Supplementary Table 1. Codes to identify patients with potentially complicated urinary tract infections for exclusion.

|  |  |
| --- | --- |
| **Conditions** | **ICD-9-CM diagnosis codes** |
| Urologic abnormalities | 188.0, 188.1, 188.2, 188.3, 188.4, 188.5, 188.6, 188.7, 188.8, 188.9, , 594.8, 594.9, 599.60, 599.69, V13.00, V13.01, 198.1, 233.9, 236.90, 236.99, 592.9, 599.9, 619.0, 753.5, 753.9, V10.50, V10.59, V13.09, V44.6, V45.74 |
| Spinal injury | 344.00, 344.01, 344.02, 344.03, 344.04, 344.09, 344.1, 344.2, 344.30, 344.31, 344.32, 344.40, 344.41, 344.42, 344.5, 344.60, 344.61, 344.81, 344.89, 344.9, 805.0, 805.1, 805.2, 805.3, 805.4, 805.5, 805.6, 805.7, 805.8, 805.9, 806.00, 806.01, 806.02, 806.03, 806.04, 806.05, 806.06, 806.07, 806.08, 806.09, 952.00, 952.01, 952.02, 952.03, 952.04, 952.05, 952.06, 952.07, 952.08, 952.09, 952.10, 952.11, 952.12, 952.13, 952.14, 952.15, 952.16, 952.17, 952.18, 952.19, 952.2, 952.3, 952.4, 952.8, 952.9, 907.2 |
| Malignancy | 140.0-209.79, 233.7, 238.4, 238.5, 238.6, 238.7, , , V10.0-V10.91 |
|  |  |
| Pressure ulcers | 707.00, 707.01, 707.02, 707.03, 707.04, 707.05, 707.06, 707.09, 707.20, 707.21, 707.22, 707.23, 707.24, 707.25 |
| Multiple sclerosis | 340 |
| Inflammatory bowel disease | 555.1, 555.2, 555.9, 556.0, 556.1, 556.2, 556.3, 556.4, 556.4, 556.5, 556.6, 556.8, 556.9 |
| Organ transplant | , V42.0, V42.1, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89 |
| HIV/AIDS | 042 |
| Stroke | 433.xx-438.xx, V12.54 |
| Chemotherapy or radiation | V58.0, V58.11, V58.12, V66.1, V66.2, V67.1, V67.2, V15.3 |
| Interstitial cystitis, other urologic problems, and other urologic infections | 595.1, 595.2, 595.3, 595.4, 595.81, 595.82, 595.89, 596.0, 596.1, 596.2, 596.3, 596.4, 596.5, 596.51, 596.52, 596.53, 596.54, 596.55, 596.59, 596.6, 596.7, 596.8, 596.9, , , , |
| Pyelonephritis | 590.00, 590.01, 590.10, 590.11, 590.2, 590.3, 590.80, 590.81, 590.9 |
| Kidney stones | 592.0, 592.1, 592.9 |
| Renal failure | 403.01, 403.11-403.91, 404.02, 404.03, 404.12, 404.13, 404.92, 404.93, 584.5-584.9, 585.3, 585.4, 585.5, 585.6, 585.9, 586, V45.11, V45.12, V56.0, V56.1, V56.2, V56.3, V56.8 |
| Rheumatologic conditions | 714.0, 714.1, 714.2, 714.30, 714.31, 714.32, 714.33, 714.81, 714.9, 720.0, 710.2, 710.3, 710.8, 710.9, 710.0 |
| Sarcoidosis | 135 |
| Cystic fibrosis | 277.00, 277.01, 277.02, 277.03, 277.09 |
| Parkinson’s | 332.0, 332.1 |
| Diabetes | 249.xx-250.xx |
| Tuberculosis | 010.xx-018.xx |
| Viral hepatitis B | 070.30 |
| Sickle cell disease | 282.xx |
| Seizures | 345.xx |

