Proposed Changes to Existing Measures for HEDIS® 2020: Use of High-Risk Medications in the Elderly (DAE) and Potentially Harmful Drug-Disease Interactions in the Elderly (DDE)

NCQA seeks comments on proposed changes for two HEDIS measures that assess potentially inappropriate medication use in the elderly. These measures are based on recommendations in the American Geriatrics Society Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. The proposed changes to the medications included in these measures are to align with updates to the Beers Criteria that were published in January 2019. Below is a summary of the proposed changes for each measure.

- **Use of High-Risk Medications in the Elderly (DAE):**
  - Update medications to align with recommendations in the updated AGS Beers Criteria.
  - Refer to the measure specifications for proposed changes.
  - Retire the first rate, which assesses one dispensing event of a high-risk medication (Numerator 1).
    - The second rate (Numerator 2) is a better assessment of the riskier, more long-term use of high-risk medications among older adults. It also allows organizations to address potentially inappropriate medication use after one dispensing event and work to prevent further dispensing, to improve on the remaining rate.
    - This change also aligns the measure with the Pharmacy Quality Alliance’s Use of High Risk Medications measure, which requires dispensing two prescriptions of the same high-risk medication to count toward the numerator.

- **Potentially Harmful Drug-Disease Interactions in the Elderly (DDE):**
  - Update medications to align with recommendations in the updated AGS Beers Criteria.
  - Refer to the measure specifications for proposed changes.
  - Apply an exclusion to the History of Falls rate for members with major depressive disorder.
    - The AGS Beers Criteria recommend avoiding SNRIs for people with a history of falls, and avoiding nearly all antidepressants (SSRIs, tricyclics, SNRIs) is now recommended. We propose excluding members with a diagnosis of major depressive disorder from the rate because the benefits of using antidepressants for these individuals may outweigh the risks.

Supporting documents include the draft measure specifications, evidence workup and performance data.

NCQA acknowledges the contributions of the Geriatric Measurement Advisory Panel

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Use of High-Risk Medications in the Elderly (DAE)

**SUMMARY OF CHANGES TO HEDIS 2020**

- Removed first rate assessing one dispensing event for a high-risk medication (formerly Numerator 1).
- Updated the medication tables to include ‘medication lists’ column to allow for digital measure functionality (medications are grouped into medication lists based on programming requirements).
- Added Pyrilamine to the description of “Anticholinergics, first-generation antihistamines,” Methscopolamine to the description of “Antispasmodics” and Glimepiride to the description of “Endocrine system, sulfonylureas, long-duration.”
- Removed Ticlopidine from the description of “Antithrombotics” and Pentazocine from the description of “Pain medications, other.”
- Added a Note to indicate that denied claims are not included when assessing the numerator.

**Description**

- The percentage of Medicare members 66 years of age and older who had at least one dispensing event for a high-risk medication.

The percentage of Medicare members 66 years of age and older who had at least two dispensing events for the same high-risk medication.

For both rates, **Note**: A lower rate indicates better performance.

**Eligible Population**

**Note**: Members in hospice are excluded from the eligible population. Refer to General Guideline 17: Members in Hospice.

<table>
<thead>
<tr>
<th>Product line</th>
<th>Medicare.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>66 years and older as of December 31 of the measurement year.</td>
</tr>
<tr>
<td>Continuous enrollment</td>
<td>The measurement year.</td>
</tr>
<tr>
<td>Allowable gap</td>
<td>No more than one gap in enrollment of up to 45 days during the measurement year.</td>
</tr>
<tr>
<td>Anchor date</td>
<td>Enrolled as of December 31 of the measurement year.</td>
</tr>
<tr>
<td>Benefits</td>
<td>Medical and pharmacy.</td>
</tr>
<tr>
<td>Event/diagnosis</td>
<td>None.</td>
</tr>
</tbody>
</table>
Administrative Specification

Denominator
The eligible population.

Numerator 1
Members who received at least one dispensing event for a high-risk medication during the measurement year.

Numerator 2
Members who received at least two dispensing events for the same high-risk medication during the measurement year.

Follow the instructions for each medication group table below (high-risk medications, high-risk medications with days supply criteria, high-risk medications with average daily dose criteria) to identify numerator compliance. If a member meets criteria for at least one of the following tables medication groups, they are numerator compliant for Numerator 2. Include members who meet criteria for more than one table medication group only once in the numerator.

High-risk medications
Identify Members with two or more dispensing events (any days supply) for the same high-risk medication on different dates of service during the measurement year are numerator compliant for a medication in the High-Risk Medications List. The dispensing events must be for the same drug as identified by the Drug ID field in the Medication List Directory of NDC codes.

The High-Risk Medications table includes a Medication Lists column that identifies the same high-risk medication by grouping them on the same row. For example, if on different dates of service during the measurement year a member has a dispensing event from the Chlorpheniramine Medications List and a dispensing event from the Atropine Chlorpheniramine Scopolamine Medications List, this is considered two dispensing events for the same medication and the member is numerator compliant.

