 2 to 4                                                     | 8.4                            | 8.6               |          | 11.2                        | 17.7              |          | 8.4                 | 15.6               |
| 5                                                          | 1.7                            | 1.0               |          | 4.0                         | 8.0               |          | 1.6                 | 6.8                |
| Don't remember                                             | 0.2                            | 0                 |          | 1.0                         | 0.7               |          | 0.1                 | 0.8                |

|                                                               | Children Patients <sup>a</sup> |                   |          | Adult Patients <sup>a</sup> |                   |          | Overall             |                    |
|---------------------------------------------------------------|--------------------------------|-------------------|----------|-----------------------------|-------------------|----------|---------------------|--------------------|
|                                                               | Auvi-Q<br>(n=597)              | EpiPen<br>(n=105) | <i>P</i> | Auvi-Q<br>(n=403)           | EpiPen<br>(n=895) | <i>P</i> | Children<br>(N=702) | Adults<br>(N=1298) |
| <b>Number of anaphylaxis episodes experienced, %</b>          |                                |                   | .08      |                             |                   | <.001    |                     |                    |
| 0                                                             | 37.0                           | 27.6              |          | 24.3                        | 15.2              |          | 35.6                | 18.0               |
| 1                                                             | 32.2                           | 30.5              |          | 27.0                        | 26.7              |          | 31.9                | 26.8               |
| 2 to 5                                                        | 25.0                           | 37.1              |          | 34.7                        | 41.6              |          | 26.8                | 39.4               |
| >5                                                            | 4.7                            | 4.8               |          | 11.2                        | 15.1              |          | 4.7                 | 13.9               |
| Don't remember                                                | 1.2                            | 0                 |          | 2.7                         | 1.5               |          | 1.0                 | 1.8                |
| <b>Number of anaphylaxis-related emergency room visits, %</b> |                                |                   | .47      |                             |                   | <.001    |                     |                    |
| 0                                                             | 50.8                           | 47.6              |          | 40.7                        | 26.6              |          | 50.3                | 31.0               |
| 1                                                             | 27.3                           | 33.3              |          | 29.0                        | 30.9              |          | 28.2                | 30.4               |
| 2 to 5                                                        | 19.4                           | 15.2              |          | 23.8                        | 32.8              |          | 18.8                | 30.0               |
| >5                                                            | 2.3                            | 3.8               |          | 5.5                         | 8.4               |          | 2.6                 | 7.5                |
| Don't remember                                                | 0.2                            | 0                 |          | 1.0                         | 1.2               |          | 0.1                 | 1.2                |
| <b>Anaphylaxis-related inpatient admissions, %</b>            |                                |                   | .14      |                             |                   | .17      |                     |                    |
| 0                                                             | 85.4                           | 84.8              |          | 80.1                        | 74.9              |          | 85.3                | 76.5               |
| 1                                                             | 10.9                           | 8.6               |          | 11.2                        | 16.0              |          | 10.5                | 14.5               |
| 2 to 5                                                        | 3.2                            | 4.8               |          | 6.9                         | 6.6               |          | 3.4                 | 6.7                |
| >5                                                            | 0.3                            | 0                 |          | 1.0                         | 1.6               |          | 0.3                 | 1.4                |
| Don't remember                                                | 0.2                            | 1.9               |          | 0.7                         | 1.0               |          | 0.4                 | 0.9                |
| <b>Anaphylaxis-related physician office visits, %</b>         |                                |                   | .58      |                             |                   | .97      |                     |                    |
| 0                                                             | 45.2                           | 40.0              |          | 35.0                        | 34.7              |          | 44.4                | 34.8               |
| 1                                                             | 31.0                           | 35.2              |          | 29.3                        | 28.3              |          | 31.6                | 28.6               |
| 2 to 5                                                        | 18.9                           | 20.0              |          | 26.1                        | 27.8              |          | 19.1                | 27.3               |
| >5                                                            | 3.5                            | 4.8               |          | 8.2                         | 7.6               |          | 3.7                 | 7.8                |
| Don't remember                                                | 1.3                            | 0                 |          | 1.5                         | 1.6               |          | 1.1                 | 1.5                |

|                                      | Children Patients <sup>a</sup> |                   |          | Adult Patients <sup>a</sup> |                   |          | Overall             |                    |
|--------------------------------------|--------------------------------|-------------------|----------|-----------------------------|-------------------|----------|---------------------|--------------------|
|                                      | Auvi-Q<br>(n=597)              | EpiPen<br>(n=105) | <i>P</i> | Auvi-Q<br>(n=403)           | EpiPen<br>(n=895) | <i>P</i> | Children<br>(N=702) | Adults<br>(N=1298) |
| <b>Concomitant medications, %</b>    |                                |                   |          |                             |                   |          |                     |                    |
| None                                 | 31.0                           | 24.8              | .20      | 22.8                        | 18.7              | .08      | 30.1                | 20.0               |
| Steroids                             | 30.5                           | 22.9              | .11      | 31.5                        | 24.8              | .01      | 29.3                | 26.9               |
| Antihistamines                       | 51.1                           | 49.5              | .77      | 47.4                        | 41.1              | .03      | 50.9                | 43.1               |
| Beta Blockers                        | 0.7                            | 2.9               | .07      | 4.2                         | 8.4               | .007     | 1.0                 | 7.1                |
| ACE Inhibitors                       | 0.3                            | 4.8               | .001     | 5.0                         | 16.3              | <.001    | 1.0                 | 12.8               |
| Other                                | 18.8                           | 29.5              | .01      | 40.0                        | 49.1              | .002     | 20.4                | 46.2               |
| <b>Other medical conditions, %</b>   |                                |                   |          |                             |                   |          |                     |                    |
| None                                 | 24.8                           | 18.1              | .14      | 19.4                        | 15.3              | .07      | 23.8                | 16.6               |
| Heart disease                        | 0                              | 0                 | *        | 1.5                         | 6.3               | <.001    | 0                   | 4.8                |
| Asthma                               | 43.7                           | 37.1              | .21      | 28.8                        | 31.1              | .41      | 42.7                | 30.4               |
| COPD                                 | 0.2                            | 1.9               | .06      | 3.2                         | 6.8               | .01      | 0.4                 | 5.7                |
| High blood pressure                  | 0.2                            | 7.6               | <.001    | 14.6                        | 27.7              | <.001    | 1.3                 | 23.7               |
| Diabetes                             | 0.7                            | 2.9               | .07      | 3.0                         | 8.8               | <.001    | 1.0                 | 7.0                |
| Cancer                               | 0.5                            | 1.9               | .16      | 3.0                         | 4.9               | .11      | 0.7                 | 4.3                |
| Allergies                            | 63.5                           | 58.1              | .29      | 64.8                        | 59.0              | .05      | 62.7                | 60.8               |
| Other                                | 11.1                           | 21.0              | .005     | 26.3                        | 39.6              | <.001    | 12.5                | 35.4               |
| <b>Length of time with device, %</b> |                                |                   | .28      |                             |                   | <.001    |                     |                    |
| ≤3 months                            | 2.8                            | 2.9               |          | 3.5                         | 4.8               |          | 2.8                 | 4.4                |
| >3 to ≤6 months                      | 44.2                           | 36.2              |          | 35.0                        | 34.3              |          | 43.0                | 34.5               |
| >6 to ≤9 months                      | 43.7                           | 55.2              |          | 36.7                        | 45.6              |          | 45.4                | 42.8               |
| >9 to ≤12 months                     | 8.7                            | 5.7               |          | 20.8                        | 12.0              |          | 8.3                 | 14.7               |
| >12 months                           | 0.5                            | 0                 |          | 4.0                         | 3.4               |          | 0.4                 | 3.5                |

Note for statistical tests: Unless otherwise specified, nonparametric Kruskal-Wallis Test of median for continuous variables and chi-square test for categorical variables. If Chi-square test is not valid, *P*-value from Fisher's Exact test will be calculated.

\* A valid *P*-value was unable to be calculated.

<sup>a</sup> "Missing" are not included in the percentage calculation.

<sup>b</sup> Responses for some children that reported being diagnosed over the age of 20 were set to missing.

**Table E4. Binary Logistic Regression Model for Likelihood of Carrying Device All the Time During Last 7 Days (Overall)**

Dependent variable: carrying EAI device all the time in all 7 days.

Parameter estimates represent the coefficients.