Supplementary Table 2. Medications to identify patients with potentially complicated urinary tract infections for exclusion.

|  |  |
| --- | --- |
| **Conditions** | **Medication Names** |
| Autoimmune conditions, steroids, or other immunosuppressants | Abatacept, adalimumab, alefacept, ambrisentan, aminocaproic acid, azathioprine, balsalazide disodium, belimumab, bosentan, canakinumab, certolizumab pegol, cevimeline, ciprofloxacin/dexamethasone\*, cyclophosphamide, cyclosporine, dapsone, dexamethasone\*, dexamethasone acetate\*, dexamethasone sodium phosphate\*, dexamethasone, micronized\*, dexamethasone/neomycin sulfate/polymyxin B sulfate\*, dexamethasone/tobramycin\*, efalizumab, etanercept, febuxostat, gentamicin sulfate/prednisolone acetate\*, golimumab, immune globulin, infliximab, leflunomide, mercaptopurine, mesalamine, methotrexate, methylprednisolone\*, methylprednisolone acetate\*, methylprednisolone sodium succinate\*, methylPREDNISolone, micronized\*, mycophenolate mofetil, mycophenolate sodium, neomycin/polymyxin B /prednisolone acetate\*, omalizumab, prednisolone\*, prednisolone acetate\*, prednisolone acetate/sulfacetamide sodium\*, prednisolone sodium phosphate\*, prednisolone sodium phosphate/sulfacetamide Sodium\*, prednisone\*, rituximab, sildenafil, sirolimus, sulfasalazine, tacrolimus, tocilizumab, tofacitinib, ustekinumab |
| Diabetes medications and testing supplies | Acarbose, exenatide, glimepiride, glipizide, glipizide/metformin, glucose meter, glucose meter test control, glucose meter test control strips, glucose blood test, glyburide, glyburide, micronized, glyburide/metformin hydrochloride, insulin aspart, insulin detemir, insulin glargine, insulin glulisine, insulin human isophane (NPH), NPH/insulin human regular, insulin human regular, insulin lispro, insulin syringe, linagliptin, liraglutide, metformin, metformin/pioglitazone, metformin/repaglinide, metformin/rosiglitazone, metformin/saxagliptin, metformin/sitagliptin, pioglitazone hydrochloride, rosiglitazone maleate, sitagliptin phosphate |
| HIV/AIDS | Abacavir, abacavir/lamivudine, abacavir/lamivudine/zidovudine, cobicistat/elvitegravir/emtricitabine/tenofovir, dapsone, darunavir, efavirenz, efavirenz/emtricitabine/tenofovir, emtricitabine/rilpivirine/tenofovir, etravirine, lamivudine, lamivudine/zidovudine, lopinavir/ritonavir, raltegravir, ritonavir, tenofovir, zidovudine |
| Underlying urologic problems (including medications that can contribute to and treat bladder retention, bladder pain, or recurrent urinary tract infections) | Atropine/chlorpheniramine/hyoscyamine, benzoic acid, hyoscyamine, methenamine, methylene blue, carbidopa, carbidopa/entacapone/levodopa, carbidopa/levodopa, darifenacin hydrobromide, fesoterodine fumarate, flavoxate hydrochloride, hyoscyamine/methenamine/methylene blue, hyoscyamine sulfate, hyoscyamine sulfate/phenyltoloxamine citrate, methenamine hippurate, methenamine mandelate, mirabegron, oxybutynin, oxybutynin chloride, pentosan polysulfate sodium, phenazopyridine hydrochloride, solifenacin succinate, tolterodine tartrate, trihexyphenidyl, trospium chloride |
| Malignancy or myelodysplastic syndromes | Apixaban, Aprepitant, cyclophosphamide, cyclosporine, dabigatran, darbepoetin alfa, deferasirox, enoxaparin, epoetin alfa, filgrastim, fluorouracil, fondaparinux, immune globulin, letrozole, leucovorin, octreotide acetate, pegfilgrastim, raloxifene hydrochloride, tacrolimus, tamoxifen citrate |
| Long-term systemic anti-infectives | Amphotericin B, amphotericin B liposome, ethambutol, flucytosine, isoniazid, itraconazole, posaconazole, rifabutin, rifampin, rifapentine, voriconazole |
| Other (includes medications for pregnancy, stroke, seizures, erectile dysfunction, cystic fibrosis, and chronic kidney disease) | Clopidogrel, darbepoetin alfa, dutasteride, dornase alfa, enoxaparin, epoetin alfa, felbamate, hydrochlorothiazide/methyldopa, lamotrigine, methyldopa, phenytoin, prasugrel, ranolazine, rho(D) immune globulin, rivaroxaban, roflumilast, sildenafil, tadalafil, tiagabine, ticagrelor, tranexamic acid |

