***APPENDICES***

***Appendix A. Parameter Values and Distributions***

Table A-1 details the input values used in the model and respective sources. Ranges used for one-way sensitivity analysis and distributions used for probabilistic sensitivity analysis appear in table A-2.

Table A-1. Complete Set of Parameters Used in the Model

| **Parameter Description** | **Value** | **Source** |
| --- | --- | --- |
| **Population Parameters** |
| Pop 6 mo–2 yr | 6,137,688 | U.S. Census Bureau (2018) [1] |
| Pop 2 yr–6 yr | 16,142,086 | U.S. Census Bureau (2018) [1] |
| Pop 6 yr–12 yr | 28,627,975 | U.S. Census Bureau (2018) [1] |
| Pop 6 mo–12 yr | 50,907,749 | U.S. Census Bureau (2018) [1] |
| Pop 3 yr–12 yr | 40,687,830 | U.S. Census Bureau (2018) [1] |
| OM Incidence 6 mo–2 yr | 50.10 | Kawai et al. (2018) [2] |
| OM Incidence 2 yr–6 yr | 19.20 | Kawai et al. (2018) [2]  |
| OM Incidence 6 yr–12 yr | 6.50 | Kawai et al. (2018) [2] |
| AS incidence | 1.13 | Shapiro et al. (2011) [3]  |
| GAS incidence | 4.95 | Dooling et al. (2014) [4] |
| Proportion on antibiotics, OM | 0.86 | Suaya et al. (2018) [5] |
| Proportion on antibiotics, AS | 0.82 | Shapiro et al. (2011) [3] |
| Proportion on antibiotics, GAS | 1 | Expert opinion |
| Proportion on narrow spectrum, OM, 6mo–2 yr | 0.65 | Suaya et al. (2018) [5] |
| Proportion on narrow spectrum, OM, 2 yr–6 yr | 0.65 | Suaya et al. (2018) [5] |
| Proportion on narrow spectrum, OM, 6 yr–12 yr | 0.65 | Suaya et al. (2018) [5] |
| Proportion on narrow spectrum, AS | 0.58 | Shapiro et al. (2011) [3] |
| Proportion on narrow spectrum, GAS | 0.76 | Gidengil et al. (2013) [6] |
| Exclusion of penicillin-allergic children | 0.88 | Vyles et al. (2017) [7]; Kerr et al. (1994) [8]; Lee et al. (2000) [9]; Nicklas et al. (1999) [10] |
| Gerber et al. (2017) result implementation (proportion of children with narrow-spectrum antibiotic prescription) | 1.000 | Implementation of Gerber findings [11] |
| **Gerber et al. (2017) Clinical Findings** |
| TF prob, narrow, OM, 6 mo–2 yr, 2 yr-6 yr, & 6 yr-12 yr | 0.035 | Weighted average of age-specific results, personal communication with Dr. Gerber |
| TF prob, narrow, AS | 0.015 | Gerber et al. (2017) [11] |
| TF prob, narrow, GAS | 0.024 | Gerber et al. (2017) [11] |
| TF prob, broad, OM, 6 mo–2 yr, 2 yr-6 yr, & 6 yr-12 yr | 0.046 | Weighted average of age-specific results, personal communication with Dr. Gerber |
| TF risk diff, broad, AS | 0.005 | Gerber et al. (2017) [11] |
| TF risk diff, broad, GAS | -0.013 | Gerber et al. (2017) [11] |
| ADR prob (retrospective), narrow, OM | 0.031 | Gerber et al. (2017) [11] |
| ADR prob (retrospective), narrow , AS | 0.018 | Gerber et al. (2017) [11] |
| ADR prob (retrospective), narrow, GAS | 0.021 | Gerber et al. (2017) [11] |
| ADR risk diff (retrospective), broad, OM | 0.018 | Gerber et al. (2017) [11] |
| ADR risk diff (retrospective), broad, AS | -0.004 | Gerber et al. (2017) [11] |
| ADR risk diff (retrospective), broad, GAS | 0.001 | Gerber et al. (2017) [11] |
| **Gerber et al. (2017) Productivity Findings** |
| Missed school prob, narrow, OM | 0.350 | Gerber et al. (2017) [11] |
| Missed school prob, narrow, AS | 0.280 | Gerber et al. (2017) [11] |