High-Risk Medications

<table>
<thead>
<tr>
<th>Description</th>
<th>Medication</th>
<th>Medication Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticholinergics, first-generation antihistamines</td>
<td>• Brompheniramine</td>
<td>• Brompheniramine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Carbinoxamine</td>
<td>• Carbinoxamine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Chlorpheniramine</td>
<td>• Chlorpheniramine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Clemastine</td>
<td>• Clemastine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Cyproheptadine</td>
<td>• Cyproheptadine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Dexamfetamine</td>
<td>• Dexamfetamine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Dexchlorpheniramine</td>
<td>• Dexchlorpheniramine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Diphenhydramine (oral)</td>
<td>• Diphenhydramine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Dimenhydrinate</td>
<td>• Dimenhydrinate Medications List</td>
</tr>
<tr>
<td></td>
<td>• Doxylamine</td>
<td>• Doxylamine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Hydroxyzine</td>
<td>• Hydroxyzine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Meclizine</td>
<td>• Meclizine Medications List</td>
</tr>
<tr>
<td></td>
<td>• Promethazine</td>
<td>• Promethazine Medications List</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Description</th>
<th>Medication</th>
<th>Medication Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticholinergics, anti-</td>
<td>Pyrilamine</td>
<td>Pyrilamine Medications List</td>
</tr>
<tr>
<td>Parkinson agents</td>
<td>Triprolidine</td>
<td>Triprolidine Medications List</td>
</tr>
<tr>
<td></td>
<td>Benztrapine (oral)</td>
<td>Benztrapine Medications List</td>
</tr>
<tr>
<td></td>
<td>Trihexyphenidyl</td>
<td>Trihexyphenidyl Medications List</td>
</tr>
<tr>
<td></td>
<td>Atropine (exclude ophthalmic)</td>
<td>Atropine Medications List</td>
</tr>
<tr>
<td></td>
<td>Atropine Chlorpheniramine Scopolamine</td>
<td>Atropine Medications List</td>
</tr>
<tr>
<td></td>
<td>Atropine Hyoscyamine Phenobarbital</td>
<td>Atropine Medications List</td>
</tr>
<tr>
<td></td>
<td>Atropine Hyoscyamine Scopolamine</td>
<td>Atropine Hyoscyamine Scopolamine Medications List</td>
</tr>
<tr>
<td></td>
<td>Belladonna alkaloids</td>
<td>Belladonna</td>
</tr>
<tr>
<td></td>
<td>Chlordiazepoxide-Clidinium</td>
<td>Chlordiazepoxide-Clidinium Medications List</td>
</tr>
<tr>
<td></td>
<td>Dicyclomine</td>
<td>Dicyclomine Medications List</td>
</tr>
<tr>
<td></td>
<td>Hyoscyamine</td>
<td>Hyoscyamine Medications List</td>
</tr>
<tr>
<td></td>
<td>Atropine Chlorpheniramine Scopolamine</td>
<td>Atropine Medications List</td>
</tr>
<tr>
<td></td>
<td>Atropine Hyoscyamine Phenobarbital</td>
<td>Atropine Hyoscyamine Scopolamine Medications List</td>
</tr>
<tr>
<td></td>
<td>Atropine Hyoscyamine Scopolamine</td>
<td>Atropine Hyoscyamine Scopolamine Medications List</td>
</tr>
<tr>
<td></td>
<td>Methscopolamine</td>
<td>Methscopolamine Medications List</td>
</tr>
<tr>
<td></td>
<td>Propantheline</td>
<td>Propantheline Medications List</td>
</tr>
<tr>
<td></td>
<td>Scopolamine</td>
<td>Scopolamine Medications List</td>
</tr>
<tr>
<td></td>
<td>Dipyridamole, oral short-acting</td>
<td>Dipyridamole Medications List</td>
</tr>
<tr>
<td></td>
<td>(does not apply to the extended-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>release combination with aspirin)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ticlopidine</td>
<td>Ticlopidine</td>
</tr>
<tr>
<td></td>
<td>Guanfacine</td>
<td>Guanfacine Medications List</td>
</tr>
<tr>
<td>Cardiovascular, alpha</td>
<td>Methyldopa</td>
<td>Methyldopa Medications List</td>
</tr>
<tr>
<td>agonists, central</td>
<td>Disopyramide</td>
<td>Disopyramide Medications List</td>
</tr>
<tr>
<td>Cardiovascular, other</td>
<td>Nifedipine, immediate release</td>
<td>Nifedipine Medications List</td>
</tr>
<tr>
<td></td>
<td>Amitriptyline</td>
<td>Amitriptyline Medications List</td>
</tr>
<tr>
<td>Central nervous system,</td>
<td>Clomipramine</td>
<td>Clomipramine Medications List</td>
</tr>
<tr>
<td>antidepressants</td>
<td>Amoxapine</td>
<td>Amoxapine Medications List</td>
</tr>
<tr>
<td></td>
<td>Desipramine</td>
<td>Desipramine Medications List</td>
</tr>
<tr>
<td>Description</td>
<td>Medication</td>
<td>Medication Lists</td>
</tr>
<tr>
<td>-------------</td>
<td>------------</td>
<td>------------------</td>
</tr>
<tr>
<td>• Imipramine</td>
<td>• Imipramine Medications List</td>
<td></td>
</tr>
<tr>
<td>• Trimipramine</td>
<td>• Trimipramine Medications List</td>
<td></td>
</tr>
<tr>
<td>• Nortriptyline</td>
<td>• Nortriptyline Medications List</td>
<td></td>
</tr>
<tr>
<td>• Paroxetine</td>
<td>• Paroxetine Medications List</td>
<td></td>
</tr>
<tr>
<td>• Protriptyline</td>
<td>• Protriptyline Medications List</td>
<td></td>
</tr>
<tr>
<td>• Amobarbital</td>
<td>• Amobarbital Medications List</td>
<td></td>
</tr>
</tbody>
</table>

Central nervous system, barbiturates
| • Butabarbital | • Butabarbital Medications List |
| • Butalbital | • Butalbital Medications List |
| • Pentobarbital | • Pentobarbital Medications List |
| • Phenobarbital | • Phenobarbital Medications List |
| • Secobarbital | • Secobarbital Medications List |
| • Ergoloid Mesylates | • Ergoloid Mesylates Medications List |

Central nervous system, vasodilators
| • Isoxsuprine | • Isoxsuprine Medications List |
| • Meprobamate | • Meprobamate Medications List |

Central nervous system, other
| • Conjugated estrogen | • Conjugated Estrogens Medications List |

Endocrine system, estrogens with or without progestins; include only oral and topical patch products
| • Esterified estrogen | • Esterified Estrogens Medications List |
| • Estradiol | • Estradiol Medications List |
| • Estropipate | • Estropipate Medications List |

Endocrine system, sulfonylureas, long-duration
| • Chlorpropamide | • Chlorpropamide Medications List |
| • Glimepiride | • Glimepiride Medications List |
| • Glyburide | • Glyburide Medications List |
| • Desiccated thyroid | • Desiccated thyroid Medications List |

Endocrine system, other
| • Megestrol | • Megestrol Medications List |
| • Carisoprodol | • Carisoprodol Medications List |