Supplementary Table 3. Codes to identify pregnant patients for exclusion.

|  |  |
| --- | --- |
| **Codes** | **ICD-9-CM diagnosis codes** |
| ICD-9-CM diagnosis codes | 630-679.14, V22.X-V24.X, V27.X, V28.XX, V72.42 |
| ICD-9-CM procedure codes | 69.01, 69.02, 69.51, 69.52, 72.0-75.99 |
| CPT codes | 59000-59899, 36460, 76941, 85460, 85461, 76801-76828, 83030-83033, 83661-83664 |
| UB-04 Revenue codes | 0720-0729 |

Supplementary Table 4. Codes to Identify Patients with Non-UTI Bacterial Infections for Exclusion

|  |  |
| --- | --- |
| **Infection** | **ICD-9-CM diagnosis codes** |
| Septicemia | 003.1, 020.2, 022.3, 036.2, 036.42, 038.0, 038.1, 038.10, 038.11, 038.12, 038.19, 038.2, 038.3, 038.4, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9, 040.82, 449, 421.0, 421.1, 421.9, 422.92, 790.7 |
| Clinical sepsis | 995.91, 995.92, 785.52 |
| Pneumonia | 003.22, 020.3, 020.4, 020.5, 021.2, 022.1, 039.1, 073.0, 073.7, 073.8, 073.9, 083.0, 480.0, 480.1, 480.2, 480.3, 480.8, 480.9, 481, 482.0, 482.1, 482.2, 482.3, 482.30, 482.31, 482.32, 482.39, 482.4, 482.40, 482.41, 482.42, 482.49, 482.8, 482.81, 482.82, 482.83, 482.84, 482.89, 482.9, 483, 483.0, 483.1, 483.8, 484, 484.1, 484.3, 484.5, 484.6, 484.7, 484.8,  485, 486, 510.0, 510.9, 513.0, 997.31 |
| Skin and soft tissue infection (SSTI) | 020.1, 021.0, 022.0, 032.85, 035, 039.0, 039.3, 039.4, 039.8, 039.9, 040.0, 040.1, 040.2, 040.3, 040.42, 040.81, 078.3, 082.0, 082.1, 082.2, 082.3, 082.40, 082.41, 082.49, 082.8, 082.9, 083.0, 083.1, 083.2, 083.8, 083.9, 087.0, 087.1, 087.9, 088.0, 088.81, 088.82, 088.89, 088.9, 098.50, 567.31, 680.0, 680.1, 680.2, 680.3, 680.4, 680.5, 680.6, 680.7, 680.8, 680.9, 681.00, 681.01, 681.02, 681.10, 681.11, 681.9, 682.0, 682.1, 682.2, 682.3, 682.4, 682.5, 682.6, 682.7, 682.8, 682.9, 683, 684, 685.0, 686.0, 686.00, 686.01, 686.09, 686.1, 686.8, 686.9, 675.00, 675.01, 675.02, 675.03, 675.04, 675.10, 675.11, 675.12, 675.13, 675.14, 675.80, 675.81, 675.82, 675.83, 675.84, 675.90, 675.91, 675.92, 675.93, 675.94, 705.83, 727.89, 7280, 728.86 |
| Surgical site infection (SSI) | 9985, 998.51, 998.59, 996.60, 996.61, 996.62, 996.63, 996.65, 996.66, 996.67, 996.68, 996.69 |
| Bone infection | 003.23, 003.24, 0261, 036.82, 098.50, 098.51, 098.52, 098.53, 098.59, 376.03, 513.1, 519.2, 711.00, 711.01, 711.02, 711.03, 711.04, 711.05, 711.06, 711.07, 711.08, 711.09, 711.90, 711.91, 711.91, 711.92, 711.93, 711.94, 711.95, 711.96, 711.97, 711.98, 711.99, 730.00, 730.01, 730.02, 730.03, 730.04, 730.05, 730.06, 730.07, 730.08, 730.09, 730.10, 730.11, 730.12, 730.13, 730.14, 730.15, 730.16, 730.17, 730.18, 730.19, 730.20, 730.21, 730.22, 730.23, 730.24, 730.25, 730.26, 730.27, 730.28, 730.29, 730.30, 730.31, 730.32, 730.33, 730.34, 730.35, 730.36, 730.37, 730.38, 730.39, 730.80, 730.81, 730.82, 730.83, 730.84, 730.85, 730.86, 730.87, 730.88, 730.89, 730.90, 730.91, 730.92, 730.93, 730.94, 730.95, 730.96, 730.97, 730.98, 730.99 |
| Organ infection | 003.21, 032.82, 036.0, 036.1, 036.3, 036.40, 036.41, 036.43, 036.89, 091.81, 100.81, 245.0, 253.8, 254.1, 289.59, 320.0, 320.1, 320.2, 320.3, 320.7, 320.8, 320.81, 320.82, 320.89, 320.9, 322.9, 323.1, 323.4, 323.41, 323.42, 324.0, 324.1, 324.9, 420, 420.0, 420.90, 420.99 |