| Missed school prob, narrow, GAS | 0.600 | Gerber et al. (2017) [11] |
| Missed school risk diff, broad, OM | 0.024 | Gerber et al. (2017) [11] |
| Missed school risk diff, broad, AS | 0.039 | Gerber et al. (2017) [11] |
| Missed school risk diff, broad, GAS | 0.010 | Gerber et al. (2017) [11] |
| Missed school days | 1.522 | Adams et al. (1999) [12] |
| **Healthcare Utilization**  |
| ED treatment prob for TF, OM | 0.051 | MEPS (2019) [13] |
| Hospital treatment prob for TF, OM | 0.003 | MEPS (2019) [13] |
| Outpatient treatment prob for TF, OM | 0.945 | MEPS (2019) [13] |
| ED treatment prob for TF, AS | 0.048 | MEPS (2019) [13] |
| Hospital treatment prob for TF, AS | 0.002 | MEPS (2019) [13] |
| Outpatient treatment prob for TF, AS | 0.950 | MEPS (2019) [13] |
| ED treatment prob for TF, GAS | 0.048 | MEPS (2019) [13] |
| Hospital treatment prob for TF, GAS | 0.002 | MEPS (2019) [13] |
| Outpatient treatment prob for TF, GAS | 0.950 | MEPS (2019) [13] |
| Length of ED visit for TF, days | 1.00 | Assumption |
| Length of hospitalization for TF, days | 2.00 | Assumption  |
| Length of outpatient visit for TF, days | 1.00 | Assumption  |
| ED treatment prob for ADR, OM | 0.104 | MEPS (2019) [13] |
| Hospital treatment prob for ADR, OM | 0.006 | MEPS (2019) [13] |
| Outpatient treatment prob for ADR, OM | 0.890 | MEPS (2019) [13] |
| ED treatment prob for ADR, AS | 0.092 | MEPS (2019) [13] |
| Hospital treatment prob for ADR, AS | 0.006 | MEPS (2019) [13] |
| Outpatient treatment prob for ADR, AS | 0.902 | MEPS (2019) [13] |
| ED treatment prob for ADR, GAS | 0.088 | MEPS (2019) [13] |
| Hospital treatment prob for ADR, GAS | 0.006 | MEPS (2019) [13] |
| Outpatient treatment prob for ADR, GAS | 0.906 | MEPS (2019) [13] |
| Length of ED visit for ADR, days | 1.00 | Assumption |
| Length of hospitalization for ADR, days | 2.00 | Assumption  |
| Length of outpatient visit for ADR, days | 1.00 | Assumption  |
| **Unit Costs (2017 USD)** |
| Payer cost, narrow-spectrum antibiotic course, OM | 39.13 | GoodRx (2019) [14]; Chahine, Johnson, & Costanzo (2014) [15]; Wicker & Mohundro (2010) [16]; TOP (2008) [17]  |
| Payer cost, broad-spectrum antibiotic course, OM | 77.40 | GoodRx (2019) [14]; Wicker & Mohundro (2010) [16]; Chahine et al. (2014) [15]; TOP (2008) [17]; Suaya et al. (2018) [5]  |
| Payer cost, narrow-spectrum antibiotic course, AS | 52.18 | GoodRx (2019) [14]; TOP (2008) [17]  |
| Payer cost, broad-spectrum antibiotic course, AS | 86.31 | GoodRx (2019) [14]; Demuri & Wald (2012) [18]; Contopoulous-Ioannidis, Ioannidis,& Lau (2003) [19]; Leung & Kellner (2004) [20]; Suaya et al. (2018) [5] |
| Payer cost, narrow-spectrum antibiotic course, GAS | 31.61 | GoodRx (2019) [14]; Milatovic et al. (1993) [21]; Syrogiannopoulos et al. (2004) [22]; Tack et al. (1997) [23]; Chahine, Chamoun, & Soucher (2013) [24]; Shulman et al. (2014) [14]; Choby (2009) [25] |
| Payer cost, broad-spectrum antibiotic course, GAS | 71.59 | GoodRx (2019) [14]; Syrogiannopoulos et al. (2004) [22]; Chahine et al. (2013) [24]; Shulman et al. (2014) [14];Tack et al. (1997) [23]; Milatovic et al. (1993) [21]; Choby (2009) [25]; Suaya et al. (2018) [5] |