Pain medications, skeletal muscle relaxants
| • Chlorzoxazone | • Chlorzoxazone Medications List |
| • Cyclobenzaprine | • Cyclobenzaprine Medications List |
| • Metaxalone | • Metaxalone Medications List |
| • Methocarbamol | • Methocarbamol Medications List |
| • Orphenadrine | • Orphenadrine Medications List |
| • Indomethacin | • Indomethacin Medications List |

Pain medications, other
| • Ketorolac, includes parenteral | • Ketorolac Medications List |
| • Meperidine | • Meperidine Medications List |
| | • Meperidine Promethazine Medications List |
| • Pentazocine | • Pentazocine |
**High-risk medications with days supply criteria**

For each member identify all dispensing events during the measurement year for medications in the High-Risk Anti-Infectives Medications List and the Nonbenzodiazepine Hypnotics Medications List. Identify members with two or more dispensing events on different dates of service for medications in the same medication class (as identified in the “Description” column). For example, a prescription for zolpidem and a prescription for zaleplon are considered two dispensing events for medications in the same medication class (these drugs share the same description: nonbenzodiazepine hypnotics).

Sum the days supply for prescriptions in the same medication class. Identify members with two or more dispensing events for medications of the same medication class where the summed days supply exceeds the days supply criteria listed for the medication.

For medications dispensed during the measurement year sum the days supply and include any days supply that extends beyond December 31 of the measurement year. For example, a prescription of a 90-days supply dispensed on December 1 of the measurement year counts as a 90-days supply.

Separately for each medication list, calculate days supply for all dispensing events. Sum the days supply and include any days supply that extends beyond December 31 of the measurement year. For example, a prescription of a 90-days supply dispensed on December 1 of the measurement year counts as a 90-days supply.

Members who meet both of the following for the same medication list are numerator compliant:

- Two or more dispensing events on different dates of service.
- Summed days supply exceeds the days supply criteria.

Members only need to meet these criteria for one of the medication lists.

**Note:** The intent is to identify all members who had multiple dispensing events where the summed days supply exceeds the days supply criteria; there is no requirement that each dispensing event exceed the days supply criteria.

### High-Risk Medications With Days Supply Criteria

<table>
<thead>
<tr>
<th>Description</th>
<th>Medication</th>
<th>Days Supply Criteria</th>
<th>Medication Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-Infectives, other</td>
<td>Nitrofurantoin</td>
<td>&gt;90 days</td>
<td>• High-Risk Anti-Infectives Medications List</td>
</tr>
<tr>
<td></td>
<td>Nitrofurantoin macrocrystals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nitrofurantoin macrocrystals-monohydrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonbenzodiazepine hypnotics</td>
<td>Eszopiclone</td>
<td>&gt;90 days</td>
<td>• Nonbenzodiazepine Hypnotics Medications List</td>
</tr>
<tr>
<td></td>
<td>Zaleplon</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zolpidem</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**High-risk medications with average daily dose criteria**

For each member, identify all dispensing events during the measurement year for medications in the High-Risk Medications With Average Daily Dose Criteria Medications List where average daily dose exceeds the average daily dose criteria listed for the medication. Identify members with two or more dispensing events on different dates of service that exceed the average daily dose criteria for the same drug as identified by the Drug ID field in the Medication List Directory of NDC codes. Use the medication lists below to identify members with dispensing events for the same drug during the measurement year.
To Calculate average daily dose for each dispensing event. Multiply the quantity of pills dispensed by the dose of each pill and divide by the days supply. For example, a prescription for a 30-days supply of digoxin containing 15 pills, 0.250 mg each pill, has an average daily dose of 0.125 mg.

To calculate average daily dose for elixirs and concentrates, multiply the volume dispensed by daily dose and divide by the days supply.

Do not round when calculating average daily dose.

The High-Risk Medications With Average Daily Dose Criteria table includes a Medication Lists column that identifies the same high-risk medication by grouping them on the same row.

Members who meet both of the following for the same medication (as identified by the medication lists) are numerator compliant:

- Two or more dispensing events on different dates of service.
- Average daily dose for each dispensing event exceeds the average daily dose criteria.

### High-Risk Medications With Average Daily Dose Criteria

<table>
<thead>
<tr>
<th>Description</th>
<th>Medication</th>
<th>Average Daily Dose Criteria</th>
<th>Medication Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha agonists, central</td>
<td>Reserpine</td>
<td>&gt;0.1 mg/day</td>
<td>Reserpine 0.1 mg Medications List Reserpine 0.25 mg Medications List</td>
</tr>
<tr>
<td>Cardiovascular, other</td>
<td>Digoxin</td>
<td>&gt;0.125 mg/day</td>
<td>Digoxin 50 mcg per mL Medications List Digoxin 62.5 mcg Medications List Digoxin 100 mcg per mL Medications List Digoxin 125 mcg Medications List Digoxin 187.5 mcg Medications List Digoxin 250 mcg Medications List Digoxin 250 mcg per mL Medications List</td>
</tr>
<tr>
<td>Tertiary TCAs (as single agent or as part of combination products)</td>
<td>Doxepin</td>
<td>&gt;6 mg/day</td>
<td>Doxepin 3 mg Medications List Doxepin 6 mg Medications List Doxepin 10 mg Medications List Doxepin 10 mg per mL Medications List Doxepin 25 mg Medications List Doxepin 50 mg Medications List Doxepin 75 mg Medications List Doxepin 100 mg Medications List Doxepin 150 mg Medications List</td>
</tr>
</tbody>
</table>

**Note**

- Do not include denied claims when assessing the numerator.
- Supplemental data may not be used for this measure.
Data Elements for Reporting

Organizations that submit HEDIS data to NCQA must provide the following data elements.