| Female pelvic infection | 091.0, 091.1, 091.2, 091.3, 091.4, 091.50, 091.51, 091.52, 091.61, 091.62, 091.69, 091.7, 091.82, 091.89, 091.9, 092.0, 092.9, 098.0, 098.10, 098.11, 098.12, 098.13, 098.14, 098.15, 098.16, 098.17, 098.19, 0982, 098.30, 098.31, 098.32, 098.33, 098.34, 098.35, 098.36, 098.37, 098.39, 098.40, 098.41, 098.42, 098.43, 098.49, 098.7, 098.81, 098.82, 098.83, 098.84, 098.85, 098.86, 098.89, 099.0, 099.1, 099.2, 099.3, 099.4, 099.40, 099.41, 099.49, 099.50, 099.51, 099.52, 099.53, 099.54, 099.55, 099.56, 099.59, 099.8, 099.9, 597.80, 597.81, 597.89, 614.0, 614.1, 614.2, 614.3, 614.4, 614.5, 614.7, 614.9, 615.0, 615.1, 615.9, 616.0, 616.10, 616.3, 616.4, 634.00, 634.01, 634.02, 635.00, 635.01, 635.02, 636.00, 636.01, 636.02, 637.00, 637.01, 637.02, 638.00, 638.01, 638.02, 639.0, 646.60, 646.61, 646.62, 646.63, 646.64, 647.00, 647.01, 647.02, 647.03, 647.04, 647.10, 647.11, 647.12, 647.13, 647.14, 647.20, 647.21, 647.22, 647.23, 647.24, 647.80, 647.81, 647.82, 647.83, 647.84, 658.40, 658.41, 658.43, 659.30, 659.31, 659.33, 670.00, 670.02, 670.04, 670.10, 670.12, 670.14, 670.20, 670.22, 670.24, 670.30, 670.32, 670.34, 670.80, 670.82, 670.84 |
| Gastroenteritis | 001.0, 001.1, 001.9, 002.0, 002.1, 002.2, 002.3, 002.9, 003.0, 003.20, 003.29, 003.8, 003.9, 004.0, 004.1, 004.2, 004.3, 004.8, 004.9, 005.0, 005.1, 005.2, 005.3, 005.4, 005.8, 005.81, 005.89, 005.9, 008.0, 008.00, 008.01, 008.02, 008.03, 008.04, 008.09, 008.1, 008.2, 008.3, 008.41, 008.42, 008.43, 008.44, 008.46, 008.47, 008.49, 008.5, 009.0, 009.1, 009.2, 009.3, 021.1, 022.2 |
| Intraabdominal abscess / peritonitis | 032.83, 039.2, 530.19, 530.86, 536.41, 540.0, 540.1, 540.9, 562.00, 562.01, 562.02, 562.03, 562.10, 562.11, 562.12, 562.13, 566, 567.0, 567.1, 567.2, 567.21, 567.22, 567.23, 567.29, 567.38, 567.39, 567.9, 569.5, 569.61, 572.0, 574.00, 574.01, 574.30, 574.31, 574.60, 574.61, 574.80, 574.81, 575.0, 575.12, 577.0 |
| Upper respiratory tract infection | 460, 461.0, 461.1, 461.2, 461.3, 461.8, 461.9, 462, 464.0, 464.00, 464.01, 464.10, 464.11, 464.20, 464.21, 464.30, 464.31, 464.4, 464.50, 464.51, 465.0, 465.8, 465.9, 466.0, 466.11, 466.19, 473.0, 473.1, 473.2, 473.3, 473.8, 473.9, 476.0, 476.1 |
| Tonsillitis | 032.0, 032.1, 032.2, 032.3, 032.81, 032.89, 032.9, 033.0, 033.1, 033.8, 033.9, 034.0,  034.1, 076.0, 076.1, 076.9, 098.6, 370.55, 376.01, 376.02, 376.03, 383.20, 383.21, 383.22, 463, 474.0, 474.00, 474.01, 474.02, 475, 478.19, 478.21, 478.22, 478.24, 478.29, 4785, 478.71, 478.79, 4789, 519.01 |
| Otitis | 380.10, 380.11, 380.13, 380.14, 380.16, 381.00, 381.01, 381.02, 381.03, 381.10, 381.19,  381.20, 381.29, 381.3, 381.4, 381.50, 381.51, 381.52, 382.0, 382.00, 382.01, 382.02, 382.3, 382.4, 382.9, 383.00, 383.01, 383.02, 383.1, 384.00, 384.01, 384.09, 384.1 |
| Oral infections | 522.0, 522.5, 522.6, 522.7, 523.00, 523.01, 523.10, 523.11, 523.30, 523.31, 523.32, 523.33, 523.40, 523.41, 523.42, 526.4, 527.3, 528.3, 528.5, 529.0 |