| <b>N=2000</b>                                                           | <b>Parameter</b> | <b>SE</b> | <b>Chi-Square</b> | <b>P-value</b> | <b>Odds Ratio</b> | <b>95% Confidence Interval</b> |                    |
|-------------------------------------------------------------------------|------------------|-----------|-------------------|----------------|-------------------|--------------------------------|--------------------|
| <b>Independent Variables</b>                                            |                  |           |                   |                |                   | <b>Lower Limit</b>             | <b>Upper Limit</b> |
| <b>EAI device (reference: EpiPen)</b>                                   |                  |           |                   |                |                   |                                |                    |
| Auvi-Q                                                                  | 0.645            | 0.127     | 25.691            | <.0001         | 1.91              | 1.486                          | 2.447              |
| <b>Age group (reference: 7-17 years)</b>                                |                  |           |                   |                |                   |                                |                    |
| 18 to 26                                                                | -0.208           | 0.251     | 0.688             | 0.4069         | 0.81              | 0.497                          | 1.328              |
| 27 to 36                                                                | 0.500            | 0.283     | 3.109             | 0.0778         | 1.65              | 0.946                          | 2.871              |
| 37 to 46                                                                | 0.523            | 0.276     | 3.585             | 0.0583         | 1.69              | 0.982                          | 2.896              |
| 47 to 56                                                                | 0.933            | 0.266     | 12.318            | 0.0004         | 2.54              | 1.510                          | 4.278              |
| 57 to 64                                                                | 1.057            | 0.282     | 14.000            | 0.0002         | 2.88              | 1.654                          | 5.003              |
| >65                                                                     | 0.495            | 0.303     | 2.669             | 0.1023         | 1.64              | 0.906                          | 2.972              |
| <b>Gender (reference: Male)</b>                                         |                  |           |                   |                |                   |                                |                    |
| Female                                                                  | 0.632            | 0.106     | 35.676            | <.0001         | 1.88              | 1.529                          | 2.314              |
| <b>Education (reference: Elementary to some college + not reported)</b> |                  |           |                   |                |                   |                                |                    |
| Associate / Bachelor degree                                             | -0.457           | 0.143     | 10.251            | 0.001          | 0.63              | 0.478                          | 0.837              |
| Master degree and up                                                    | -0.468           | 0.168     | 7.811             | 0.005          | 0.63              | 0.451                          | 0.869              |
| <b>Insurance Type (reference: HMO)</b>                                  |                  |           |                   |                |                   |                                |                    |
| PPO                                                                     | 0.046            | 0.133     | 0.120             | 0.7290         | 1.05              | 0.807                          | 1.358              |
| Other                                                                   | 0.359            | 0.152     | 5.613             | 0.0178         | 1.43              | 1.064                          | 1.928              |
| <b>Geographic location of residence (reference: Northeast)</b>          |                  |           |                   |                |                   |                                |                    |
| Midwest                                                                 | -0.075           | 0.151     | 0.243             | 0.6221         | 0.93              | 0.690                          | 1.248              |
| South                                                                   | 0.128            | 0.121     | 1.121             | 0.2896         | 1.137             | 0.897                          | 1.442              |
| West                                                                    | -0.311           | 0.191     | 2.636             | 0.1045         | 0.73              | 0.504                          | 1.066              |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |                  |           |                   |                |                   |                                |                    |
| >= \$69,000                                                             | -0.651           | 0.123     | 27.858            | <.0001         | 0.52              | 0.410                          | 0.664              |
| Not reported                                                            | -0.209           | 0.139     | 2.267             | 0.1322         | 0.81              | 0.618                          | 1.065              |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |                  |           |                   |                |                   |                                |                    |
| >=\$20                                                                  | 0.042            | 0.107     | 0.156             | 0.6924         | 1.04              | 0.846                          | 1.286              |
| Not reported                                                            | -0.378           | 0.165     | 5.260             | 0.0218         | 0.69              | 0.496                          | 0.947              |
| <b>Survey mode (reference: Through the website)</b>                     |                  |           |                   |                |                   |                                |                    |
| Through the call center                                                 | 0.159            | 0.174     | 0.827             | 0.3630         | 1.17              | 0.833                          | 1.649              |
| <b>Survey Respondent (reference: Patient)</b>                           |                  |           |                   |                |                   |                                |                    |
| Parent / guardian                                                       | -0.020           | 0.224     | 0.008             | 0.9306         | 0.98              | 0.632                          | 1.522              |
| <b>Allergic to Food (reference: No)</b>                                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.258            | 0.120     | 4.606             | 0.0319         | 1.29              | 1.023                          | 1.637              |
| <b>Allergic to Medications (reference: No)</b>                          |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.190            | 0.130     | 2.117             | 0.1457         | 1.21              | 0.936                          | 1.561              |
| <b>Allergic to Latex (reference: No)</b>                                |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.410            | 0.204     | 4.035             | 0.0446         | 1.51              | 1.010                          | 2.248              |
| <b>First EAI prescription (reference: No)</b>                           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | -0.047           | 0.106     | 0.191             | 0.6619         | 0.96              | 0.775                          | 1.176              |
| <b>Prescriber of the EAI (reference: Other)</b>                         |                  |           |                   |                |                   |                                |                    |
| Allergist                                                               | -0.058           | 0.112     | 0.267             | 0.6052         | 0.94              | 0.757                          | 1.176              |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |                  |           |                   |                |                   |                                |                    |
| Once                                                                    | 0.624            | 0.134     | 21.693            | <.0001         | 1.87              | 1.435                          | 2.427              |
| >=2 times                                                               | 0.737            | 0.128     | 33.389            | <.0001         | 2.09              | 1.627                          | 2.682              |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.064            | 0.103     | 0.377             | 0.5392         | 1.07              | 0.870                          | 1.305              |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.335            | 0.108     | 9.690             | 0.0019         | 1.40              | 1.132                          | 1.727              |
| <b>Length of time with device (continuous variable in month)</b>        |                  |           |                   |                |                   |                                |                    |
| Length of time with device in months                                    | -0.035           | 0.021     | 2.708             | 0.0999         | 0.97              | 0.926                          | 1.007              |

**Table E5. Binary Logistic Regression Model for Likelihood of Carrying Device All the Time During Last 7 Days (Adults)**

Dependent variable: carrying EAI device all the time in all 7 days.

Parameter estimates represent the coefficients.

| <b>N=1298</b>                                                           | <b>Parameter</b> | <b>SE</b> | <b>Chi-Square</b> | <b>P-value</b> | <b>Odds Ratio</b> | <b>95% Confidence Interval</b> |                    |
|-------------------------------------------------------------------------|------------------|-----------|-------------------|----------------|-------------------|--------------------------------|--------------------|
| <b>Independent Variables</b>                                            |                  |           |                   |                |                   | <b>Lower Limit</b>             | <b>Upper Limit</b> |
| <b>EAI device (reference: EpiPen)</b>                                   |                  |           |                   |                |                   |                                |                    |
| Auvi-Q                                                                  | 0.579            | 0.151     | 14.803            | 0.0001         | 1.78              | 1.329                          | 2.397              |
| <b>Age group (reference: 18 to 26 years)</b>                            |                  |           |                   |                |                   |                                |                    |
| 27 to 36                                                                | 0.737            | 0.227     | 10.501            | 0.0012         | 2.09              | 1.338                          | 3.262              |
| 37 to 46                                                                | 0.758            | 0.219     | 11.979            | 0.0005         | 2.13              | 1.389                          | 3.279              |
| 47 to 56                                                                | 1.173            | 0.208     | 31.652            | <.0001         | 3.23              | 2.147                          | 4.861              |
| 57 to 64                                                                | 1.289            | 0.227     | 32.171            | <.0001         | 3.63              | 2.325                          | 5.665              |
| >65                                                                     | 0.746            | 0.254     | 8.615             | 0.0033         | 2.11              | 1.281                          | 3.468              |
| <b>Gender (reference: Male)</b>                                         |                  |           |                   |                |                   |                                |                    |
| Female                                                                  | 0.984            | 0.144     | 46.456            | <.0001         | 2.68              | 2.016                          | 3.549              |
| <b>Education (reference: Elementary to some college + not reported)</b> |                  |           |                   |                |                   |                                |                    |
| Associate / Bachelor degree                                             | -0.519           | 0.148     | 12.329            | 0.000          | 0.60              | 0.445                          | 0.795              |
| Master degree and up                                                    | -0.604           | 0.178     | 11.454            | 0.001          | 0.55              | 0.386                          | 0.776              |
| <b>Insurance Type (reference: HMO)</b>                                  |                  |           |                   |                |                   |                                |                    |
| PPO                                                                     | -0.064           | 0.174     | 0.135             | 0.7130         | 0.94              | 0.667                          | 1.319              |
| Other                                                                   | 0.328            | 0.188     | 3.058             | 0.0804         | 1.39              | 0.961                          | 2.007              |
| <b>Geographic location of residence (reference: Northeast)</b>          |                  |           |                   |                |                   |                                |                    |
| Midwest                                                                 | -0.340           | 0.200     | 2.885             | 0.0894         | 0.71              | 0.480                          | 1.054              |
| South                                                                   | 0.089            | 0.153     | 0.337             | 0.5613         | 1.093             | 0.810                          | 1.475              |
| West                                                                    | -0.702           | 0.241     | 8.465             | 0.0036         | 0.50              | 0.309                          | 0.795              |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |                  |           |                   |                |                   |                                |                    |
| >= \$69,000                                                             | -0.538           | 0.153     | 12.436            | 0.0004         | 0.58              | 0.433                          | 0.787              |
| Not reported                                                            | -0.072           | 0.176     | 0.167             | 0.6825         | 0.93              | 0.659                          | 1.315              |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |                  |           |                   |                |                   |                                |                    |
| >=\$20                                                                  | -0.150           | 0.137     | 1.196             | 0.2740         | 0.86              | 0.658                          | 1.126              |
| Not reported                                                            | -0.345           | 0.213     | 2.619             | 0.1056         | 0.71              | 0.466                          | 1.076              |
| <b>Survey mode (reference: Through the website)</b>                     |                  |           |                   |                |                   |                                |                    |
| Through the call center                                                 | 0.020            | 0.186     | 0.012             | 0.9125         | 1.02              | 0.709                          | 1.470              |
| <b>Allergic to Food (reference: No)</b>                                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.271            | 0.137     | 3.933             | 0.0473         | 1.31              | 1.003                          | 1.714              |
| <b>Allergic to Medications (reference: No)</b>                          |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.199            | 0.151     | 1.727             | 0.1888         | 1.22              | 0.907                          | 1.642              |
| <b>Allergic to Latex (reference: No)</b>                                |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.506            | 0.226     | 5.008             | 0.0252         | 1.66              | 1.065                          | 2.583              |
| <b>First EAI prescription (reference: No)</b>                           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | -0.061           | 0.131     | 0.219             | 0.6402         | 0.94              | 0.728                          | 1.216              |
| <b>Prescriber of the EAI (reference: Other)</b>                         |                  |           |                   |                |                   |                                |                    |
| Allergist                                                               | -0.059           | 0.147     | 0.164             | 0.6859         | 0.94              | 0.707                          | 1.256              |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |                  |           |                   |                |                   |                                |                    |
| Once                                                                    | 0.802            | 0.188     | 18.150            | <.0001         | 2.23              | 1.542                          | 3.224              |
| >=2 times                                                               | 0.699            | 0.171     | 16.790            | <.0001         | 2.01              | 1.440                          | 2.810              |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | -0.081           | 0.134     | 0.369             | 0.5434         | 0.92              | 0.709                          | 1.198              |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.284            | 0.144     | 3.878             | 0.0489         | 1.33              | 1.001                          | 1.761              |
| <b>Length of time with device (continuous variable in month)</b>        |                  |           |                   |                |                   |                                |                    |
| Length of time with device in months                                    | -0.015           | 0.026     | 0.335             | 0.5627         | 0.99              | 0.937                          | 1.036              |

**Table E6. Binary Logistic Regression Model for Likelihood of Carrying Device All the Time During Last 7 Days (Children)**

Dependent variable: carrying EAI device all the time in all 7 days.

Parameter estimates represent the coefficients.