Table DAE-3: Data Elements for Use of High-Risk Medications in the Elderly

<table>
<thead>
<tr>
<th></th>
<th>Administrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement year</td>
<td>✓</td>
</tr>
<tr>
<td>Data collection method (AdminISTRATIVE)</td>
<td>✓</td>
</tr>
<tr>
<td>Eligible population</td>
<td>✓</td>
</tr>
<tr>
<td>Numerator events by administrative data</td>
<td>For each of the 2 rates. ✓</td>
</tr>
<tr>
<td>Reported rate</td>
<td>For each of the 2 rates. ✓</td>
</tr>
</tbody>
</table>
**Potentially Harmful Drug-Disease Interactions in the Elderly (DDE)**

**SUMMARY OF CHANGES TO HEDIS 2020**

- Added SNRIs in the Potentially Harmful Drugs—History of Falls Medications table (formerly Potentially Harmful Drugs—Rate 1 Medications).
- Added Pyrilamine to the description of “Anticholinergic agents, antihistamines” and Methscopolamine to the description of “Anticholinergic agents, antispasmodics” in the Potentially Harmful Drugs—Dementia Medications table (formerly Potentially Harmful Drugs—Rate 2 Medications).
- Removed H2 receptor antagonists from the Potentially Harmful Drugs—Dementia Medications table (formerly Potentially Harmful Drugs—Rate 2 Medications).
- Renamed medication tables to reflect associated disease, condition, or health concern instead of Rate 1 and 2.

**Description**

The percentage of Medicare members 65 years of age and older who have evidence of an underlying disease, condition or health concern and who were dispensed an ambulatory prescription for a potentially harmful medication, concurrent with or after the diagnosis.

Report each of the three rates separately and as a total rate.

- A history of falls and a prescription for anticonvulsants, antipsychotics, benzodiazepines, nonbenzodiazepine hypnotics or antidepressants (SSRIs, tricyclic antidepressants and SNRIs).
- Dementia and a prescription for antipsychotics, benzodiazepines, nonbenzodiazepine hypnotics, tricyclic antidepressants, H2 receptor antagonists or anticholinergic agents.
- Chronic kidney disease and prescription for Cox-2 selective NSAIDs or nonaspirin NSAIDs.
- Total rate (the sum of the three numerators divided by the sum of the three denominators).

Members with more than one disease or condition may appear in the measure multiple times (i.e., in each indicator for which they qualify).

**Note:** A lower rate indicates better performance for all rates.

**Definitions**

<table>
<thead>
<tr>
<th>IESD</th>
<th>Index Episode Start Date. The earliest diagnosis, procedure or prescription between January 1 of the year prior to the measurement year and December 1 of the measurement year.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>For an outpatient, observation or ED visit,</em> the IESD is the date of service.</td>
</tr>
<tr>
<td></td>
<td><em>For an inpatient stay,</em> the IESD is the discharge date.</td>
</tr>
<tr>
<td></td>
<td><em>For dispensed prescriptions,</em> the IESD is the dispense date.</td>
</tr>
</tbody>
</table>
Eligible Population

Note: Members in hospice are excluded from the eligible population. Refer to General Guideline 17: Members in Hospice.

<table>
<thead>
<tr>
<th>Product line</th>
<th>Medicare.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>67 years and older as of December 31 of the measurement year.</td>
</tr>
<tr>
<td>Continuous enrollment</td>
<td>The measurement year and the year prior to the measurement year.</td>
</tr>
<tr>
<td>Allowable gap</td>
<td>No more than one gap in enrollment of up to 45 days during each year of continuous enrollment.</td>
</tr>
<tr>
<td>Anchor date</td>
<td>Enrolled as of December 31 of the measurement year.</td>
</tr>
<tr>
<td>Benefit</td>
<td>Medical and pharmacy.</td>
</tr>
<tr>
<td>Event/ diagnosis</td>
<td>Members with at least one disease, condition or procedure in the measurement year or the year prior to the measurement year. Refer to Additional Eligible Population Criteria for each rate.</td>
</tr>
</tbody>
</table>

Administrative Specification

Report each rate separately and as a combined rate. The total rate is the sum of the three numerators divided by the sum of the three denominators.

Rate 1: Drug-Disease Interactions—History of Falls and Anticonvulsants, Antipsychotics, Benzodiazepines, Nonbenzodiazepine Hypnotics or Antidepressants (SSRIs, Tricyclic Antidepressants and SNRIs).

Additional eligible population criteria

An accidental fall or hip fracture* on or between January 1 of the year prior to the measurement year and December 1 of the measurement year.

*Hip fractures are used as a proxy for identifying accidental falls.

Follow the steps below to identify the eligible population.

Step 1

Identify members who had an accidental fall or a hip fracture. Members with any of the following on or between January 1 of the year prior to the measurement year and December 1 of the measurement year meet criteria:

- An accidental fall (Falls Value Set).
- An outpatient visit (Outpatient Value Set), an observation visit (Observation Value Set) or an ED visit (ED Value Set) with a hip fracture (Hip Fractures Value Set).
- An acute or nonacute inpatient discharge with a hip fracture (Hip Fractures Value Set). To identify acute and nonacute inpatient discharges:
  1. Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set).
  2. Identify the discharge date for the stay.

Identify the IESD for each member.

Step 2: Required Exclusions

Exclude members with a diagnosis of psychosis (Psychosis Value Set), schizophrenia, schizoaffective disorder (Schizophrenia Value Set), bipolar disorder (Bipolar Disorder Value Set; Other Bipolar Disorder Value Set), major depressive disorder (Major Depression or Dysthymia Value Set) or seizure disorder (Seizure Disorders Value Set) on or between January 1 of the year prior to the measurement year and December 1 of the measurement year.
**Numerator**  
Dispensed an ambulatory prescription for an anticonvulsant, SSRI or SNRI (Potentially Harmful Drugs—Rate 1 Medications History of Falls Medications List) or antipsychotic, benzodiazepine, nonbenzodiazepine hypnotic or tricyclic antidepressant (Potentially Harmful Drugs—Rate 1 and Rate 2 Medications List History of Falls and Dementia Medications List) on or between the IESD and December 31 of the measurement year.