Supplementary Table 5. Inappropriate antibiotic therapy by agent for UTI as defined by IDSA Clinical Practice Guidelines, by rural-urban status. Note: TMP-SMX, trimethoprim-sulfamethoxazole. \*286 (0.3%) rural and 1985 (0.3%) urban patients received an appropriate agent as well as another non-first-line agent on the same date. The results presented in the table represent the first-line agents but do not display the numbers for the non-first-line agents. \*\*The women in this category are not included in another agent-related category.

|  |  |  |  |
| --- | --- | --- | --- |
|  | No. (%) | | |
|  | Urban  (N=578,117) | Rural  (N=92,333) | Total  (N=670,450) |
| Appropriate agent\* | 307,220 (53.1) | 49,942 (54.1) | 357,162 (53.3) |
| Nitrofurantoin | 154,362 (26.7) | 19,227 (20.8) | 173,589 (25.9) |
| TMP-SMX | 152,773 (26.4) | 30,706 (33.3) | 183,479 (27.4) |
| Fosfomycin | 85 (0.0) | 9 (0.0) | 94 (0.0) |
| Inappropriate agent | 270,897 (46.9) | 42,391 (45.9) | 313,288 (46.7) |
| Fluoroquinolones | 240,982 (41.7) | 37,854 (41.0) | 278,836 (41.6) |
| β-lactams | 29,023 (5) | 4,411 (4.8) | 33,434 (5) |
| Multiple (0 first-line agent) | 403 (0.1) | 58 (0.1) | 461 (0.1) |
| Multiple (≥2 first-line agent)\*\* | 489 (0.1) | 68 (0.1) | 557 (0.1) |

