Supplementary Tables

Table 1. Drugs for Osteoporosis Marketed in the United States, 1988-2014

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Drug** | **First FDA Approval Date** | **Number of Generic Applications** | **First FDA Generic Approval Date** | **Market Status** |
| alendronate sodium solution; oral eq 70 mg base/75 ml | Sep-03 | 1 | Feb-13 | Marketed |
| alendronate sodium tablet, effervescent; oral eq 70 mg base | Mar-12 | 0 |  | Marketed |
| alendronate sodium tablet; oral eq 10 mg base | Sep-95 | 10 | Feb-08 | Marketed |
| alendronate sodium tablet; oral eq 35 mg base | Oct-00 | 13 | Feb-08 | Marketed |
| alendronate sodium tablet; oral eq 40 mg base | Sep-95 | 4 | Feb-08 | Marketed |
| alendronate sodium tablet; oral eq 5 mg base | Apr-97 | 9 | Feb-08 | Marketed |
| alendronate sodium tablet; oral eq 70 mg base | Oct-00 | 13 | Feb-08 | Marketed |
| alendronate sodium; cholecalciferol tablet; oral eq 70 mg base;2,800 iu | Apr-05 | 0 |  | Marketed |
| alendronate sodium; cholecalciferol tablet; oral eq 70 mg base;5,600 iu | Apr-07 | 0 |  | Marketed |
| calcitonin human injectable; injection 0.5 mg/vial | Oct-86 | 0 |  | Discount. |
| calcitonin salmon injectable; injection 100 iu/ml | Jul-86 | 0 |  | Discont |
| calcitonin salmon injectable; injection 200 iu/ml | Mar-91 | 1 | Apr-95 | Marketed |
| calcitonin salmon injectable; injection 400 iu/vial | Dec-84 | 0 |  | Discont |
| calcitonin salmon spray, metered; nasal 200 iu/spray | Aug-95 | 2 | Nov-08 | Marketed |
| calcitonin salmon recombinant spray, metered; nasal 200 iu/spray | Aug-05 | 0 |  | Marketed |
| risedronate sodium; calcium carbonate; tablet, tablet; oral eq 500 mg base,n/a;n/a,35 mg | Aug-05 | 0 |  | Discont |
| denosumab injectable; subcutaneous 60 mg/ml | Jun-10 | 0 |  | Marketed |
| ibandronate sodium injectable; intravenous eq 3 mg base/3 ml | Jan-06 | 4 | Feb-14 | Marketed |
| ibandronate sodium tablet; oral eq 150 mg base | Mar-05 | 6 | Mar-12 | Marketed |
| ibandronate sodium tablet; oral eq 2.5 mg base | May-03 | 0 |  | Discont |
| raloxifene hydrochloride tablet; oral 60 mg | Dec-97 | 3 | Mar-14 | Marketed |
| risedronate sodium tablet, delayed release; oral 35 mg | Oct-10 | 0 |  | Marketed |
| risedronate sodium tablet; oral 150 mg | Apr-08 | 4 | Jun-14 | Marketed |
| risedronate sodium tablet; oral 30 mg | Mar-98 | 1 | Oct-07 | Marketed |
| risedronate sodium tablet; oral 35 mg | May-02 | 1 | Oct-07 | Marketed |
| risedronate sodium tablet; oral 5 mg | Apr-00 | 1 | Oct-07 | Marketed |
| risedronate sodium tablet; oral 75 mg | Apr-07 | 3 | Jun-14 | Marketed |
| teriparatide recombinant human injectable; subcutaneous 0.6 mg/2.4 ml | Jun-08 | 0 |  | Marketed |
| teriparatide recombinant human injectable; subcutaneous 0.75 mg/3 ml | Nov-02 | 0 |  | Discont |
| zoledronic acid injectable; iv (infusion) eq 4 mg base/100 ml | Jun-11 | 0 |  | Marketed |
| zoledronic acid injectable; iv (infusion) eq 4 mg base/5 ml | Mar-03 | 11 | Mar-13 | Marketed |
| zoledronic acid injectable; iv (infusion) eq 4 mg base/vial | Aug-01 | 2 | Mar-13 | Marketed |
| zoledronic acid injectable; iv (infusion) eq 5 mg base/100 ml | Apr-07 | 6 | Mar-13 | Marketed |

Table 2. Inflation Adjusted Prices of Osteoporosis Drugs as a Percentage of the Brand AWP on December 31, 2014