| Payer cost, hospitalization for TF, OM | 2831.233 | MEPS (2019) [13] |
| OOP cost, hospitalization for TF, OM | 185.955 | MEPS (2019) [13] |
| Payer cost, ED visit for TF, OM | 329.485 | MEPS (2019) [13] |
| OOP cost, ED visit for TF, OM | 41.934 | MEPS (2019) [13] |
| Payer cost, outpatient visit for TF, OM | 165.543 | MEPS (2019) [13] |
| OOP cost, outpatient visit for TF, OM | 26.607 | MEPS (2019) [13] |
| Payer cost, hospitalization for TF, AS | 2531.179 | MEPS (2019) [13] |
| OOP cost, hospitalization for TF, AS | 166.248 | MEPS (2019) [13] |
| Payer cost, ED visit for TF, AS | 394.317 | MEPS (2019) [13] |
| OOP cost, ED visit for TF, AS | 33.903 | MEPS (2019) [13] |
| Payer cost, outpatient visit for TF, AS | 119.766 | MEPS (2019) [13] |
| OOP cost, outpatient visit for TF, AS | 25.844 | MEPS (2019) [13] |
| Payer cost, hospitalization for TF, GAS | 2531.179 | MEPS (2019) [13] |
| OOP cost, hospitalization for TF, GAS | 166.248 | MEPS (2019) [13] |
| Payer cost , ED visit for TF, GAS | 394.317 | MEPS (2019) [13] |
| OOP cost, ED visit for TF, GAS | 33.903 | MEPS (2019) [13] |
| Payer cost, outpatient visit for TF, GAS | 119.766 | MEPS (2019) [13] |
| OOP cost, outpatient visit for TF, GAS | 25.844 | MEPS (2019) [13] |
| Payer cost, hospitalization for ADR, OM | 5808.304 | MEPS (2019) [13] |
| OOP cost, hospitalization for ADR, OM | 381.489 | MEPS (2019) [13] |
| Payer cost, ED visit for ADR, OM | 456.962 | MEPS (2019) [13] |
| OOP cost, ED visit for ADR, OM | 43.372 | MEPS (2019) [13] |
| Payer cost, outpatient visit for ADR, OM | 198.957 | MEPS (2019) [13] |
| OOP cost, outpatient visit for ADR, OM | 32.899 | MEPS (2019) [13] |
| Payer cost, hospitalization for ADR, AS | 7747.178 | MEPS (2019) [13] |
| OOP cost, hospitalization for ADR, AS | 508.834 | MEPS (2019) [13] |
| Payer cost, ED visit for ADR, AS | 499.596 | MEPS (2019) [13] |
| OOP cost, ED visit for ADR, AS | 42.604 | MEPS (2019) [13] |
| Payer cost, outpatient visit for ADR, AS | 140.591 | MEPS (2019) [13] |
| OOP cost, outpatient visit for ADR, AS | 30.800 | MEPS (2019) [13] |
| Payer cost, hospitalization for ADR, GAS | 8122.610 | MEPS (2019) [13] |
| OOP cost, hospitalization for ADR, GAS | 533.493 | MEPS (2019) [13] |
| Payer cost, ED visit for ADR, GAS | 501.624 | MEPS (2019) [13] |
| OOP cost, ED visit for ADR, GAS | 39.508 | MEPS (2019) [13] |
| Payer cost, outpatient visit for ADR, GAS | 139.852 | MEPS (2019) [13] |
| OOP cost, outpatient visit for ADR, GAS | 33.385 | MEPS (2019) [13] |
| **Productivity Parameters** |
| Missed school days | 1.522 | Adams et al. (1999) [12] |
| Travel time for visit | 0.83 | Ray et al. (2015) [26] |
| Travel cost | $15.67 | Schmier et al. (2017) [27] |
| Paid work hours per day per adult with own child | 5.51 | U.S. DOL BLA (2018a) [28] |
| Average hourly wage ($) | $29.95 | U.S. DOL BLA (2018b) [29] |

Notes: ADR = adverse drug reaction; AS = acute sinusitis; ED = emergency department; GAS = Group A streptococcal pharyngitis; mo = month(s); OM = otitis media; OOP = out of pocket; pop = population; prob = probability; risk diff = risk difference; TF = treatment failure; yr = year(s)

Negative risk difference means broad spectrum is associated with lower risk of ADR or TF.