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### Potentially Harmful Drugs—Rate 1 Medications History of Falls Medications

<table>
<thead>
<tr>
<th>Description</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticonvulsants</strong></td>
<td></td>
</tr>
<tr>
<td>- Carbamazepine</td>
<td>- Fosphenytoin</td>
</tr>
<tr>
<td>- Clobazam</td>
<td>- Phenytoin</td>
</tr>
<tr>
<td>- Divalproex sodium</td>
<td>- Phenobarbital</td>
</tr>
<tr>
<td>- Ethosuximide</td>
<td>- Gabapentin</td>
</tr>
<tr>
<td>- Ethotoin</td>
<td>- Lamotrigine</td>
</tr>
<tr>
<td>- Ezogabine</td>
<td>- Levetiracetam</td>
</tr>
<tr>
<td>- Felbamate</td>
<td>- Methsuximide</td>
</tr>
<tr>
<td></td>
<td>- Oxcarbazepine</td>
</tr>
<tr>
<td><strong>SNRIs</strong></td>
<td></td>
</tr>
<tr>
<td>- Desvenlafaxine</td>
<td>- Venlafaxine</td>
</tr>
<tr>
<td>- Duloxetine</td>
<td></td>
</tr>
<tr>
<td><strong>SSRIs</strong></td>
<td></td>
</tr>
<tr>
<td>- Citalopram</td>
<td>- Fluoxetine</td>
</tr>
<tr>
<td>- Escitalopram</td>
<td>- Paroxetine</td>
</tr>
<tr>
<td></td>
<td>- Fluvoxamine</td>
</tr>
<tr>
<td></td>
<td>- Sertraline</td>
</tr>
</tbody>
</table>

---

### Potentially Harmful Drugs—Rate 1 and Rate 2 Medications History of Falls and Dementia Medications

<table>
<thead>
<tr>
<th>Description</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antipsychotics</strong></td>
<td></td>
</tr>
<tr>
<td>- Aripiprazole</td>
<td>- Fluphenazine</td>
</tr>
<tr>
<td>- Asenapine</td>
<td>- Haloperidol</td>
</tr>
<tr>
<td>- Brexpiprazole</td>
<td>- Iloperidone</td>
</tr>
<tr>
<td>- Cariprazine</td>
<td>- Loxapine</td>
</tr>
<tr>
<td>- Chlorpromazine</td>
<td>- Marsuloxine</td>
</tr>
<tr>
<td>- Clozapine</td>
<td>- Molindone</td>
</tr>
<tr>
<td><strong>Benzodiazepines</strong></td>
<td></td>
</tr>
<tr>
<td>- Alprazolam</td>
<td>- Clorazepate-dipotassium</td>
</tr>
<tr>
<td>- Clordiazepoxide products</td>
<td>- Diazepam</td>
</tr>
<tr>
<td>- Clonazepam</td>
<td>- Flurazepam HCL</td>
</tr>
<tr>
<td></td>
<td>- Lorazepam HCL</td>
</tr>
<tr>
<td><strong>Nonbenzodiazepine hypnotics</strong></td>
<td></td>
</tr>
<tr>
<td>- Eszopiclone</td>
<td>- Zaleplon</td>
</tr>
<tr>
<td></td>
<td>- Zolpidem</td>
</tr>
<tr>
<td><strong>Tricyclic antidepressants</strong></td>
<td></td>
</tr>
<tr>
<td>- Amitriptyline</td>
<td>- Desipramine</td>
</tr>
<tr>
<td>- Amoxapine</td>
<td>- Droxipine (&gt;6 mg)</td>
</tr>
<tr>
<td>- Clomipramine</td>
<td>- Imipramine</td>
</tr>
<tr>
<td></td>
<td>- Nortriptyline</td>
</tr>
<tr>
<td></td>
<td>- Protriptyline</td>
</tr>
<tr>
<td></td>
<td>- Trimipramine</td>
</tr>
</tbody>
</table>
Rate 2: Drug-Disease Interactions—Dementia and Antipsychotics, Benzodiazepines, Nonbenzodiazepine Hypnotics, Tricyclic Antidepressants, \( \text{H}_2 \)-Receptor-Antagonists, or Anticholinergic Agents

**Additional eligible population criteria**

Follow the steps below to identify the eligible population.

**Step 1**
Identify members with a diagnosis of dementia (Dementia Value Set) or a dispensed dementia medication (Dementia Medications List) on or between January 1 of the year prior to the measurement year and December 1 of the measurement year. Identify the IESD for each member.

**Dementia Medications**

<table>
<thead>
<tr>
<th>Description</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholinesterase inhibitors</td>
<td>• Donepezil</td>
</tr>
<tr>
<td></td>
<td>• Galantamine</td>
</tr>
<tr>
<td></td>
<td>• Rivastigmine</td>
</tr>
<tr>
<td>Miscellaneous central nervous system agents</td>
<td>• Memantine</td>
</tr>
</tbody>
</table>

**Step 2: Required exclusions**
Exclude members with a diagnosis of psychosis (Psychosis Value Set), schizophrenia, schizoaffective disorder (Schizophrenia Value Set) or bipolar disorder (Bipolar Disorder Value Set; Other Bipolar Disorder Value Set) on or between January 1 of the year prior to the measurement year and December 1 of the measurement year.

**Numerator**
Dispensed an ambulatory prescription for an antipsychotic, benzodiazepine, nonbenzodiazepine hypnotic or tricyclic antidepressant (Potentially Harmful Drugs—Rate 1 and Rate 2 Medications List History of Falls and Dementia Medications List) or \( \text{H}_2 \)-receptor antagonist, or anticholinergic agent (Potentially Harmful Drugs—Rate 2 Medications List Dementia Medications List) on or between the IESD and December 31 of the measurement year.
### Potentially Harmful Drugs—Rate 2 Medications Dementia Medications

<table>
<thead>
<tr>
<th>Description</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2 receptor antagonists</td>
<td>• Cimetidine</td>
</tr>
<tr>
<td>Anticholinergic agents, antiemetics</td>
<td>• Prochlorperazine</td>
</tr>
<tr>
<td>Anticholinergic agents, antihistamines</td>
<td>• Brompheniramine</td>
</tr>
<tr>
<td>Anticholinergic agents, antispasmodics</td>
<td>• Atropine</td>
</tr>
<tr>
<td>Anticholinergic agents, antimuscarinics (oral)</td>
<td>• Darifenacin</td>
</tr>
<tr>
<td>Anticholinergic agents, anti-Parkinson agents</td>
<td>• Benztropine</td>
</tr>
<tr>
<td>Anticholinergic agents, skeletal muscle relaxants</td>
<td>• Cyclobenzaprine</td>
</tr>
<tr>
<td>Anticholinergic agents, SSRIs</td>
<td>• Paroxetine</td>
</tr>
<tr>
<td>Anticholinergic agents, antiarrhythmic</td>
<td>• Disopyramide</td>
</tr>
</tbody>
</table>