Five children with missing age-group data were excluded from the model.

| N=697                                                                  | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                  |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                  |           |       |            |         |            |                         |             |
| Auvi-Q                                                                 | 1.182     | 0.280 | 17.837     | <.0001  | 3.26       | 1.884                   | 5.639       |
| <b>Age (reference: 7-11 years)</b>                                     |           |       |            |         |            |                         |             |
| 12-17 years                                                            | -0.176    | 0.170 | 1.074      | 0.3002  | 0.84       | 0.602                   | 1.170       |
| <b>Gender (reference: Male)</b>                                        |           |       |            |         |            |                         |             |
| Female                                                                 | 0.218     | 0.170 | 1.639      | 0.2004  | 1.24       | 0.891                   | 1.736       |
| <b>Insurance Type (reference: HMO)</b>                                 |           |       |            |         |            |                         |             |
| PPO                                                                    | 0.228     | 0.219 | 1.085      | 0.2975  | 1.26       | 0.818                   | 1.928       |
| Other                                                                  | 0.425     | 0.280 | 2.299      | 0.1294  | 1.53       | 0.883                   | 2.648       |
| <b>Geographic location of residence (reference: Northeast)</b>         |           |       |            |         |            |                         |             |
| Midwest                                                                | 0.179     | 0.239 | 0.563      | 0.4530  | 1.20       | 0.749                   | 1.911       |
| South                                                                  | 0.180     | 0.211 | 0.727      | 0.3938  | 1.197      | 0.791                   | 1.811       |
| West                                                                   | 0.272     | 0.339 | 0.647      | 0.4213  | 1.31       | 0.676                   | 2.551       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>              |           |       |            |         |            |                         |             |
| >= \$69,000                                                            | -0.825    | 0.235 | 12.349     | 0.0004  | 0.44       | 0.277                   | 0.694       |
| Not reported                                                           | -0.390    | 0.256 | 2.322      | 0.1275  | 0.68       | 0.410                   | 1.118       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                      |           |       |            |         |            |                         |             |
| >=\$20                                                                 | 0.391     | 0.181 | 4.700      | 0.0302  | 1.48       | 1.038                   | 2.106       |
| Not reported                                                           | -0.368    | 0.283 | 1.689      | 0.1937  | 0.69       | 0.398                   | 1.206       |
| <b>Survey mode (reference: Through the website)</b>                    |           |       |            |         |            |                         |             |
| Through the call center                                                | 1.145     | 0.622 | 3.384      | 0.0658  | 3.14       | 0.928                   | 10.636      |
| <b>Survey Respondent (reference: Patient)</b>                          |           |       |            |         |            |                         |             |
| Parent / guardian                                                      | 0.009     | 0.269 | 0.001      | 0.9719  | 1.01       | 0.596                   | 1.709       |
| <b>Allergic to Food (reference: No)</b>                                |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.293     | 0.290 | 1.020      | 0.3125  | 1.34       | 0.759                   | 2.364       |
| <b>Allergic to Medications (reference: No)</b>                         |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.166     | 0.285 | 0.341      | 0.5594  | 1.18       | 0.676                   | 2.065       |
| <b>Allergic to Latex (reference: No)</b>                               |           |       |            |         |            |                         |             |
| Yes                                                                    | -0.240    | 0.563 | 0.181      | 0.6704  | 0.79       | 0.261                   | 2.372       |
| <b>First EAI prescription (reference: No)</b>                          |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.087     | 0.203 | 0.182      | 0.6698  | 1.09       | 0.732                   | 1.624       |
| <b>Prescriber of the EAI (reference: Other)</b>                        |           |       |            |         |            |                         |             |
| Allergist                                                              | -0.811    | 0.327 | 6.146      | 0.0132  | 0.44       | 0.234                   | 0.844       |
| Pediatrician                                                           | -0.917    | 0.356 | 6.643      | 0.0100  | 0.40       | 0.199                   | 0.803       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b> |           |       |            |         |            |                         |             |
| Once                                                                   | 0.389     | 0.202 | 3.729      | 0.0535  | 1.48       | 0.994                   | 2.190       |
| >=2 times                                                              | 0.793     | 0.207 | 14.621     | 0.0001  | 2.21       | 1.472                   | 3.319       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>          |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.198     | 0.174 | 1.294      | 0.2554  | 1.22       | 0.867                   | 1.715       |
| <b>Other medical conditions: Asthma (reference: No)</b>                |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.326     | 0.173 | 3.532      | 0.0602  | 1.39       | 0.986                   | 1.946       |
| <b>Length of time with device (continuous variable in month)</b>       |           |       |            |         |            |                         |             |
| Length of time with device in months                                   | -0.095    | 0.043 | 4.876      | 0.0272  | 0.91       | 0.837                   | 0.989       |

**Table E7. Binary Logistic Regression Model for Confidence in Using Device Correctly (Adults: Using the Device on Themselves)**

Dependent variable: patient feels very confident about correctly using the EAI.

Parameter estimates represent the coefficients.

| N=1279 (Apply to those who answered the survey by self only)            |           |       |            |         |            |                         |             |
|-------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                   | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|                                                                         |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                   |           |       |            |         |            |                         |             |
| Auvi-Q                                                                  | 0.702     | 0.153 | 21.218     | <.0001  | 2.02       | 1.497                   | 2.721       |
| <b>Age group (reference: 18 to 26 years)</b>                            |           |       |            |         |            |                         |             |
| 27 to 36                                                                | 0.052     | 0.220 | 0.056      | 0.8130  | 1.05       | 0.684                   | 1.623       |
| 37 to 46                                                                | 0.476     | 0.217 | 4.817      | 0.0282  | 1.61       | 1.052                   | 2.463       |
| 47 to 56                                                                | 0.693     | 0.206 | 11.320     | 0.0008  | 2.00       | 1.335                   | 2.993       |
| 57 to 64                                                                | 0.304     | 0.219 | 1.938      | 0.1638  | 1.36       | 0.883                   | 2.080       |
| >65                                                                     | 0.191     | 0.251 | 0.581      | 0.4459  | 1.21       | 0.741                   | 1.979       |
| <b>Gender (reference: Male)</b>                                         |           |       |            |         |            |                         |             |
| Female                                                                  | -0.314    | 0.146 | 4.648      | 0.0311  | 0.73       | 0.549                   | 0.972       |
| <b>Education (reference: Elementary to some college + not reported)</b> |           |       |            |         |            |                         |             |
| Associate / Bachelor degree                                             | -0.247    | 0.147 | 2.834      | 0.092   | 0.78       | 0.586                   | 1.041       |
| Master degree and up                                                    | -0.235    | 0.178 | 1.749      | 0.186   | 0.79       | 0.558                   | 1.120       |
| <b>Insurance Type (reference: HMO)</b>                                  |           |       |            |         |            |                         |             |
| PPO                                                                     | -0.077    | 0.175 | 0.191      | 0.6622  | 0.93       | 0.657                   | 1.305       |
| Other                                                                   | -0.138    | 0.188 | 0.541      | 0.4621  | 0.87       | 0.602                   | 1.259       |
| <b>Geographic location of residence (reference: Northeast)</b>          |           |       |            |         |            |                         |             |
| Midwest                                                                 | 0.102     | 0.206 | 0.244      | 0.6211  | 1.11       | 0.739                   | 1.658       |
| South                                                                   | 0.350     | 0.154 | 5.146      | 0.0233  | 1.419      | 1.049                   | 1.921       |
| West                                                                    | -0.321    | 0.230 | 1.960      | 0.1616  | 0.73       | 0.462                   | 1.137       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |           |       |            |         |            |                         |             |
| >= \$69,000                                                             | 0.064     | 0.152 | 0.175      | 0.6759  | 1.07       | 0.791                   | 1.437       |
| Not reported                                                            | 0.017     | 0.175 | 0.009      | 0.9249  | 1.02       | 0.722                   | 1.432       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |           |       |            |         |            |                         |             |
| >=\$20                                                                  | -0.115    | 0.137 | 0.695      | 0.4044  | 0.89       | 0.681                   | 1.167       |
| Not reported                                                            | -0.087    | 0.208 | 0.175      | 0.6755  | 0.92       | 0.609                   | 1.379       |
| <b>Survey mode (reference: Through the website)</b>                     |           |       |            |         |            |                         |             |
| Through the call center                                                 | 0.976     | 0.206 | 22.553     | <.0001  | 2.65       | 1.774                   | 3.969       |
| <b>Allergic to Food (reference: No)</b>                                 |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.082    | 0.136 | 0.365      | 0.5456  | 0.92       | 0.706                   | 1.202       |
| <b>Allergic to Medications (reference: No)</b>                          |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.165    | 0.151 | 1.203      | 0.2728  | 0.85       | 0.631                   | 1.139       |
| <b>Allergic to Latex (reference: No)</b>                                |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.373     | 0.222 | 2.815      | 0.0934  | 1.45       | 0.939                   | 2.246       |
| <b>First EAI prescription (reference: No)</b>                           |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.014    | 0.130 | 0.012      | 0.9143  | 0.99       | 0.765                   | 1.271       |
| <b>Prescriber of the EAI (reference: Other)</b>                         |           |       |            |         |            |                         |             |
| Allergist                                                               | -0.390    | 0.146 | 7.133      | 0.0076  | 0.68       | 0.509                   | 0.902       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |           |       |            |         |            |                         |             |
| Once                                                                    | 0.318     | 0.182 | 3.045      | 0.0810  | 1.37       | 0.962                   | 1.964       |
| >=2 times                                                               | 0.522     | 0.166 | 9.884      | 0.0017  | 1.69       | 1.217                   | 2.334       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.063    | 0.133 | 0.224      | 0.6360  | 0.94       | 0.724                   | 1.218       |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.131     | 0.142 | 0.854      | 0.3554  | 1.14       | 0.863                   | 1.506       |
| <b>Length of time with device (continuous variable in month)</b>        |           |       |            |         |            |                         |             |
| Length of time with device in months                                    | -0.047    | 0.025 | 3.397      | 0.0653  | 0.95       | 0.908                   | 1.003       |

**Table E8. Binary Logistic Regression Model for Confidence in Using Device Correctly (Adults: Someone Else Using the Device)**

Dependent variable: patient feels very confident about others correctly using the EAI.