Table A-2. Ranges Used for One-Way Sensitivity Analysis and Distributions Used for Probabilistic Sensitivity Analysis

| **Study Population Parameters** | **Default** | **< Range >** | **SE** | **alpha** | **beta** | **Distribution** |
| --- | --- | --- | --- | --- | --- | --- |
| **Annual Incidence of Acute Respiratory Tract Infection, per 100 Children** |
| OM infections in children 6 mo to < 2 yr | 50.10 | 41.40 | 58.90 | 4.46 |  |  | Normal |
| OM infections in children 2 yr to < 6 yr | 19.20 | 15.80 | 22.60 | 1.73 |  |  | Normal |
| OM infections in children 6 yr–12 yr | 6.50 | 5.50 | 7.60 | 0.54 |  |  | Normal |
| AS in children 6 mo to 12 yr  | 1.13 | 0.79 | 1.43 | 0.16 |  |  | Normal |
| GAS in children > 2 yr | 4.95 | 4.54 | 5.34 | 0.20 |  |  | Normal |
| **Proportion Taking Antibiotics After ARTI Visit** |
| Current practice, OM in children 6 mo to < 2 yr | 0.86 | 0.647 | 1.000 | 0.090 | 12 | 2 | Beta |
| Current practice, AS in children 6 mo to 12 yr | 0.82 | 0.786 | 0.851 |  | 441.160 | 96.840 | Beta |
| Current practice, GAS in children 3 yr–12 yr | 1 |  |  |  |  |  |  |
| **Proportion Taking Narrow-Spectrum Versus Broad-Spectrum Antibiotics** |
| Current practice, OM in children 6 mo to < 2 yr | 0.65 | 0.488 | 0.813 | 0.083 | 21 | 11 | Beta |
| Current practice, OM in children 2 yr to < 6 yr | 0.65 | 0.488 | 0.813 | 0.083 | 21 | 11 | Beta |
| Current practice, OM in children 6 yr–12 yr | 0.65 | 0.488 | 0.813 | 0.083 | 21 | 11 | Beta |
| Current practice, AS in children 6 mo–12 yr | 0.58 | 0.534 | 0.626 |  | 255.78 | 185.220 | Beta |
| Current practice, GAS in children 3 yr–12 yr | 0.76 | 0.752 | 0.772 |  | 5017 | 1568 | Beta |
| **Gerber et al. (2017) Clinical Findings** |
| ***Treatment Failure*** |
| Probability of TF for AOM given narrow-spectrum antibiotic, 6 mo to < 2 yr | 0.035 | 0.034 | 0.032 |  | 575 | 15823 | Beta |
| Probability of TF for AOM given narrow-spectrum antibiotic, 2 yr–6 yr | 0.035 | 0.034 | 0.032 |  | 575 | 15823 | Beta |
| Probability of TF for AOM given narrow-spectrum antibiotic 6 yr–12 yr | 0.035 | 0.034 | 0.032 |  | 575 | 15823 | Beta |
| Probability of TF for AS given narrow-spectrum antibiotic | 0.015 | 0.011 | 0.019 |  | 51 | 3349 | Beta |
| Probability of TF for GAS given narrow-spectrum antibiotic | 0.024 | 0.020 | 0.028 |  | 144 | 5819 | Beta |
| Probability of TF for AOM given broad-spectrum antibiotic, 6 mo to < 2 yr | 0.046 | 0.039 | 0.054 |  | 124 | 2564 | Beta |
| Probability of TF for AOM given broad-spectrum antibiotic, 2 yr–6 yr | 0.046 | 0.039 | 0.054 |  | 124 | 2564 | Beta |
| Probability of TF for AOM given broad-spectrum antibiotic 6 yr–12 yr | 0.046 | 0.039 | 0.054 |  | 124 | 2564 | Beta |
| Risk difference for treatment failure for AS at 14 days given broad- versus narrow-spectrum antibiotic | 0.005 | -0.006 | 0.016 | 0.01 |  |  | Normal |
| Risk difference for treatment failure for GAS at 14 days given broad- versus narrow-spectrum antibiotic | -0.013 | -0.022 | -0.003 | 0.00 |  |  | Normal |
| ***Adverse Drug Reaction*** |
