Table I-14. Strength of applicability for final health outcomes for older versus newer antiepileptic drugs

| Outcome | Older AED | Newer AEDs | Strength of Applicability | Conclusion With Description of Applicability |
| --- | --- | --- | --- | --- |
| Time to first seizure | Carbamazepine | Gabapentin  Lamotrigine  Oxcarbazepine  Topiramate  Vigabatrin | Moderate | Compared with carbamazepine, newer antiepileptic drugs did not increase the time to first seizure. Overall applicability is limited because all of the trials included in the evaluation were conducted in the Europe and multiple antiepileptic drugs are compared to carbamazepine. |
| Time to first seizure | Phenytoin | Lamotrigine  Topiramate | Moderate | Compared with phenytoin, newer antiepileptic drugs did not increase the time to first seizure. Overall applicability is limited because multiple newer antiepileptic drugs were compared to phenytoin and because only one of the trials included in the evaluation was designed to evaluate time to first seizure as a primary efficacy endpoint. |
| Time to first seizure | Valproic Acid | Lamotrigine  Topiramate | Moderate | Compared with valproic acid, newer antiepileptic drugs did not increase the time to first seizure. Overall applicability is limited because one of the trials included in the analysis was conducted in children between the ages of 6 and 16 years and multiple antiepileptic durgs were compared to valproic acid. |
| Change from baseline in seizure frequency | Carbamazepine | Oxcarbazepine | Moderate | Compared with carbamazepine, oxcarbazepine did not decrease the number of seizures from baseline. Overall applicability is limited because the trial was conducted in cites in Denmark, Finland, Norway and Sweden. |
| Change from baseline in seizure frequency | Phenytoin | Oxcarbazepine | Low | There was not enough data from the trials included to evaluate the change from baseline in seizure frequency oxcarbazepine when was compared to phenytoin. Overall applicability is limited by the lack of reported data. |
| Change from baseline in seizure frequency | Valproic Acid | Oxcarbazepine | Low | There was not enough data from the trials included to evaluate the change from baseline in seizure frequency when oxcarbazepine was compared to valproic acid. Overall applicability is limited by lack of reported data and because the only trial included in the evaluation was conducted at centers in Belgium, Brazil, France, Germany, the Netherlands and South Africa. |
| 12 Month  Seizure Remission | Carbamazepine | Gabapentin  Lamotrigine  Oxcarbazepine  Topiramate  Vigabatrin | Moderate | Compared with carbamazepine, newer antiepileptic drugs did not increase 12 month seizure remission. Overall applicability was limited because the trials included in the analysis were conducted in the United Kingdom, Denmark, Finland, Israel, France, South Africa, Spain, Switzerland and Australia and multiple newer antiepileptic drugs were compared to carbamazepine. |

| Table I-14. Strength of applicability for final health outcomes for older versus newer antiepileptic drugs (continued) | | | | | |
| --- | --- | --- | --- | --- | --- |
| Outcome | Older AED | Newer AEDs | Strength of Applicability | Conclusion With Description of Applicability |
| 12 Month  Seizure Remission | Valproic Acid | Lamotrigine  Topiramate | Moderate | Compared with valproic acid, newer antiepileptic drugs did not increase 12 month seizure remission. Overall applicability is limited because the trial evaluating 12 month seizure remission was conducted in the United Kingdom and multiple newer antiepileptic drugs were compared to valproic acid. |
| 24 Month Seizure Remission | Carbamazepine | Gabapentin  Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with carbamazepine, newer antiepileptic drugs did not increase 12 month seizure remission. Overall applicability is limited because the trial evaluating 12 month seizure remission was conducted in the United Kingdom and multiple newer antiepileptic drugs were compared to carbamazepine. |
| 24 Month Seizure Remission | Valproic Acid | Lamotrigine  Topirmate | Moderate | Compared with valproic acid, newer antiepileptic drugs did not increase 12-month seizure remission. Overall applicability is limited because the trial evaluating 12 month seizure remission was conducted in the United Kingdom and multiple newer antiepileptic drugs were compared to valproic acid. |
| Seizure freedom | Carbamazepine | Gabapentin  Lamotrigine  Oxcarbazepine  Topiramate  Vigabatrin Levetiracetam | Moderate | Compared with carbamazepine, newer antiepileptic drugs did not increase seizure freedom. Overall applicability is limited because multiple newer antiepileptic drugs were compared to carbamazepine and the majority of the trials included were conducted in Europe and Scandinavia. |
| Seizure freedom | Carbamazepine Controlled or Sustained Release | Lamotrigine  Levetiracetam | Low | Compared with controlled or sustained release carbamazepine, newer antiepileptic drugs did not increase seizure freedom. Overall applicability is limited because multiple newer antiepileptic drugs are compared to controlled or sustained release carbamazepine. Applicability to a United States population is limited because the trials included in the analysis were conducted in Scandinavia, Europe and South Africa. Applicability is also limited to a pediatric and adult population because one of the trials included in the analysis was conducted in patients 65 years of age or older. |
| Seizure freedom | Phenytoin | Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with pheyntoin, newer antiepileptic drugs do not increase seizure freedom. Overall applicability is limited because the majority of the studies included in the study were conducted in Europe and South Africa and multiple newer antiepileptic drugs were compared to phenytoin. |
| Seizure freedom | Valproic Acid | Lamotrigine  Oxcarbazepine  Topiramate | Moderate | Compared with valproic acid, newer antiepileptic drugs do not increase seizure freedom. Overall applicability is limited because half of the studies included in the evaluation were conducted outside of the United States in China and Europe and multiple newer antiepileptic drugs were compared to valproic acid |

AED = antiepileptic drug