Parameter estimates represent the coefficients.

| N=1276 (Apply to those who answered the confidence in others only)      |           |       |            |         |            |                         |             |
|-------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                   | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|                                                                         |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                   |           |       |            |         |            |                         |             |
| Auvi-Q                                                                  | 0.813     | 0.157 | 26.829     | <.0001  | 2.25       | 1.657                   | 3.066       |
| <b>Age group (reference: 18 to 26 years)</b>                            |           |       |            |         |            |                         |             |
| 27 to 36                                                                | -0.148    | 0.248 | 0.353      | 0.5526  | 0.86       | 0.530                   | 1.404       |
| 37 to 46                                                                | -0.070    | 0.234 | 0.088      | 0.7663  | 0.93       | 0.590                   | 1.476       |
| 47 to 56                                                                | 0.607     | 0.214 | 8.065      | 0.0045  | 1.83       | 1.207                   | 2.787       |
| 57 to 64                                                                | 0.315     | 0.232 | 1.838      | 0.1752  | 1.37       | 0.869                   | 2.158       |
| >65                                                                     | 0.390     | 0.262 | 2.216      | 0.1366  | 1.48       | 0.884                   | 2.467       |
| <b>Gender (reference: Male)</b>                                         |           |       |            |         |            |                         |             |
| Female                                                                  | -0.079    | 0.151 | 0.277      | 0.5990  | 0.92       | 0.687                   | 1.242       |
| <b>Education (reference: Elementary to some college + not reported)</b> |           |       |            |         |            |                         |             |
| Associate / Bachelor degree                                             | -0.271    | 0.149 | 3.312      | 0.069   | 0.76       | 0.569                   | 1.021       |
| Master degree and up                                                    | -0.621    | 0.192 | 10.530     | 0.001   | 0.54       | 0.369                   | 0.782       |
| <b>Insurance Type (reference: HMO)</b>                                  |           |       |            |         |            |                         |             |
| PPO                                                                     | -0.056    | 0.184 | 0.093      | 0.7599  | 0.95       | 0.660                   | 1.355       |
| Other                                                                   | 0.073     | 0.192 | 0.143      | 0.7055  | 1.08       | 0.738                   | 1.566       |
| <b>Geographic location of residence (reference: Northeast)</b>          |           |       |            |         |            |                         |             |
| Midwest                                                                 | -0.314    | 0.211 | 2.227      | 0.1356  | 0.73       | 0.484                   | 1.103       |
| South                                                                   | -0.004    | 0.158 | 0.001      | 0.9822  | 0.996      | 0.731                   | 1.359       |
| West                                                                    | 0.025     | 0.242 | 0.010      | 0.9187  | 1.03       | 0.638                   | 1.648       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |           |       |            |         |            |                         |             |
| >= \$69,000                                                             | -0.179    | 0.160 | 1.247      | 0.2641  | 0.84       | 0.611                   | 1.144       |
| Not reported                                                            | -0.205    | 0.183 | 1.257      | 0.2623  | 0.82       | 0.569                   | 1.166       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |           |       |            |         |            |                         |             |
| >=\$20                                                                  | -0.421    | 0.142 | 8.809      | 0.0030  | 0.66       | 0.497                   | 0.867       |
| Not reported                                                            | -0.346    | 0.221 | 2.452      | 0.1174  | 0.71       | 0.459                   | 1.091       |
| <b>Survey mode (reference: Through the website)</b>                     |           |       |            |         |            |                         |             |
| Through the call center                                                 | 0.774     | 0.175 | 19.463     | <.0001  | 2.17       | 1.537                   | 3.057       |
| <b>Allergic to Food (reference: No)</b>                                 |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.134    | 0.142 | 0.887      | 0.3463  | 0.88       | 0.662                   | 1.156       |
| <b>Allergic to Medications (reference: No)</b>                          |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.044    | 0.155 | 0.081      | 0.7759  | 0.96       | 0.706                   | 1.296       |
| <b>Allergic to Latex (reference: No)</b>                                |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.058     | 0.217 | 0.072      | 0.7879  | 1.06       | 0.693                   | 1.622       |
| <b>First EAI prescription (reference: No)</b>                           |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.238     | 0.135 | 3.119      | 0.0774  | 1.27       | 0.974                   | 1.652       |
| <b>Prescriber of the EAI (reference: Other)</b>                         |           |       |            |         |            |                         |             |
| Allergist                                                               | -0.572    | 0.155 | 13.577     | 0.0002  | 0.57       | 0.417                   | 0.765       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |           |       |            |         |            |                         |             |
| Once                                                                    | 0.239     | 0.201 | 1.406      | 0.2357  | 1.27       | 0.856                   | 1.883       |
| >=2 times                                                               | 0.354     | 0.183 | 3.751      | 0.0528  | 1.43       | 0.996                   | 2.039       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.204     | 0.137 | 2.220      | 0.1362  | 1.23       | 0.938                   | 1.603       |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.396     | 0.146 | 7.379      | 0.0066  | 1.49       | 1.117                   | 1.976       |
| <b>Length of time with device (continuous variable in month)</b>        |           |       |            |         |            |                         |             |
| Length of time with device in months                                    | -0.004    | 0.026 | 0.027      | 0.8702  | 1.00       | 0.946                   | 1.048       |

**Table E9. Binary Logistic Regression Model for Confidence in Using Device Correctly (Parent/Guardian: Using the Device on Their Children)**

Dependent variable: the parent /guardian feels very confident about correctly using the EAI on their child.

Parameter estimates represent the coefficients.

Five children with missing age-group data were excluded from the model.

| N=608 (Apply to those who answered the survey on behalf of their children) |           |       |            |         |            |                         |             |
|----------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                      | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
| EAI device (reference: EpiPen)                                             |           |       |            |         |            | Lower Limit             | Upper Limit |
| Auvi-Q                                                                     | 0.274     | 0.288 | 0.906      | 0.3412  | 1.32       | 0.748                   | 2.311       |
| Age (reference: 7-11 years)                                                |           |       |            |         |            |                         |             |
| 12-17 years                                                                | -0.063    | 0.183 | 0.117      | 0.7319  | 0.94       | 0.656                   | 1.345       |
| Gender (reference: Male)                                                   |           |       |            |         |            |                         |             |
| Female                                                                     | -0.244    | 0.183 | 1.769      | 0.1835  | 0.78       | 0.547                   | 1.122       |
| Insurance Type (reference: HMO)                                            |           |       |            |         |            |                         |             |
| PPO                                                                        | -0.262    | 0.239 | 1.204      | 0.2725  | 0.77       | 0.482                   | 1.229       |
| Other                                                                      | -0.518    | 0.310 | 2.792      | 0.0948  | 0.60       | 0.324                   | 1.094       |
| Geographic location of residence (reference: Northeast)                    |           |       |            |         |            |                         |             |
| Midwest                                                                    | -0.094    | 0.263 | 0.127      | 0.7212  | 0.91       | 0.543                   | 1.525       |
| South                                                                      | 0.366     | 0.237 | 2.396      | 0.1216  | 1.442      | 0.907                   | 2.294       |
| West                                                                       | 0.122     | 0.394 | 0.096      | 0.7571  | 1.13       | 0.522                   | 2.444       |
| Annual household income (reference: <\$69,000 )                            |           |       |            |         |            |                         |             |
| >= \$69,000                                                                | -0.383    | 0.261 | 2.150      | 0.1426  | 0.68       | 0.409                   | 1.138       |
| Not reported                                                               | -0.289    | 0.286 | 1.022      | 0.3121  | 0.75       | 0.428                   | 1.312       |
| Out of pocket costs (reference: <\$20 )                                    |           |       |            |         |            |                         |             |
| >=\$20                                                                     | -0.094    | 0.197 | 0.226      | 0.6349  | 0.91       | 0.619                   | 1.340       |
| Not reported                                                               | -0.038    | 0.291 | 0.017      | 0.8968  | 0.96       | 0.544                   | 1.705       |
| Survey mode (reference: Through the website)                               |           |       |            |         |            |                         |             |
| Through the call center                                                    | 2.011     | 1.058 | 3.611      | 0.0574  | 7.47       | 0.939                   | 59.406      |
| Allergic to Food (reference: No)                                           |           |       |            |         |            |                         |             |
| Yes                                                                        | -0.293    | 0.320 | 0.839      | 0.3596  | 0.75       | 0.399                   | 1.396       |
| Allergic to Medications (reference: No)                                    |           |       |            |         |            |                         |             |
| Yes                                                                        | 0.582     | 0.367 | 2.521      | 0.1124  | 1.79       | 0.872                   | 3.671       |
| Allergic to Latex (reference: No)                                          |           |       |            |         |            |                         |             |
| Yes                                                                        | -0.560    | 0.613 | 0.834      | 0.3612  | 0.57       | 0.172                   | 1.900       |
| First EAI prescription (reference: No)                                     |           |       |            |         |            |                         |             |
| Yes                                                                        | 0.180     | 0.222 | 0.658      | 0.4172  | 1.20       | 0.775                   | 1.852       |
| Prescriber of the EAI (reference: Other)                                   |           |       |            |         |            |                         |             |
| Allergist                                                                  | -0.260    | 0.397 | 0.429      | 0.5127  | 0.77       | 0.354                   | 1.679       |
| Pediatrician                                                               | -0.217    | 0.422 | 0.263      | 0.6078  | 0.81       | 0.352                   | 1.842       |
| Number of anaphylaxis episodes experienced (reference: 0 times)            |           |       |            |         |            |                         |             |
| Once                                                                       | 0.344     | 0.213 | 2.608      | 0.1063  | 1.41       | 0.929                   | 2.139       |
| >=2 times                                                                  | 0.503     | 0.228 | 4.886      | 0.0271  | 1.65       | 1.059                   | 2.585       |
| Concomitant medication: Antihistamines (reference: No)                     |           |       |            |         |            |                         |             |
| Yes                                                                        | 0.190     | 0.188 | 1.026      | 0.3110  | 1.21       | 0.837                   | 1.748       |
| Other medical conditions: Asthma (reference: No)                           |           |       |            |         |            |                         |             |
| Yes                                                                        | 0.388     | 0.193 | 4.040      | 0.0444  | 1.47       | 1.010                   | 2.151       |
| Length of time with device (continuous variable in month)                  |           |       |            |         |            |                         |             |
| Length of time with device in months                                       | -0.051    | 0.047 | 1.166      | 0.2802  | 0.95       | 0.866                   | 1.042       |

**Table E10. Binary Logistic Regression Model for Clarity of Instructions (Overall)**

Dependent variable: patient feels the EAI instructions are provided very clearly.

Parameter estimates represent the coefficients.