| Probability of adverse drug reactions for OM at 14 days given narrow-spectrum antibiotic | 0.031 | 0.028 | 0.034 |  | 507 | 15930 | Beta |
| Probability of adverse drug reactions for AS at 14 days given narrow-spectrum antibiotic | 0.018 | 0.014 | 0.023 |  | 61 | 3339 | Beta |
| Probability of adverse drug reactions for GAS at 14 days given narrow-spectrum antibiotic | 0.021 | 0.018 | 0.025 |  | 127 | 5826 | Beta |
| Risk difference for adverse drug reactions for OM at 14 days given broad- versus narrow-spectrum antibiotic | 0.018 | 0.008 | 0.027 | 0.00 |  |  | Normal |
| Risk difference for adverse drug reactions for AS at 14 days given broad- versus narrow-spectrum antibiotic | -0.004 | -0.013 | 0.005 | 0.00 |  |  | Normal |
| Risk difference for adverse drug reactions for GAS at 14 days given broad- versus narrow-spectrum antibiotic | 0.001 | -0.011 | 0.013 | 0.01 |  |  | Normal |
| **Gerber et al. (2017) Productivity Findings** |
| Probability of missing school or daycare because of infection for OM, narrow spectrum | 0.350 | 0.307 | 0.394 |  | 161 | 299 | Beta |
| Probability of missing school or daycare because of infection for AS, narrow spectrum | 0.280 | 0.231 | 0.329 |  | 89 | 230 | Beta |
| Probability of missing school or daycare because of infection for GAS, narrow spectrum | 0.600 | 0.550 | 0.644 |  | 251 | 169 | Beta |
| Risk difference for missing school or daycare because of infection for OM, broad versus narrow spectrum | 0.024 | -0.061 | 0.109 | 0.04 |  |  | Normal |
| Risk difference for missing school or daycare because of infection for AS, broad versus narrow spectrum | 0.039 | -0.061 | 0.140 | 0.05 |  |  | Normal |
| Risk difference for missing school or daycare because of infection for GAS, broad versus narrow spectrum | 0.010 | -0.092 | 0.112 | 0.05 |  |  | Normal |
| Missed school/daycare, mean days | 1.522 | 1.142 | 1.903 | 0.194 |  |  | Normal |
| **Healthcare Utilization** |
| ***Treatment Failure*** |
| Probability of ED treatment after treatment failure for OM | 0.051 |  |  |  | 510.145 | 9925 | Multinomial |
| Probability of hospitalization after treatment failure for OM | 0.003 |  |  |  | 32.753 | 9925 | Multinomial |
| Probability of outpatient treatment after treatment failure for OM | 0.945 |  |  |  | 9383.095 | 9925 | Multinomial |
| Probability of ED treatment after treatment failure for AS | 0.048 |  |  |  | 128.440 | 2704 | Multinomial |
| Probability of hospitalization after treatment failure for AS | 0.002 |  |  |  | 6.219 | 2704 | Multinomial |
| Probability of outpatient treatment after treatment failure for AS | 0.950 |  |  |  | 2569.070 | 2704 | Multinomial |
| Probability of emergency department treatment after treatment failure for GAS | 0.048 |  |  |  | 128.440 | 2704 | Multinomial |
| Probability of hospitalization after treatment failure for GAS | 0.002 |  |  |  | 6.219 | 2704 | Multinomial |
| Probability of outpatient treatment after treatment failure for GAS | 0.950 |  |  |  | 2569.070 | 2704 | Multinomial |