### Rate 3: Drug-Disease Interactions—Chronic Kidney Disease and Cox-2 Selective NSAIDs or Nonaspirin NSAIDs

**Additional eligible population criteria**

Chronic kidney disease as identified by a diagnosis of ESRD (ESRD Value Set), stage 4 chronic kidney disease (CKD Stage 4 Value Set) or kidney transplant (Kidney Transplant Value Set) on or between January 1 of the year prior to the measurement year and December 1 of the measurement year. Identify the IESD for each member.

**Numerator**

Dispensed an ambulatory prescription for a Cox-2 selective NSAID or nonaspirin NSAID (Cox-2 Selective NSAIDs and Nonaspirin NSAIDs Medications List) on or between the IESD and December 31 of the measurement year.

### Cox-2 Selective NSAIDs and Nonaspirin NSAIDs Medications

<table>
<thead>
<tr>
<th>Description</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cox-2 Selective NSAIDs</td>
<td>• Celecoxib</td>
</tr>
<tr>
<td>Nonaspirin NSAIDs</td>
<td>• Diclofenac potassium</td>
</tr>
<tr>
<td></td>
<td>• Diclofenac sodium</td>
</tr>
<tr>
<td></td>
<td>• Etodolac</td>
</tr>
<tr>
<td></td>
<td>• Fenoprofen</td>
</tr>
<tr>
<td></td>
<td>• Flurbiprofen</td>
</tr>
</tbody>
</table>

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Note

- Although denied claims are not included when assessing the numerators, all claims (paid, suspended, pending and denied) must be included when identifying the eligible population for each rate.
- Do not include supplemental data when identifying the eligible population or assessing the numerator. Supplemental data can be used for only required exclusions for this measure.

Data Elements for Reporting

Organizations that submit HEDIS data to NCQA must provide the following data elements.

Table DDE-3: Data Elements for Potentially Harmful Drug-Disease Interactions in the Elderly

<table>
<thead>
<tr>
<th></th>
<th>Administrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement year</td>
<td>✓</td>
</tr>
<tr>
<td>Data collection methodology</td>
<td></td>
</tr>
<tr>
<td>(Administrative)</td>
<td>✓</td>
</tr>
<tr>
<td>Eligible population</td>
<td>For each of the 3 rates and total</td>
</tr>
<tr>
<td>Number of required exclusions</td>
<td>Rate 1, Rate 2 and total</td>
</tr>
<tr>
<td>Numerator events by</td>
<td>For each of the 3 rates and total</td>
</tr>
<tr>
<td>administrative data</td>
<td></td>
</tr>
<tr>
<td>Reported rate</td>
<td>For each of the 3 rates and total</td>
</tr>
</tbody>
</table>
Use of High-Risk Medications in the Elderly (DAE) and Potentially Harmful Drug-Disease Interactions in the Elderly (DDE)

Measure Workup

Topic Overview

Importance and Prevalence

In older adults, certain medications are associated with increased risk of harm from drug side-effects and drug toxicity, and pose a concern for patient safety. Use of potentially inappropriate medications (PIM) in older adults can lead to poor health outcomes, including adverse drug events, confusion, falls, hospitalizations and death.

A recent study examined noninstitutionalized Medicare beneficiaries 65 years of age and older taking one or more medications, and the prevalence of PIM use based on the 2015 Beers Criteria. Among the beneficiaries, 29% were taking one or more PIM (Patel et al., 2018). A systematic review of 91 articles assessing PIM use in older adults living in nursing homes also found that 43% of elderly patients were prescribed a PIM. This number increased over time, from 30.3% in studies conducted during 1990–1999, to 49.8% in studies conducted from 2005–2015 (Morin et al., 2016).

Older adults, commonly prescribed multiple prescription drugs due to complex medical problems, are increasingly at risk of PIM use. One study found that each additional drug an individual used during the year was associated with a 5.2 percentage point increase in their probability of using a PIM (Miller et al., 2017). PIM use in older adults has been connected to significantly longer hospital stay lengths and increased hospitalization costs (Hagstrom et al., 2015), as well as to increased risk of death (Lau et al., 2004). Use of specific PIMs such as hypnotics, including benzodiazepine receptor agonists, and nonsteroidal anti-inflammatory drugs (NSAIDS) can also result in increased risk of delirium, falls, fractures, gastrointestinal bleeding and acute kidney injury (Merel et al., 2017).

Preventing poor health effects from use of PIMs is a growing concern with the increasing population of adults over 65 and rising prescription medication use, particularly as the hospitalization rate for adverse drug events among adults 65 or older is 7 times higher than that of adults younger than 65 (Charlesworth et al., 2015; Shehab et al., 2016).

Opportunity to improve care

Interventions focused on reducing the use of PIMs can lower the incidence of these poor health outcomes. Prescription benefit plans often require preauthorization of specific medications, to limit the use of PIMs in older adults. Additional interventions have included direct patient education (Tannenbaum et al., 2014) and the use of computer-based reminder systems. Computerized prescribing, combined with clinical decision support systems, can alert a physician when they are attempting to prescribe a PIM to an elderly patient. Studies have found these systems to be effective in reducing prescribing of PIMs (Agostini et al., 2007; Terrell et al., 2009; Iankowitz et al., 2012). Studies have also shown that integration of the Beers Criteria (which list PIMs) in electronic health records can provide instant feedback and medication alternatives when PIMs are originally selected (Fick and Selma, 2012).