| N=2000                                                                  | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|-------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                   |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                   |           |       |            |         |            |                         |             |
| Auvi-Q                                                                  | 1.132     | 0.183 | 38.284     | <.0001  | 3.10       | 2.167                   | 4.438       |
| <b>Age group (reference: 7-17 years)</b>                                |           |       |            |         |            |                         |             |
| 18 to 26                                                                | 0.165     | 0.357 | 0.213      | 0.6444  | 1.18       | 0.586                   | 2.375       |
| 27 to 36                                                                | 0.298     | 0.410 | 0.529      | 0.4670  | 1.35       | 0.604                   | 3.006       |
| 37 to 46                                                                | 0.097     | 0.389 | 0.062      | 0.8039  | 1.10       | 0.513                   | 2.363       |
| 47 to 56                                                                | 0.517     | 0.384 | 1.807      | 0.1788  | 1.68       | 0.789                   | 3.561       |
| 57 to 64                                                                | 0.024     | 0.389 | 0.004      | 0.9500  | 1.03       | 0.478                   | 2.197       |
| >65                                                                     | 0.099     | 0.421 | 0.055      | 0.8140  | 1.10       | 0.484                   | 2.517       |
| <b>Gender (reference: Male)</b>                                         |           |       |            |         |            |                         |             |
| Female                                                                  | 0.058     | 0.150 | 0.150      | 0.6983  | 1.06       | 0.790                   | 1.421       |
| <b>Education (reference: Elementary to some college + not reported)</b> |           |       |            |         |            |                         |             |
| Associate / Bachelor degree                                             | -0.235    | 0.198 | 1.408      | 0.235   | 0.79       | 0.537                   | 1.165       |
| Master degree and up                                                    | -0.435    | 0.224 | 3.752      | 0.053   | 0.65       | 0.417                   | 1.005       |
| <b>Insurance Type (reference: HMO)</b>                                  |           |       |            |         |            |                         |             |
| PPO                                                                     | 0.186     | 0.180 | 1.062      | 0.3027  | 1.20       | 0.846                   | 1.714       |
| Other                                                                   | 0.095     | 0.206 | 0.214      | 0.6438  | 1.10       | 0.734                   | 1.647       |
| <b>Geographic location of residence (reference: Northeast)</b>          |           |       |            |         |            |                         |             |
| Midwest                                                                 | 0.213     | 0.223 | 0.905      | 0.3414  | 1.24       | 0.798                   | 1.916       |
| South                                                                   | 0.483     | 0.183 | 6.980      | 0.0082  | 1.621      | 1.133                   | 2.319       |
| West                                                                    | 0.086     | 0.265 | 0.105      | 0.7456  | 1.09       | 0.649                   | 1.831       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |           |       |            |         |            |                         |             |
| >= \$69,000                                                             | -0.521    | 0.178 | 8.603      | 0.0034  | 0.59       | 0.420                   | 0.841       |
| Not reported                                                            | -0.442    | 0.197 | 5.009      | 0.0252  | 0.64       | 0.437                   | 0.947       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |           |       |            |         |            |                         |             |
| >=\$20                                                                  | -0.273    | 0.153 | 3.197      | 0.0738  | 0.76       | 0.564                   | 1.027       |
| Not reported                                                            | -0.436    | 0.216 | 4.084      | 0.0433  | 0.65       | 0.423                   | 0.987       |
| <b>Survey mode (reference: Through the website)</b>                     |           |       |            |         |            |                         |             |
| Through the call center                                                 | 0.478     | 0.265 | 3.263      | 0.0709  | 1.61       | 0.960                   | 2.710       |
| <b>Survey Respondent (reference: Patient)</b>                           |           |       |            |         |            |                         |             |
| Parent / guardian                                                       | -0.322    | 0.329 | 0.955      | 0.3285  | 0.73       | 0.380                   | 1.382       |
| <b>Allergic to Food (reference: No)</b>                                 |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.227    | 0.165 | 1.888      | 0.1694  | 0.80       | 0.576                   | 1.102       |
| <b>Allergic to Medications (reference: No)</b>                          |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.258    | 0.179 | 2.081      | 0.1492  | 0.77       | 0.545                   | 1.097       |
| <b>Allergic to Latex (reference: No)</b>                                |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.093     | 0.278 | 0.112      | 0.7378  | 1.10       | 0.636                   | 1.894       |
| <b>First EAI prescription (reference: No)</b>                           |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.012    | 0.147 | 0.006      | 0.9367  | 0.99       | 0.740                   | 1.319       |
| <b>Prescriber of the EAI (reference: Other)</b>                         |           |       |            |         |            |                         |             |
| Allergist                                                               | -0.058    | 0.155 | 0.138      | 0.7100  | 0.94       | 0.696                   | 1.280       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |           |       |            |         |            |                         |             |
| Once                                                                    | -0.089    | 0.189 | 0.222      | 0.6379  | 0.92       | 0.631                   | 1.326       |
| >=2 times                                                               | -0.033    | 0.180 | 0.034      | 0.8533  | 0.97       | 0.680                   | 1.375       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.094     | 0.146 | 0.415      | 0.5192  | 1.10       | 0.826                   | 1.461       |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.207     | 0.155 | 1.784      | 0.1817  | 1.23       | 0.908                   | 1.667       |

**Table E11. Binary Logistic Regression Model for Clarity of Instructions (Adults)**

Dependent variable: patient feels the EAI instructions are provided very clearly.

Parameter estimates represent the coefficients.

| N=1298                                                                  | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|-------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                   |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                   |           |       |            |         |            |                         |             |
| Auvi-Q                                                                  | 1.098     | 0.230 | 22.698     | <.0001  | 3.00       | 1.908                   | 4.708       |
| <b>Age group (reference: 18 to 26 years)</b>                            |           |       |            |         |            |                         |             |
| 27 to 36                                                                | 0.167     | 0.316 | 0.279      | 0.5971  | 1.18       | 0.637                   | 2.193       |
| 37 to 46                                                                | -0.061    | 0.291 | 0.044      | 0.8343  | 0.94       | 0.531                   | 1.666       |
| 47 to 56                                                                | 0.360     | 0.288 | 1.572      | 0.2100  | 1.43       | 0.816                   | 2.519       |
| 57 to 64                                                                | -0.099    | 0.291 | 0.116      | 0.7340  | 0.91       | 0.512                   | 1.603       |
| >65                                                                     | -0.088    | 0.335 | 0.069      | 0.7930  | 0.92       | 0.475                   | 1.766       |
| <b>Gender (reference: Male)</b>                                         |           |       |            |         |            |                         |             |
| Female                                                                  | 0.096     | 0.193 | 0.250      | 0.6173  | 1.10       | 0.754                   | 1.607       |
| <b>Education (reference: Elementary to some college + not reported)</b> |           |       |            |         |            |                         |             |
| Associate / Bachelor degree                                             | -0.238    | 0.202 | 1.391      | 0.238   | 0.79       | 0.531                   | 1.170       |
| Master degree and up                                                    | -0.509    | 0.234 | 4.739      | 0.030   | 0.60       | 0.380                   | 0.951       |
| <b>Insurance Type (reference: HMO)</b>                                  |           |       |            |         |            |                         |             |
| PPO                                                                     | 0.043     | 0.229 | 0.035      | 0.8516  | 1.04       | 0.667                   | 1.634       |
| Other                                                                   | 0.198     | 0.251 | 0.622      | 0.4305  | 1.22       | 0.745                   | 1.995       |
| <b>Geographic location of residence (reference: Northeast)</b>          |           |       |            |         |            |                         |             |
| Midwest                                                                 | 0.208     | 0.286 | 0.529      | 0.4669  | 1.23       | 0.703                   | 2.156       |
| South                                                                   | 0.467     | 0.219 | 4.560      | 0.0327  | 1.595      | 1.039                   | 2.447       |
| West                                                                    | 0.153     | 0.319 | 0.231      | 0.6306  | 1.17       | 0.624                   | 2.179       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |           |       |            |         |            |                         |             |
| >= \$69,000                                                             | -0.359    | 0.208 | 2.988      | 0.0839  | 0.70       | 0.465                   | 1.049       |
| Not reported                                                            | -0.361    | 0.236 | 2.334      | 0.1266  | 0.70       | 0.439                   | 1.107       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |           |       |            |         |            |                         |             |
| >=\$20                                                                  | -0.298    | 0.189 | 2.497      | 0.1141  | 0.74       | 0.513                   | 1.074       |
| Not reported                                                            | -0.456    | 0.273 | 2.797      | 0.0945  | 0.63       | 0.371                   | 1.082       |
| <b>Survey mode (reference: Through the website)</b>                     |           |       |            |         |            |                         |             |
| Through the call center                                                 | 0.335     | 0.270 | 1.534      | 0.2156  | 1.40       | 0.823                   | 2.374       |
| <b>Allergic to Food (reference: No)</b>                                 |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.236    | 0.184 | 1.640      | 0.2003  | 0.79       | 0.551                   | 1.133       |
| <b>Allergic to Medications (reference: No)</b>                          |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.031    | 0.207 | 0.022      | 0.8821  | 0.97       | 0.646                   | 1.456       |
| <b>Allergic to Latex (reference: No)</b>                                |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.032     | 0.300 | 0.011      | 0.9162  | 1.03       | 0.573                   | 1.859       |
| <b>First EAI prescription (reference: No)</b>                           |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.026    | 0.176 | 0.022      | 0.8827  | 0.97       | 0.690                   | 1.376       |
| <b>Prescriber of the EAI (reference: Other)</b>                         |           |       |            |         |            |                         |             |
| Allergist                                                               | 0.052     | 0.196 | 0.069      | 0.7928  | 1.05       | 0.717                   | 1.546       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |           |       |            |         |            |                         |             |
| Once                                                                    | -0.231    | 0.257 | 0.808      | 0.3688  | 0.79       | 0.480                   | 1.313       |
| >=2 times                                                               | -0.154    | 0.236 | 0.425      | 0.5144  | 0.86       | 0.539                   | 1.362       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.119     | 0.182 | 0.428      | 0.5130  | 1.13       | 0.789                   | 1.609       |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.016     | 0.196 | 0.006      | 0.9366  | 1.02       | 0.692                   | 1.491       |

**Table E12. Binary Logistic Regression Model for Clarity of Instructions (Children)**

Dependent variable: patient feels the EAI instructions are provided very clearly.

Parameter estimates represent the coefficients.

Five children with missing age-group data were excluded from the model.

Survey mode was removed from this model due to zero number in one of the event variable categories.