| Length of ED visit, mean days | 1.000 | 0.750 | 1.250 | 0.128 |  |  | Normal |
| Length of hospitalization, mean days | 2.000 | 1.500 | 2.500 | 0.255 |  |  | Normal |
| Length of outpatient visit, mean hours | 1.000 | 0.750 | 1.250 | 0.128 |  |  | Normal |
| ***Adverse Drug Reaction*** |
| Probability of ED treatment after adverse drug reaction for OM | 0.104 |  |  |  | 421.636 | 4062 | Multinomial |
| Probability of hospitalization after adverse drug reaction for OM | 0.006 |  |  |  | 25.997 | 4062 | Multinomial |
| Probability of outpatient treatment after adverse drug reaction for OM | 0.890 |  |  |  | 3614.368 | 4062 | Multinomial |
| Probability of ED treatment after adverse drug reaction for AS | 0.092 |  |  |  | 211.966 | 2309 | Multinomial |
| Probability of hospitalization after adverse drug reaction for AS | 0.006 |  |  |  | 13.392 | 2309 | Multinomial |
| Probability of outpatient treatment after adverse drug reaction for AS | 0.902 |  |  |  | 2083.642 | 2309 | Multinomial |
| Probability of ED treatment after adverse drug reaction for GAS | 0.088 |  |  |  | 168.416 | 1916 | Multinomial |
| Probability of hospitalization after adverse drug reaction for GAS | 0.006 |  |  |  | 12.262 | 1916 | Multinomial |
| Probability of outpatient treatment after adverse drug reaction for GAS | 0.906 |  |  |  | 1735.321 | 1916 | Multinomial |
| Length of ED visit, mean days | 1.000 | 0.750 | 1.250 | 0.128 |  |  | Normal |
| Length of hospitalization, mean days | 2.000 | 1.500 | 2.500 | 0.255 |  |  | Normal |
| Length of outpatient visit, mean days | 1.000 | 1.183 | 1.417 | 0.060 |  |  | Normal |
| **Study Population Parameters** |
| ***Treatment Failure*** |
| *Average cost of a hospitalization OM* |  |  |  |  |  |  |  |
|  Payer costs | 2831.233 | 1502.356 | 4574.153 | 788.924 | 12.9 | 219.8 | Gamma |
|  Out-of-pocket costs | 185.955 | 98.675 | 300.430 | 51.817 | 12.9 | 14.4 | Gamma |
| *Average cost of ED visit OM* |  |  |  |  |  |  |  |
|  Payer costs | 329.485 | 284.089 | 378.196 | 24.019 | 188.2 | 1.8 | Gamma |
|  Out-of-pocket costs | 41.934 | 28.953 | 57.280 | 7.245 | 33.5 | 1.3 | Gamma |
| *Average cost of outpatient visit OM* |  |  |  |  |  |  |  |
|  Payer costs | 165.543 | 151.451 | 180.254 | 7.349 | 507.4 | 0.3 | Gamma |
|  Out-of-pocket costs | 26.607 | 23.756 | 29.616 | 1.495 | 316.6 | 0.1 | Gamma |
| *Average cost of a hospitalization AS* |  |  |  |  |  |  |  |
|  Payer costs | 2531.179 | 503.170 | 6165.305 | 1485.834 | 2.9 | 872.2 | Gamma |
|  Out-of-pocket costs | 166.248 | 33.048 | 404.937 | 97.590 | 2.9 | 57.3 | Gamma |
| *Average cost of ED visit AS* |  |  |  |  |  |  |  |
|  Payer costs | 394.317 | 312.135 | 485.958 | 44.393 | 78.9 | 5.0 | Gamma |
|  Out-of-pocket costs | 33.903 | 20.949 | 49.926 | 7.423 | 20.9 | 1.6 | Gamma |
| *Average cost of outpatient visit AS* |  |  |  |  |  |  |  |
|  Payer costs | 119.766 | 101.164 | 139.914 | 9.891 | 146.6 | 0.8 | Gamma |
|  Out-of-pocket costs | 25.844 | 23.536 | 28.259 | 1.205 | 459.9 | 0.1 | Gamma |
| *Average cost of a hospitalization GAS* |  |  |  |  |  |  |  |