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Drug Class and Drug Product** | **Brand WAC** | **Brand Direct**  **Price** | **Brand NADAC** | **Brand FSS Price** | **Brand Big 4 Price** | **Generic AWP** | **Generic WAC** | **Generic NADAC** | **Generic FSS Price** | **Generic ACA FUL** | **Generic Weighted Average AMP** | **Part B Price** |
| **bisphosphonates (median)** | **83.3%** | **83.3%** | **80.5%** | **55.8%** | **53.2%** | **85.7%** | **61.9%** | **33.7%** | **22.5%** | **9.8%** | **5.6%** |  |
| **alendronate sodium (median)** | **83.3%** | **83.3%** | **81.1%** | **54.2%** | **52.5%** | **87.7%** | **9.5%** | **3.2%** | **2.6%** | **2.7%** | **1.5%** |  |
| alendronate sodium tablet; oral eq 35mg base |  |  |  |  |  | 87.8% | 6.9% | 2.2% | 1.4% | 2.7% | 1.5% |  |
| alendronate sodium solution; oral eq 70mg base/75ml | 83.3% | 83.3% |  |  |  | 82.7% | 66.1% |  |  |  |  |  |
| alendronate sodium tablet; oral eq 40mg base |  |  |  |  |  | 87.7% | 70.2% |  |  |  |  |  |
| alendronate sodium tablet; oral eq 10mg base |  |  |  |  |  | 87.7% | 9.6% | 4.5% | 11.3% | 3.8% | 2.2% |  |
| alendronate sodium tablet; oral eq 5mg base |  |  |  |  |  | 87.7% | 9.3% | 4.4% | 3.8% |  |  |  |
| alendronate sodium tablet, effervescent; oral eq 70mg base | 83.3% |  |  | 55.9% |  |  |  |  |  |  |  |  |
| alendronate sodium tablet; oral eq 70mg base |  |  | 81.1% | 52.5% | 52.5% | 63.4% | 5.2% | 1.5% | 1.2% | 2.2% | 1.3% |  |
| **alendronate sodium/cholecalciferol (median)** |  |  | **80.4%** | **37.0%** | **41.5%** |  |  |  |  |  |  |  |
| alendronate Na; cholecalciferol tablet; oral eq 70mg base;2,800 iu |  |  | 80.1% | 41.5% | 41.5% |  |  |  |  |  |  |  |
| alendronate Na; cholecalciferol tablet; oral eq 70mg base;5,600 iu |  |  | 80.8% | 32.6% |  |  |  |  |  |  |  |  |
| **ibandronate sodium (median)** |  |  | **81.2%** | **66.1%** | **55.3%** | **77.3%** | **56.8%** | **17.4%** | **23.6%** | **9.5%** | **5.4%** | **65.0%** |
| ibandronate sodium tablet; oral eq 150mg base |  |  | 81.4% | 58.4% | 52.4% | 78.4% | 60.4% | 17.4% | 23.6% | 9.5% | 5.4% |  |
| ibandronate sodium injectable; intravenous eq 3mg base/3ml |  |  | 81.1% | 73.8% | 58.2% | 76.2% | 53.3% |  |  |  |  | 65.0% |
| **risedronate sodium (median)** | **61.9%** |  | **80.5%** | **57.4%** | **43.5%** | **89.0%** | **72.0%** | **57.7%** | **25.4%** | **44.8%** | **25.6%** |  |
| risedronate sodium tablet; oral 30mg |  |  |  | 57.7% | 57.7% |  |  |  |  |  |  |  |
| risedronate sodium tablet; oral 35mg | 61.9% |  | 80.8% | 50.1% | 29.9% |  |  |  |  |  |  |  |
| risedronate sodium tablet; oral 5mg |  |  | 79.8% | 57.4% | 34.2% |  |  |  |  |  |  |  |
| risedronate sodium tablet, delayed release; oral 35mg |  |  | 80.6% | 68.0% |  |  |  |  |  |  |  |  |
| risedronate sodium tablet; oral 150mg |  |  | 80.3% | 57.4% | 52.9% | 89.0% | 72.0% | 57.7% | 25.4% | 44.8% | 25.6% |  |
| **zoledronic acid** |  |  |  |  |  |  |  |  |  |  |  |  |
| zoledronic acid injectable; iv (infusion) eq 5mg base/100ml |  |  |  |  | 62.9% | 83.7% | 77.4% | 50.1% | 21.5% |  |  | 74.2% |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calcitonin (salmon) (median)** | **70.6%** |  | **63.3%** | **26.4%** |  | **32.9%** | **24.4%** | **12.3%** | **5.2%** | **9.8%** | **5.6%** | **86.4%** |
| calcitonin salmon recombinant spray, metered; nasal 200 iu/spray | 57.8% |  | 45.1% | 26.4% |  |  |  |  |  |  |  |  |
| calcitonin salmon injectable; injection 200 iu/ml |  |  |  | 8.4% |  |  |  |  |  |  |  | 86.4% |
| calcitonin salmon spray, metered; nasal 200 iu/spray | 83.3% |  | 81.5% | 32.0% |  | 32.9% | 24.4% | 12.3% | 5.2% | 9.8% | 5.6% |  |
| **denosumab (human monoclonal antibody)** |  |  |  |  |  |  |  |  |  |  |  |  |
| denosumab injectable; subcutaneous  60mg/ml |  |  | 80.9% | 81.9% | 57.6% |  |  |  |  |  |  | 82.7% |
| **teriparatide (parathyroid hormone)** |  |  |  |  |  |  |  |  |  |  |  |  |
| teriparatide RHU injectable; subcutaneous 0.6mg/2.4ml | 83.3% | 83.33% | 80.4% | 53.5% | 40.0% |  |  |  |  |  |  |  |
| **raloxifene hydrochloride  (selective estrogen receptor modulator)** |  |  |  |  |  |  |  |  |  |  |  |  |
| raloxifene hydrochloride tablet; oral 60mg | 83.3% | 83.33% | 80.6% | 65.9% | 53.9% | 89.9% | 66.9% | 51.1% | 25.9% | 74.8% | 42.7% |  |
| **All Osteoporosis Drug Classes (Median)** | **83.3%** | **83.33%** | **80.5%** | **55.8%** | **53.2%** | **85.7%** | **61.9%** | **33.7%** | **22.5%** | **9.8%** | **5.6%** | **78.5%** |