Financial importance and cost-effectiveness

Reducing use of PIMs in older adults also represents an opportunity to lower the costs associated with harm from medications (e.g., hospitalizations for drug toxicity) and encourages clinicians to consider safer alternatives. Adverse drug events (ADE) occur often in hospitals and contribute to longer length of stay and increased risk of mortality.

Older adults make up approximately 35% of all inpatient stays but contribute to approximately 53% of inpatient stays complicated by ADEs (HHS, 2014). The impact and the management of ADEs is complex and, as one study found, may cost up to $30.1 billion annually in the United States (Sultana et al., 2013). Preventable medication errors are estimated to impact more than 7 million patients, contribute to 7,000 deaths and, as another study found, cost almost $21 billion in direct medical costs across all care settings annually in the U.S. (Lahue et al., 2012).
Older adults currently make up <13% of the U.S. population, yet they contribute to almost 33% of prescription medications annually (Golchin, et al., 2015). Over a 22-year period, the median number of prescription medications used among adults 65 and older doubled from two to four, and the proportion taking five or more medications tripled from 12.8% to 39.0% (Charlesworth, et al, 2015).

Total health care expenditures in the U.S. reached $3.3 trillion in 2016 (Hartman, et al., 2018), and the Congressional Budget Office (CBO) estimates that spending on Medicare Part D benefits will total $99 billion in 2019 and increase to $219 billion by 2028 (CBO, 2018).

Supporting Evidence

These measures are based on the Beers Criteria developed and supported by the American Geriatrics Society (AGS). The AGS Beers Criteria is one of the most widely used sources about the safety of prescribing for older adults (American Geriatrics Society 2015 Beers Criteria Update Expert Panel, 2015). They include evidence-based medications that are potentially harmful in older adults and are a tool for providers to guide medication choice and reduce exposure of older adults to potentially harmful medications.

In 2014 the AGS convened a panel of experts in geriatrics and pharmacology to update the Beers Criteria (American Geriatrics Society 2015 Beers Criteria Update Expert Panel, 2015). In 2018 the panel met again to update the previously published criteria, to address new medications in the market, medications that were removed from the market and new evidence for medications shown to pose risks to older adults. The panel conducted a systematic review of the evidence for each medication and used a Delphi method to grade the quality of evidence and the strength of recommendation for each class of drug. Specific recommendations for each medication class are listed in the criteria. The final updated AGS Beers Criteria were published January 2019 (2019 American Geriatrics Society Beers Criteria Update Expert Panel, 2019).

Guiding Principles for Translating the Beers Criteria to Quality Measures

NCQA used the following guiding principles to determine which medication classes from the Beers Criteria should be included in our current quality measures.

<table>
<thead>
<tr>
<th>Use of High-Risk Medications in the Elderly (DAE)</th>
<th>1. Include only medications listed in Table 2: 2019 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Include only prescription medications.</td>
</tr>
<tr>
<td></td>
<td>3. Include only medications where the AGS Recommendation indicates “avoid” and the AGS Rationale does not include “avoid for” caveats that cannot be identified from prescription drug claims data.</td>
</tr>
<tr>
<td></td>
<td>4. Include medications with caveats only if they can be measured efficiently and reliably from prescription drug claims data.</td>
</tr>
<tr>
<td></td>
<td>5. If including a medication in the measure would likely result in the increased use of another potentially harmful medication that is not included in the measure, an exception to these guiding principles may be warranted to reduce this unintended consequence.</td>
</tr>
</tbody>
</table>

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Include conditions and medications listed in Table 3: 2019 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults Due to Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome.

The following criteria were used to determine which conditions from Table 3 should be included in the measure:

1. Do not include conditions where all potentially harmful medications are already listed in Use of High-Risk Medications in the Elderly.
2. Do not include conditions that are rare and would not provide a sufficient denominator count for quality measurement.
3. Only include conditions where the performance rate indicates there is room for improvement (i.e., greater than minimum use of the potentially inappropriate medication).
4. Only include conditions that can be reliably identified by claims data.
5. Do not include conditions where all potentially harmful medications are primarily available over the counter.

The following criteria were used to determine which medications from Table 3 should be included in the measure:

1. Include only prescription medications.
2. Include only medications with strong recommendations to avoid.
3. When a caveat is listed in Table 3 as an appropriate use of the medication and can be identified in claims, add the medication with an exclusion for the identifiable caveat.
4. For example, anticonvulsants should be avoided except for those with seizure disorders; therefore, there is an exclusion for seizure disorders in the History of Falls rate.
5. When a caveat is listed for a medication class that cannot be identified in claims data, the medication (class) may be included in the measure if the non-identifiable caveat is considered rare.
6. For example, the caveat for antipsychotics for people with dementia is that they should be avoided unless nonpharmacological options have failed and the patient is a threat to self or others. This caveat would be a rare event that cannot be identified in claims.

Health care disparities

There is some evidence to suggest women are more likely to receive a PIM than men. A study of 16,588 noninstitutionalized older adults with drug use showed that females were 3.7 percentage points more likely than males to have at least one PIM during the year. Additionally, black non-Hispanic adults are slightly more likely to have PIM use (32.8%) compared to other races and ethnicities (30.0%–30.8%). Older adults who are in fair or poor health (37.7%) are more likely to use a PIM than those who are in good (28.7%) or very good (23.9%) health, and older adults with lower education are more likely to have PIM use (34.4%) than those with a postgraduate degree (24.4%) (Miller et al., 2016).

Gaps in care

Recent data from the HEDIS® Health Plan measure set shows that while rates for the DAE measure for Medicare plans are low (lower rates indicate better performance), there is room for improvement.

For 2016, on average, 9.1% of individuals had at least two dispensing events for the same high-risk medication. Results showed variation in performance among plans, with rates averaging 13.7% for plans at the 90th percentile (worse) and 5.9% for plans at the 10th percentile (better).
For 2017, on average, 9.9% of individuals had at least two dispensing events for the same high-risk medication, indicating poorer performance and therefore greater exposure to PIMs among older adults.

For DDE, HEDIS results for Medicare plans demonstrated similar room for improvement. This measure includes rates for three indicators (History of Falls, Dementia, Chronic Kidney Disease), as well as a total rate (lower rates indicate better performance).