|  Payer costs | 2531.179 | 503.170 | 6165.305 | 1485.834 | 2.9 | 872.2 | Gamma |
|  Out-of-pocket costs | 166.248 | 33.048 | 404.937 | 97.590 | 2.9 | 57.3 | Gamma |
| *Average cost of ED visit GAS* |  |  |  |  |  |  |  |
|  Payer costs | 394.317 | 312.135 | 485.958 | 44.393 | 78.9 | 5.0 | Gamma |
|  Out-of-pocket costs | 33.903 | 20.949 | 49.926 | 7.423 | 20.9 | 1.6 | Gamma |
| *Average cost of outpatient visit GAS* |  |  |  |  |  |  |  |
|  Payer costs | 119.766 | 101.164 | 139.914 | 9.891 | 146.6 | 0.8 | Gamma |
|  Out-of-pocket costs | 25.844 | 23.536 | 28.259 | 1.205 | 459.9 | 0.1 | Gamma |
| ***Adverse Drug Reaction Costs*** |
| Average cost of a hospitalization OM |  |  |  |  |  |  |  |
|  Payer costs | 5808.304 | 2554.008 | 10376.611 | 2016.378 | 8.3 | 700.0 | Gamma |
|  Out-of-pocket costs | 381.489 | 167.747 | 681.536 | 132.436 | 8.3 | 46.0 | Gamma |
| Average cost of ED visit OM |  |  |  |  |  |  |  |
|  Payer costs | 456.962 | 384.197 | 535.945 | 38.736 | 139.2 | 3.3 | Gamma |
|  Out-of-pocket costs | 43.372 | 30.147 | 58.964 | 7.370 | 34.6 | 1.3 | Gamma |
| Average cost of outpatient visit OM |  |  |  |  |  |  |  |
|  Payer costs | 198.957 | 106.157 | 320.420 | 55.024 | 13.1 | 15.2 | Gamma |
|  Out-of-pocket costs | 32.899 | 17.463 | 53.141 | 9.163 | 12.9 | 2.6 | Gamma |
| Average cost of a hospitalization AS |  |  |  |  |  |  |  |
|  Payer costs | 7747.178 | 3218.628 | 14230.262 | 2841.732 | 7.4 | 1042.4 | Gamma |
|  Out-of-pocket costs | 508.834 | 211.399 | 934.643 | 186.645 | 7.4 | 68.5 | Gamma |
| Average cost of ED visit AS |  |  |  |  |  |  |  |
|  Payer costs | 499.596 | 400.837 | 609.067 | 53.174 | 88.3 | 5.7 | Gamma |
|  Out-of-pocket costs | 42.604 | 23.369 | 67.520 | 11.332 | 14.1 | 3.0 | Gamma |
| Average cost of outpatient visit AS |  |  |  |  |  |  |  |
|  Payer costs | 140.591 | 109.054 | 176.074 | 17.120 | 67.4 | 2.1 | Gamma |
|  Out-of-pocket costs | 30.800 | 12.829 | 56.503 | 11.270 | 7.5 | 4.1 | Gamma |
| Average cost of a hospitalization GAS |  |  |  |  |  |  |  |
|  Payer costs | 8122.610 | 3317.148 | 15042.580 | 3027.034 | 7.2 | 1128.1 | Gamma |
|  Out-of-pocket costs | 533.493 | 217.870 | 987.996 | 198.816 | 7.2 | 74.1 | Gamma |
| Average cost of ED visit GAS |  |  |  |  |  |  |  |
|  Private payer costs | 501.624 | 397.707 | 617.421 | 56.112 | 79.9 | 6.3 | Gamma |
|  Out-of-pocket costs | 39.508 | 20.289 | 65.026 | 11.497 | 11.8 | 3.3 | Gamma |
| Average cost of outpatient visit GAS |  |  |  |  |  |  |  |
|  Payer costs | 139.852 | 103.042 | 182.197 | 20.230 | 47.8 | 2.9 | Gamma |
|  Out-of-pocket costs | 33.385 | 12.427 | 64.517 | 13.475 | 6.1 | 5.4 | Gamma |
| **Other Productivity Parameters** |
| Travel time for hospitalization, ED, outpatient, or office visit (hours) | 0.83 | 0.75 | 0.92 | 0.04 |  |  | Normal |

Notes: ADR = adverse drug reaction; AS = acute sinusitis; ED = emergency department; GAS = Group A streptococcal pharyngitis; OM = otitis media; TF = treatment failure

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