| N=697                                                                  | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence |             |
|------------------------------------------------------------------------|-----------|-------|------------|---------|------------|----------------|-------------|
| Independent Variables                                                  |           |       |            |         |            | Lower Limit    | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                  |           |       |            |         |            |                |             |
| Auvi-Q                                                                 | 1.222     | 0.325 | 14.179     | 0.0002  | 3.39       | 1.797          | 6.411       |
| <b>Age (reference: 7-11 years)</b>                                     |           |       |            |         |            |                |             |
| 12-17 years                                                            | 0.063     | 0.246 | 0.066      | 0.7975  | 1.07       | 0.658          | 1.724       |
| <b>Gender (reference: Male)</b>                                        |           |       |            |         |            |                |             |
| Female                                                                 | 0.050     | 0.247 | 0.041      | 0.8397  | 1.05       | 0.648          | 1.704       |
| <b>Insurance Type (reference: HMO)</b>                                 |           |       |            |         |            |                |             |
| PPO                                                                    | 0.426     | 0.300 | 2.018      | 0.1555  | 1.53       | 0.851          | 2.755       |
| Other                                                                  | -0.195    | 0.370 | 0.278      | 0.5983  | 0.82       | 0.398          | 1.700       |
| <b>Geographic location of residence (reference: Northeast)</b>         |           |       |            |         |            |                |             |
| Midwest                                                                | 0.121     | 0.367 | 0.109      | 0.7414  | 1.13       | 0.549          | 2.319       |
| South                                                                  | 0.479     | 0.344 | 1.944      | 0.1632  | 1.615      | 0.823          | 3.169       |
| West                                                                   | -0.169    | 0.490 | 0.119      | 0.7305  | 0.85       | 0.323          | 2.207       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>              |           |       |            |         |            |                |             |
| >= \$69,000                                                            | -0.970    | 0.386 | 6.321      | 0.0119  | 0.38       | 0.178          | 0.808       |
| Not reported                                                           | -0.762    | 0.407 | 3.507      | 0.0611  | 0.47       | 0.210          | 1.036       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                      |           |       |            |         |            |                |             |
| >=\$20                                                                 | -0.362    | 0.272 | 1.764      | 0.1841  | 0.70       | 0.409          | 1.188       |
| Not reported                                                           | -0.501    | 0.368 | 1.848      | 0.1740  | 0.61       | 0.295          | 1.247       |
| <b>Survey Respondent (reference: Patient)</b>                          |           |       |            |         |            |                |             |
| Parent / guardian                                                      | -0.102    | 0.385 | 0.070      | 0.7916  | 0.90       | 0.425          | 1.921       |
| <b>Allergic to Food (reference: No)</b>                                |           |       |            |         |            |                |             |
| Yes                                                                    | -0.535    | 0.437 | 1.495      | 0.2214  | 0.59       | 0.249          | 1.380       |
| <b>Allergic to Medications (reference: No)</b>                         |           |       |            |         |            |                |             |
| Yes                                                                    | -1.043    | 0.354 | 8.674      | 0.0032  | 0.35       | 0.176          | 0.706       |
| <b>Allergic to Latex (reference: No)</b>                               |           |       |            |         |            |                |             |
| Yes                                                                    | 0.119     | 0.816 | 0.021      | 0.8843  | 1.13       | 0.228          | 5.572       |
| <b>First EAI prescription (reference: No)</b>                          |           |       |            |         |            |                |             |
| Yes                                                                    | -0.058    | 0.290 | 0.040      | 0.8413  | 0.94       | 0.534          | 1.666       |
| <b>Prescriber of the EAI (reference: Other)</b>                        |           |       |            |         |            |                |             |
| Allergist                                                              | -0.765    | 0.540 | 2.011      | 0.1562  | 0.47       | 0.162          | 1.340       |
| Pediatrician                                                           | -0.629    | 0.577 | 1.188      | 0.2758  | 0.53       | 0.172          | 1.652       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b> |           |       |            |         |            |                |             |
| Once                                                                   | 0.083     | 0.293 | 0.080      | 0.7775  | 1.09       | 0.612          | 1.928       |
| >=2 times                                                              | 0.103     | 0.296 | 0.120      | 0.7286  | 1.11       | 0.620          | 1.981       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>          |           |       |            |         |            |                |             |
| Yes                                                                    | 0.070     | 0.254 | 0.076      | 0.7823  | 1.07       | 0.652          | 1.765       |
| <b>Other medical conditions: Asthma (reference: No)</b>                |           |       |            |         |            |                |             |
| Yes                                                                    | 0.510     | 0.262 | 3.791      | 0.0515  | 1.67       | 0.997          | 2.781       |

**Table E13. Binary Logistic Regression Model for Receiving Training (Overall)**

Dependent variable: received training on EAI use.

Parameter estimates represent the coefficients.

| N=2000                                                                  | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|-------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                   |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                   |           |       |            |         |            |                         |             |
| Auvi-Q                                                                  | 0.573     | 0.130 | 19.366     | <.0001  | 1.77       | 1.374                   | 2.288       |
| <b>Age group (reference: 7-17 years)</b>                                |           |       |            |         |            |                         |             |
| 18 to 26                                                                | 0.240     | 0.275 | 0.761      | 0.3831  | 1.27       | 0.742                   | 2.178       |
| 27 to 36                                                                | 0.180     | 0.305 | 0.349      | 0.5547  | 1.20       | 0.659                   | 2.174       |
| 37 to 46                                                                | 0.087     | 0.296 | 0.087      | 0.7685  | 1.09       | 0.611                   | 1.948       |
| 47 to 56                                                                | -0.191    | 0.281 | 0.460      | 0.4978  | 0.83       | 0.476                   | 1.434       |
| 57 to 64                                                                | -0.377    | 0.294 | 1.641      | 0.2002  | 0.69       | 0.386                   | 1.221       |
| >65                                                                     | -0.434    | 0.315 | 1.904      | 0.1676  | 0.65       | 0.350                   | 1.200       |
| <b>Gender (reference: Male)</b>                                         |           |       |            |         |            |                         |             |
| Female                                                                  | 0.196     | 0.113 | 2.980      | 0.0843  | 1.22       | 0.974                   | 1.518       |
| <b>Education (reference: Elementary to some college + not reported)</b> |           |       |            |         |            |                         |             |
| Associate / Bachelor degree                                             | -0.469    | 0.142 | 10.881     | 0.001   | 0.63       | 0.473                   | 0.827       |
| Master degree and up                                                    | -0.206    | 0.170 | 1.463      | 0.227   | 0.81       | 0.584                   | 1.136       |
| <b>Insurance Type (reference: HMO)</b>                                  |           |       |            |         |            |                         |             |
| PPO                                                                     | -0.161    | 0.144 | 1.250      | 0.2635  | 0.85       | 0.642                   | 1.129       |
| Other                                                                   | -0.334    | 0.159 | 4.382      | 0.0363  | 0.72       | 0.524                   | 0.979       |
| <b>Geographic location of residence (reference: Northeast)</b>          |           |       |            |         |            |                         |             |
| Midwest                                                                 | 0.086     | 0.160 | 0.288      | 0.5913  | 1.09       | 0.796                   | 1.493       |
| South                                                                   | 0.036     | 0.127 | 0.082      | 0.7748  | 1.037      | 0.808                   | 1.330       |
| West                                                                    | 0.004     | 0.198 | 0.000      | 0.9853  | 1.00       | 0.681                   | 1.479       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |           |       |            |         |            |                         |             |
| >= \$69,000                                                             | -0.173    | 0.130 | 1.764      | 0.1841  | 0.84       | 0.651                   | 1.086       |
| Not reported                                                            | -0.239    | 0.146 | 2.678      | 0.1017  | 0.79       | 0.592                   | 1.048       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |           |       |            |         |            |                         |             |
| >=\$20                                                                  | -0.078    | 0.112 | 0.481      | 0.4879  | 0.93       | 0.742                   | 1.153       |
| Not reported                                                            | 0.074     | 0.172 | 0.186      | 0.6660  | 1.08       | 0.769                   | 1.509       |
| <b>Survey mode (reference: Through the website)</b>                     |           |       |            |         |            |                         |             |
| Through the call center                                                 | 0.084     | 0.169 | 0.245      | 0.6210  | 1.09       | 0.780                   | 1.516       |
| <b>Survey Respondent (reference: Patient)</b>                           |           |       |            |         |            |                         |             |
| Parent / guardian                                                       | 0.115     | 0.251 | 0.210      | 0.6466  | 1.12       | 0.686                   | 1.835       |
| <b>Allergic to Food (reference: No)</b>                                 |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.015     | 0.121 | 0.015      | 0.9023  | 1.02       | 0.801                   | 1.287       |
| <b>Allergic to Medications (reference: No)</b>                          |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.154     | 0.136 | 1.279      | 0.2580  | 1.17       | 0.893                   | 1.524       |
| <b>Allergic to Latex (reference: No)</b>                                |           |       |            |         |            |                         |             |
| Yes                                                                     | -0.049    | 0.201 | 0.059      | 0.8082  | 0.95       | 0.643                   | 1.411       |
| <b>First EAI prescription (reference: No)</b>                           |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.253     | 0.111 | 5.163      | 0.0231  | 1.29       | 1.035                   | 1.601       |
| <b>Prescriber of the EAI (reference: Other)</b>                         |           |       |            |         |            |                         |             |
| Allergist                                                               | 0.740     | 0.116 | 40.508     | <.0001  | 2.10       | 1.669                   | 2.632       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |           |       |            |         |            |                         |             |
| Once                                                                    | 0.082     | 0.143 | 0.326      | 0.5682  | 1.09       | 0.820                   | 1.437       |
| >=2 times                                                               | 0.148     | 0.136 | 1.185      | 0.2763  | 1.16       | 0.888                   | 1.513       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.191     | 0.109 | 3.077      | 0.0794  | 1.21       | 0.978                   | 1.497       |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |           |       |            |         |            |                         |             |
| Yes                                                                     | 0.088     | 0.115 | 0.587      | 0.4436  | 1.09       | 0.872                   | 1.368       |

**Table E14. Binary Logistic Regression Model for Receiving Training (Adults)**

Dependent variable: received training on EAI use.

Parameter estimates represent the coefficients.