For 2016, 47.1% of individuals with a history of falls received at least one high-risk medication. For those with dementia, 45.5% received at least one high-risk medication. For those with chronic kidney disease, 10% received at least one high-risk medication. The national mean performance for the total rate was 40.2%. All four rates also showed variation in performance among plans.

For 2017, on average, 48.2%, 46.5%, 10.2% and 41.3% of individuals with a history of falls, dementia, chronic kidney disease and older adults overall received at least one high-risk medication, respectively, suggesting that there is still significant room for improvement, particularly for the History of Falls and Dementia indicators.

References


### HEDIS Health Plan Performance Rates: Use of High-Risk Medications in the Elderly (DAE)

#### Table 1. HEDIS DAE Measure Performance—At Least One High-Risk Medication—Medicare Plans

<table>
<thead>
<tr>
<th>Measurement Year</th>
<th>Total Number of Plans (N)</th>
<th>Number of Plans Reporting (N (%))</th>
<th>Performance Rates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standard Deviation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10th Percentile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25th Percentile</td>
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<tr>
<td></td>
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<td>50th Percentile</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>75th Percentile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>90th Percentile</td>
</tr>
<tr>
<td>2017</td>
<td>505</td>
<td>482 (95.4)</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5.7</td>
</tr>
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<td></td>
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<tr>
<td>2016</td>
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<td>2015</td>
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<td>474 (93.9)</td>
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<td>2014</td>
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<td>21.7</td>
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</tbody>
</table>

*For 2017 the average eligible population was 27,903, with a standard deviation of 65,670.

#### Table 2. HEDIS DAE Measure Performance—At Least Two Dispensing Events for the Same High-Risk Medication—Medicare Plans

<table>
<thead>
<tr>
<th>Measurement Year</th>
<th>Total Number of Plans (N)</th>
<th>Number of Plans Reporting (N (%))</th>
<th>Performance Rates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Mean</td>
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<td>90th Percentile</td>
</tr>
<tr>
<td>2017*</td>
<td>505</td>
<td>482 (95.4%)</td>
<td>9.9</td>
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<td>6.1</td>
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<td>15.4</td>
</tr>
<tr>
<td>2016**</td>
<td>506</td>
<td>485 (95.8%)</td>
<td>9.1</td>
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<td>13.7</td>
</tr>
<tr>
<td>2015</td>
<td>505</td>
<td>474 (93.9%)</td>
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<td>3.7</td>
</tr>
<tr>
<td>2014</td>
<td>507</td>
<td>488 (96.3%)</td>
<td>2.1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>4.6</td>
</tr>
</tbody>
</table>

*For 2017 the average eligible population was 27,903, with a standard deviation of 65,670.

** Note: NCQA revised this rate in DAE to assess two dispensing events for the same high-risk medication. For 2015 and prior, this rate focused on two dispensing events for different high-risk medications. The increase in performance between 2015 and 2016 was therefore expected.
# HEDIS Health Plan Performance Rates: Potentially Harmful Drug-Disease Interactions in the Elderly (DDE)

## Table 1. HEDIS DDE Measure Performance—History of Falls—Medicare Plans

<table>
<thead>
<tr>
<th>Measurement Year</th>
<th>Total Number of Plans (N)</th>
<th>Number of Plans Reporting (N (%))</th>
<th>Performance Rates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean</td>
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<td></td>
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<td>75th Percentile</td>
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<td></td>
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<td></td>
<td>90th Percentile</td>
</tr>
<tr>
<td>2017*</td>
<td>505</td>
<td>411 (81.4)</td>
<td>48.2</td>
</tr>
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<td></td>
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<tr>
<td>2016</td>
<td>506</td>
<td>390 (77.1)</td>
<td>47.1</td>
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<td>57.4</td>
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<td>505</td>
<td>355 (70.3)</td>
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<tr>
<td>2014</td>
<td>507</td>
<td>387 (76.3)</td>
<td>48.0</td>
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</table>

*For 2017 the average eligible population was 2,143, with a standard deviation of 4,429.

## Table 2. HEDIS DDE Measure Performance—Dementia—Medicare Plans

<table>
<thead>
<tr>
<th>Measurement Year</th>
<th>Total Number of Plans (N)</th>
<th>Number of Plans Reporting (N (%))</th>
<th>Performance Rates (%)</th>
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<tbody>
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<td></td>
<td></td>
<td></td>
<td>Mean</td>
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<td></td>
<td>90th Percentile</td>
</tr>
<tr>
<td>2017*</td>
<td>505</td>
<td>408 (80.8)</td>
<td>46.5</td>
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<td></td>
<td>57.2</td>
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<tr>
<td>2016</td>
<td>506</td>
<td>385 (76.1)</td>
<td>45.5</td>
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<td>8.3</td>
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*For 2017 the average eligible population was 1,830, with a standard deviation of 3,603.
Table 3. HEDIS DDE Measure Performance—Chronic Kidney Disease—Medicare Plans

<table>
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<tr>
<th>Measurement Year</th>
<th>Total Number of Plans (N)</th>
<th>Number of Plans Reporting (N (%))</th>
<th>Performance Rates (%)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>2017*</td>
<td>505</td>
<td>369 (73.1)</td>
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<tr>
<td>2016</td>
<td>506</td>
<td>344 (68.0)</td>
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<td>505</td>
<td>325 (64.4)</td>
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<tr>
<td>2014</td>
<td>507</td>
<td>356 (70.2)</td>
<td>9.6</td>
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</table>

*For 2017 the average eligible population was 920, with a standard deviation of 1,772.

Table 4. HEDIS DDE Measure Performance—Total—Medicare Plans

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<th>Total Number of Plans (N)</th>
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<th>Performance Rates (%)</th>
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<tr>
<td></td>
<td></td>
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<td>Standard Deviation</td>
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<td>2017*</td>
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<td>436 (86.3)</td>
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<td>505</td>
<td>386 (76.4)</td>
<td>40.1</td>
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<td>2014</td>
<td>507</td>
<td>412 (81.3)</td>
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</table>

*For 2017 the average eligible population was 4,516, with a standard deviation of 9,394.