| <b>N=1298</b>                                                           | <b>Parameter</b> | <b>SE</b> | <b>Chi-Square</b> | <b>P-value</b> | <b>Odds Ratio</b> | <b>95% Confidence Interval</b> |                    |
|-------------------------------------------------------------------------|------------------|-----------|-------------------|----------------|-------------------|--------------------------------|--------------------|
| <b>Independent Variables</b>                                            |                  |           |                   |                |                   | <b>Lower Limit</b>             | <b>Upper Limit</b> |
| <b>EAI device (reference: EpiPen)</b>                                   |                  |           |                   |                |                   |                                |                    |
| Auvi-Q                                                                  | 0.526            | 0.151     | 12.154            | 0.0005         | 1.69              | 1.259                          | 2.275              |
| <b>Age group (reference: 18 to 26 years)</b>                            |                  |           |                   |                |                   |                                |                    |
| 27 to 36                                                                | -0.075           | 0.233     | 0.103             | 0.7482         | 0.93              | 0.587                          | 1.466              |
| 37 to 46                                                                | -0.162           | 0.222     | 0.530             | 0.4666         | 0.85              | 0.550                          | 1.315              |
| 47 to 56                                                                | -0.465           | 0.206     | 5.077             | 0.0243         | 0.63              | 0.419                          | 0.941              |
| 57 to 64                                                                | -0.629           | 0.221     | 8.129             | 0.0044         | 0.53              | 0.346                          | 0.822              |
| >65                                                                     | -0.746           | 0.250     | 8.943             | 0.0028         | 0.47              | 0.291                          | 0.773              |
| <b>Gender (reference: Male)</b>                                         |                  |           |                   |                |                   |                                |                    |
| Female                                                                  | 0.186            | 0.142     | 1.698             | 0.1926         | 1.20              | 0.911                          | 1.592              |
| <b>Education (reference: Elementary to some college + not reported)</b> |                  |           |                   |                |                   |                                |                    |
| Associate / Bachelor degree                                             | -0.508           | 0.145     | 12.224            | 0.001          | 0.60              | 0.453                          | 0.800              |
| Master degree and up                                                    | -0.237           | 0.178     | 1.765             | 0.184          | 0.79              | 0.557                          | 1.119              |
| <b>Insurance Type (reference: HMO)</b>                                  |                  |           |                   |                |                   |                                |                    |
| PPO                                                                     | -0.157           | 0.177     | 0.791             | 0.3738         | 0.86              | 0.605                          | 1.208              |
| Other                                                                   | -0.237           | 0.187     | 1.604             | 0.2054         | 0.79              | 0.547                          | 1.138              |
| <b>Geographic location of residence (reference: Northeast)</b>          |                  |           |                   |                |                   |                                |                    |
| Midwest                                                                 | 0.012            | 0.197     | 0.004             | 0.9500         | 1.01              | 0.689                          | 1.488              |
| South                                                                   | 0.047            | 0.151     | 0.096             | 0.7564         | 1.048             | 0.780                          | 1.408              |
| West                                                                    | 0.063            | 0.232     | 0.073             | 0.7869         | 1.07              | 0.676                          | 1.678              |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |                  |           |                   |                |                   |                                |                    |
| >= \$69,000                                                             | -0.023           | 0.153     | 0.022             | 0.8829         | 0.98              | 0.724                          | 1.320              |
| Not reported                                                            | -0.281           | 0.173     | 2.637             | 0.1044         | 0.76              | 0.538                          | 1.060              |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |                  |           |                   |                |                   |                                |                    |
| >=\$20                                                                  | 0.016            | 0.136     | 0.013             | 0.9091         | 1.02              | 0.778                          | 1.325              |
| Not reported                                                            | -0.032           | 0.207     | 0.024             | 0.8766         | 0.97              | 0.645                          | 1.454              |
| <b>Survey mode (reference: Through the website)</b>                     |                  |           |                   |                |                   |                                |                    |
| Through the call center                                                 | 0.095            | 0.177     | 0.288             | 0.5914         | 1.10              | 0.778                          | 1.555              |
| <b>Allergic to Food (reference: No)</b>                                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.091            | 0.134     | 0.463             | 0.4964         | 1.10              | 0.842                          | 1.425              |
| <b>Allergic to Medications (reference: No)</b>                          |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.215            | 0.151     | 2.023             | 0.1549         | 1.24              | 0.922                          | 1.665              |
| <b>Allergic to Latex (reference: No)</b>                                |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | -0.131           | 0.213     | 0.378             | 0.5386         | 0.88              | 0.578                          | 1.331              |
| <b>First EAI prescription (reference: No)</b>                           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.206            | 0.129     | 2.534             | 0.1114         | 1.23              | 0.954                          | 1.582              |
| <b>Prescriber of the EAI (reference: Other)</b>                         |                  |           |                   |                |                   |                                |                    |
| Allergist                                                               | 0.820            | 0.145     | 31.824            | <.0001         | 2.27              | 1.708                          | 3.018              |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |                  |           |                   |                |                   |                                |                    |
| Once                                                                    | 0.208            | 0.187     | 1.238             | 0.2659         | 1.23              | 0.853                          | 1.777              |
| >=2 times                                                               | 0.098            | 0.170     | 0.335             | 0.5627         | 1.10              | 0.791                          | 1.540              |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.261            | 0.131     | 3.958             | 0.0466         | 1.30              | 1.004                          | 1.680              |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | -0.055           | 0.142     | 0.152             | 0.6970         | 0.95              | 0.716                          | 1.250              |

**Table E15. Binary Logistic Regression Model for Receiving Training (Children)**

Dependent variable: received training on EAI use.

Parameter estimates represent the coefficients.

Five children with missing age-group data were excluded from the model.

| N=697                                                                  | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|------------------------------------------------------------------------|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                  |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                  |           |       |            |         |            |                         |             |
| Auvi-Q                                                                 | 0.780     | 0.279 | 7.843      | 0.0051  | 2.18       | 1.264                   | 3.767       |
| <b>Age (reference: 7-11 years)</b>                                     |           |       |            |         |            |                         |             |
| 12-17 years                                                            | 0.304     | 0.200 | 2.310      | 0.1285  | 1.36       | 0.916                   | 2.005       |
| <b>Gender (reference: Male)</b>                                        |           |       |            |         |            |                         |             |
| Female                                                                 | 0.291     | 0.202 | 2.071      | 0.1501  | 1.34       | 0.900                   | 1.988       |
| <b>Insurance Type (reference: HMO)</b>                                 |           |       |            |         |            |                         |             |
| PPO                                                                    | -0.190    | 0.265 | 0.515      | 0.4731  | 0.83       | 0.492                   | 1.390       |
| Other                                                                  | -0.539    | 0.326 | 2.724      | 0.0988  | 0.58       | 0.308                   | 1.106       |
| <b>Geographic location of residence (reference: Northeast)</b>         |           |       |            |         |            |                         |             |
| Midwest                                                                | 0.294     | 0.299 | 0.971      | 0.3244  | 1.34       | 0.748                   | 2.409       |
| South                                                                  | -0.016    | 0.248 | 0.004      | 0.9500  | 0.985      | 0.606                   | 1.600       |
| West                                                                   | -0.206    | 0.397 | 0.269      | 0.6038  | 0.81       | 0.374                   | 1.772       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>              |           |       |            |         |            |                         |             |
| >= \$69,000                                                            | -0.756    | 0.292 | 6.713      | 0.0096  | 0.47       | 0.265                   | 0.832       |
| Not reported                                                           | -0.534    | 0.316 | 2.853      | 0.0912  | 0.59       | 0.316                   | 1.089       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                      |           |       |            |         |            |                         |             |
| >=\$20                                                                 | -0.331    | 0.211 | 2.461      | 0.1167  | 0.72       | 0.475                   | 1.086       |
| Not reported                                                           | 0.260     | 0.339 | 0.587      | 0.4436  | 1.30       | 0.667                   | 2.520       |
| <b>Survey Respondent (reference: Patient)</b>                          |           |       |            |         |            |                         |             |
| Parent / guardian                                                      | -0.328    | 0.340 | 0.935      | 0.3335  | 0.72       | 0.370                   | 1.401       |
| <b>Allergic to Food (reference: No)</b>                                |           |       |            |         |            |                         |             |
| Yes                                                                    | -0.415    | 0.338 | 1.513      | 0.2187  | 0.66       | 0.341                   | 1.279       |
| <b>Allergic to Medications (reference: No)</b>                         |           |       |            |         |            |                         |             |
| Yes                                                                    | -0.152    | 0.343 | 0.196      | 0.6579  | 0.86       | 0.439                   | 1.682       |
| <b>Allergic to Latex (reference: No)</b>                               |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.592     | 0.803 | 0.545      | 0.4606  | 1.81       | 0.375                   | 8.722       |
| <b>First EAI prescription (reference: No)</b>                          |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.207     | 0.239 | 0.748      | 0.3871  | 1.23       | 0.769                   | 1.966       |
| <b>Prescriber of the EAI (reference: Other)</b>                        |           |       |            |         |            |                         |             |
| Allergist                                                              | 1.293     | 0.337 | 14.749     | 0.0001  | 3.64       | 1.883                   | 7.048       |
| Pediatrician                                                           | 0.841     | 0.365 | 5.317      | 0.0211  | 2.32       | 1.134                   | 4.739       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b> |           |       |            |         |            |                         |             |
| Once                                                                   | -0.112    | 0.227 | 0.244      | 0.6216  | 0.89       | 0.572                   | 1.396       |
| >=2 times                                                              | 0.360     | 0.250 | 2.078      | 0.1495  | 1.43       | 0.878                   | 2.340       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>          |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.084     | 0.204 | 0.169      | 0.6810  | 1.09       | 0.729                   | 1.622       |
| <b>Other medical conditions: Asthma (reference: No)</b>                |           |       |            |         |            |                         |             |
| Yes                                                                    | 0.340     | 0.207 | 2.693      | 0.1008  | 1.41       | 0.936                   | 2.107       |

**Table E16. Binary Logistic Regression Model for Finding Trainer Helpful (Overall)**

Dependent variable: finding trainer helpful on EAI use

Parameter estimates represent the coefficients.

| N=2000                                                                  |  | Parameter | SE    | Chi-Square | P-value | Odds Ratio | 95% Confidence Interval |             |
|-------------------------------------------------------------------------|--|-----------|-------|------------|---------|------------|-------------------------|-------------|
| Independent Variables                                                   |  |           |       |            |         |            | Lower Limit             | Upper Limit |
| <b>EAI device (reference: EpiPen)</b>                                   |  |           |       |            |         |            |                         |             |
| Auvi-Q                                                                  |  | 0.829     | 0.263 | 9.964      | 0.0016  | 2.29       | 1.369                   | 3.831       |
| <b>Age group (reference: 7-17 years)</b>                                |  |           |       |            |         |            |                         |             |
| 18 to 26                                                                |  | -0.912    | 0.588 | 2.401      | 0.1213  | 0.40       | 0.127                   | 1.273       |
| 27 to 36                                                                |  | -0.285    | 0.674 | 0.179      | 0.6726  | 0.75       | 0.201                   | 2.820       |
| 37 to 46                                                                |  | -0.612    | 0.644 | 0.904      | 0.3418  | 0.54       | 0.153                   | 1.916       |
| 47 to 56                                                                |  | -0.465    | 0.631 | 0.543      | 0.4613  | 0.63       | 0.182                   | 2.164       |
| 57 to 64                                                                |  | -0.404    | 0.652 | 0.384      | 0.5356  | 0.67       | 0.186                   | 2.397       |
| >65                                                                     |  | -0.950    | 0.673 | 1.993      | 0.1580  | 0.39       | 0.103                   | 1.446       |
| <b>Gender (reference: Male)</b>                                         |  |           |       |            |         |            |                         |             |
| Female                                                                  |  | -0.062    | 0.223 | 0.077      | 0.7810  | 0.94       | 0.608                   | 1.454       |
| <b>Education (reference: Elementary to some college + not reported)</b> |  |           |       |            |         |            |                         |             |
| Associate / Bachelor degree                                             |  | -0.033    | 0.264 | 0.016      | 0.900   | 0.97       | 0.577                   | 1.623       |
| Master degree and up                                                    |  | -0.396    | 0.295 | 1.803      | 0.179   | 0.67       | 0.377                   | 1.200       |
| <b>Insurance Type (reference: HMO)</b>                                  |  |           |       |            |         |            |                         |             |
| PPO                                                                     |  | -0.275    | 0.276 | 0.991      | 0.3195  | 0.76       | 0.442                   | 1.305       |
| Other                                                                   |  | 0.273     | 0.322 | 0.717      | 0.3972  | 1.31       | 0.698                   | 2.471       |
| <b>Geographic location of residence (reference: Northeast)</b>          |  |           |       |            |         |            |                         |             |
| Midwest                                                                 |  | -0.453    | 0.274 | 2.734      | 0.0982  | 0.64       | 0.372                   | 1.088       |
| South                                                                   |  | 0.254     | 0.263 | 0.932      | 0.3342  | 1.288      | 0.770                   | 2.155       |
| West                                                                    |  | 0.475     | 0.449 | 1.122      | 0.2895  | 1.61       | 0.668                   | 3.873       |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |  |           |       |            |         |            |                         |             |
| >= \$69,000                                                             |  | -0.246    | 0.249 | 0.976      | 0.3232  | 0.78       | 0.480                   | 1.274       |
| Not reported                                                            |  | -0.071    | 0.291 | 0.060      | 0.8073  | 0.93       | 0.527                   | 1.647       |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |  |           |       |            |         |            |                         |             |
| >=\$20                                                                  |  | -0.323    | 0.222 | 2.122      | 0.1452  | 0.72       | 0.469                   | 1.118       |
| Not reported                                                            |  | -0.185    | 0.344 | 0.290      | 0.5903  | 0.83       | 0.423                   | 1.631       |
| <b>Survey mode (reference: Through the website)</b>                     |  |           |       |            |         |            |                         |             |
| Through the call center                                                 |  | 0.286     | 0.335 | 0.728      | 0.3935  | 1.33       | 0.690                   | 2.564       |
| <b>Survey Respondent (reference: Patient)</b>                           |  |           |       |            |         |            |                         |             |
| Parent / guardian                                                       |  | -0.081    | 0.587 | 0.019      | 0.8907  | 0.92       | 0.292                   | 2.914       |
| <b>Allergic to Food (reference: No)</b>                                 |  |           |       |            |         |            |                         |             |
| Yes                                                                     |  | 0.503     | 0.230 | 4.779      | 0.0288  | 1.65       | 1.053                   | 2.596       |
| <b>Allergic to Medications (reference: No)</b>                          |  |           |       |            |         |            |                         |             |
| Yes                                                                     |  | 0.045     | 0.261 | 0.029      | 0.8642  | 1.05       | 0.627                   | 1.744       |
| <b>Allergic to Latex (reference: No)</b>                                |  |           |       |            |         |            |                         |             |
| Yes                                                                     |  | -0.414    | 0.347 | 1.427      | 0.2322  | 0.66       | 0.335                   | 1.304       |
| <b>First EAI prescription (reference: No)</b>                           |  |           |       |            |         |            |                         |             |
| Yes                                                                     |  | 0.303     | 0.221 | 1.891      | 0.1691  | 1.35       | 0.879                   | 2.086       |
| <b>Prescriber of the EAI (reference: Other)</b>                         |  |           |       |            |         |            |                         |             |
| Allergist                                                               |  | 0.180     | 0.233 | 0.601      | 0.4384  | 1.20       | 0.759                   | 1.891       |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |  |           |       |            |         |            |                         |             |
| Once                                                                    |  | 0.929     | 0.316 | 8.628      | 0.0033  | 2.53       | 1.362                   | 4.706       |
| >=2 times                                                               |  | 0.082     | 0.250 | 0.108      | 0.7430  | 1.09       | 0.665                   | 1.772       |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |  |           |       |            |         |            |                         |             |
| Yes                                                                     |  | 0.078     | 0.214 | 0.132      | 0.7163  | 1.08       | 0.710                   | 1.645       |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |  |           |       |            |         |            |                         |             |
| Yes                                                                     |  | 0.515     | 0.248 | 4.315      | 0.0378  | 1.67       | 1.030                   | 2.722       |

**Table E17. Binary Logistic Regression Model for Finding Trainer Helpful (Adults)**

Dependent variable: finding trainer helpful on EAI use

Parameter estimates represent the coefficients.

| <b>N=1298</b>                                                           | <b>Parameter</b> | <b>SE</b> | <b>Chi-Square</b> | <b>P-value</b> | <b>Odds Ratio</b> | <b>95% Confidence Interval</b> |                    |
|-------------------------------------------------------------------------|------------------|-----------|-------------------|----------------|-------------------|--------------------------------|--------------------|
| <b>Independent Variables</b>                                            |                  |           |                   |                |                   | <b>Lower Limit</b>             | <b>Upper Limit</b> |
| <b>EAI device (reference: EpiPen)</b>                                   |                  |           |                   |                |                   |                                |                    |
| Auvi-Q                                                                  | 0.736            | 0.283     | 6.758             | 0.0093         | 2.09              | 1.199                          | 3.637              |
| <b>Age group (reference: 18 to 26 years)</b>                            |                  |           |                   |                |                   |                                |                    |
| 27 to 36                                                                | 0.603            | 0.421     | 2.049             | 0.1523         | 1.83              | 0.800                          | 4.174              |
| 37 to 46                                                                | 0.273            | 0.376     | 0.528             | 0.4675         | 1.31              | 0.629                          | 2.742              |
| 47 to 56                                                                | 0.388            | 0.356     | 1.186             | 0.2761         | 1.47              | 0.733                          | 2.963              |
| 57 to 64                                                                | 0.452            | 0.386     | 1.372             | 0.2414         | 1.57              | 0.738                          | 3.348              |
| >65                                                                     | -0.098           | 0.422     | 0.054             | 0.8157         | 0.91              | 0.396                          | 2.073              |
| <b>Gender (reference: Male)</b>                                         |                  |           |                   |                |                   |                                |                    |
| Female                                                                  | -0.149           | 0.252     | 0.349             | 0.5549         | 0.86              | 0.526                          | 1.411              |
| <b>Education (reference: Elementary to some college + not reported)</b> |                  |           |                   |                |                   |                                |                    |
| Associate / Bachelor degree                                             | -0.065           | 0.265     | 0.060             | 0.807          | 0.94              | 0.558                          | 1.575              |
| Master degree and up                                                    | -0.463           | 0.299     | 2.397             | 0.122          | 0.63              | 0.350                          | 1.131              |
| <b>Insurance Type (reference: HMO)</b>                                  |                  |           |                   |                |                   |                                |                    |
| PPO                                                                     | -0.334           | 0.309     | 1.168             | 0.2799         | 0.72              | 0.391                          | 1.312              |
| Other                                                                   | 0.248            | 0.347     | 0.512             | 0.4745         | 1.28              | 0.650                          | 2.527              |
| <b>Geographic location of residence (reference: Northeast)</b>          |                  |           |                   |                |                   |                                |                    |
| Midwest                                                                 | -0.163           | 0.324     | 0.255             | 0.6138         | 0.85              | 0.450                          | 1.601              |
| South                                                                   | 0.366            | 0.283     | 1.677             | 0.1954         | 1.442             | 0.829                          | 2.509              |
| West                                                                    | 0.399            | 0.455     | 0.768             | 0.3807         | 1.49              | 0.611                          | 3.634              |
| <b>Annual household income (reference: &lt;\$69,000 )</b>               |                  |           |                   |                |                   |                                |                    |
| >= \$69,000                                                             | 0.000            | 0.266     | 0.000             | 0.9994         | 1.00              | 0.593                          | 1.686              |
| Not reported                                                            | -0.029           | 0.306     | 0.009             | 0.9238         | 0.97              | 0.534                          | 1.768              |
| <b>Out of pocket costs (reference: &lt;\$20 )</b>                       |                  |           |                   |                |                   |                                |                    |
| >=\$20                                                                  | -0.278           | 0.241     | 1.330             | 0.2488         | 0.76              | 0.472                          | 1.214              |
| Not reported                                                            | -0.140           | 0.374     | 0.139             | 0.7092         | 0.87              | 0.418                          | 1.811              |
| <b>Survey mode (reference: Through the website)</b>                     |                  |           |                   |                |                   |                                |                    |
| Through the call center                                                 | 0.237            | 0.338     | 0.493             | 0.4825         | 1.27              | 0.654                          | 2.458              |
| <b>Allergic to Food (reference: No)</b>                                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.493            | 0.243     | 4.123             | 0.0423         | 1.64              | 1.017                          | 2.634              |
| <b>Allergic to Medications (reference: No)</b>                          |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.060            | 0.272     | 0.049             | 0.8250         | 1.06              | 0.624                          | 1.808              |
| <b>Allergic to Latex (reference: No)</b>                                |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | -0.334           | 0.365     | 0.836             | 0.3607         | 0.72              | 0.350                          | 1.465              |
| <b>First EAI prescription (reference: No)</b>                           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.213            | 0.234     | 0.834             | 0.3613         | 1.24              | 0.783                          | 1.957              |
| <b>Prescriber of the EAI (reference: Other)</b>                         |                  |           |                   |                |                   |                                |                    |
| Allergist                                                               | 0.063            | 0.255     | 0.061             | 0.8052         | 1.07              | 0.646                          | 1.755              |
| <b>Number of anaphylaxis episodes experienced (reference: 0 times)</b>  |                  |           |                   |                |                   |                                |                    |
| Once                                                                    | 0.982            | 0.350     | 7.878             | 0.0050         | 2.67              | 1.345                          | 5.295              |
| >=2 times                                                               | 0.147            | 0.273     | 0.288             | 0.5915         | 1.16              | 0.678                          | 1.977              |
| <b>Concomitant medication: Antihistamines (reference: No)</b>           |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | -0.022           | 0.233     | 0.009             | 0.9246         | 0.98              | 0.619                          | 1.545              |
| <b>Other medical conditions: Asthma (reference: No)</b>                 |                  |           |                   |                |                   |                                |                    |
| Yes                                                                     | 0.552            | 0.275     | 4.024             | 0.0449         | 1.74              | 1.013                          | 2.979              |

**Table E18. Location of Device Storage When EAI Was Not Carried All the Time During Previous 7 Days**

| Location, n (%)       | Children                        |                                | Adults                          |                                 |
|-----------------------|---------------------------------|--------------------------------|---------------------------------|---------------------------------|
|                       | Auvi-Q<br>(n=322 <sup>a</sup> ) | EpiPen<br>(n=72 <sup>a</sup> ) | Auvi-Q<br>(n=181 <sup>a</sup> ) | EpiPen<br>(n=421 <sup>a</sup> ) |
| School nurse's office | 232 (72.0)                      | 45 (62.5)                      | 5 (2.8)                         | 8 (1.9)                         |
| School locker         | 45 (14.0)                       | 5 (6.9)                        | 0 (0)                           | 6 (1.4)                         |
| Car                   | 48 (14.9)                       | 17 (23.6)                      | 38 (21.0)                       | 111 (26.4)                      |
| Home                  | 201 (62.4)                      | 46 (63.9)                      | 120 (66.3)                      | 297 (70.5)                      |
| Work office           | 4 (1.2 <sup>b</sup> )           | 4 (5.6 <sup>b</sup> )          | 33 (18.2)                       | 65 (15.4)                       |
| Other place           | 91 (28.3)                       | 19 (26.4)                      | 43 (23.8)                       | 106 (25.2)                      |

<sup>a</sup>N value indicates number of patients that did not carry their device all the time.

<sup>b</sup> $P < .05$  between Auvi-Q and EpiPen cohorts.

EAI, epinephrine auto-injector.

**Survey question:** During the last 7 days, if you did not carry your device all the time when you were awake, defined as being within arm's reach in all 7 days, where did you keep the device (select all choices that apply)?