Supplementary Table 6. Inappropriate antibiotic therapy by duration for UTI as defined by IDSA Clinical Practice Guidelines, by rural-urban status. Note: TMP-SMX, trimethoprim-sulfamethoxazole. \*286 (0.3%) rural and 1985 (0.3%) urban patients received an appropriate agent as well as another non-first-line agent on the same date. The results presented in the table represent the first-line agents but do not display the numbers for the non-first-line agents. \*\*The women in this category are not included in another agent-related category.

|  |  |  |  |
| --- | --- | --- | --- |
|  | No. (%) | | |
|  | Urban  (N=575,240) | Rural  (N=91,921) | Total  (N=667,161) |
| Appropriate duration | 144,604 (25.1) | 14,820 (16.1) | 159,424 (23.9) |
| Nitrofurantoin (5 day regimen) | 29,532 (19.3) | 2,780 (14.6) | 32,312 (18.8) |
| TMP-SMX (3 day regimen) | 45,035 (29.6) | 4,762 (15.6) | 49,797 (27.3) |
| Fosfomycin (1 day regimen) | 79 (94.0) | 9 (100.0) | 88 (94.6) |
| Fluoroquinolones (3 day regimen) | 51,793 (21.5) | 4,879 (12.9) | 56,672 (20.3) |
| β-lactams (3-7 day regimen) | 18,165 (62.6) | 2,390 (54.2) | 20,555 (61.5) |
| Inappropriate duration – shorter or longer than recommended duration | 430,636 (74.9) | 77,101 (83.9) | 507,737 (76.1) |
| Nitrofurantoin (non-5 day regimen) | 123,566 (80.7) | 16,299 (85.4) | 139,865 (81.2) |
| TMP-SMX (non-3 day regimen) | 107,018 (70.4) | 25,806 (84.4) | 132,824 (72.7) |
| Fosfomycin (non-1 day regimen) | 5 (6.0) | 0 (0.0) | 5 (5.4) |
| Fluoroquinolones (non-3 day regimen) | 189,189 (78.5) | 32,975 (87.1) | 222,164 (79.7) |
| β-lactams (non-3-7 day regimen) | 10,858 (37.4) | 2,021 (45.8) | 12,879 (38.5) |
| Inappropriate duration – shorter than recommended duration | 5,545 (1.0) | 696 (0.8) | 6,241 (0.9) |
| Nitrofurantoin (<5 day regimen) | 4,557 (3.0) | 546 (2.9) | 5,103 (3.0) |
| TMP-SMX (<3 day regimen) | 358 (0.2) | 57 (0.2) | 415 (0.2) |
| Fosfomycin (<1 day regimen) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Fluoroquinolones (<3 day regimen) | 537 (0.2) | 82 (0.2) | 619 (0.2) |
| β-lactams (<3-7 day regimen) | 93 (0.3) | 11 (0.2) | 104 (0.3) |
| Inappropriate duration – longer than recommended duration | 425,091 (73.9) | 76,405 (83.1) | 501,496 (75.2) |
| Nitrofurantoin (>5 day regimen) | 119,009 (77.7) | 15,753 (82.6) | 134,762 (78.3) |
| TMP-SMX (>3 day regimen) | 106,660 (70.1) | 25,749 (84.2) | 132,409 (72.5) |
| Fosfomycin (>1 day regimen) | 5 (6.0) | 0 (0.0) | 5 (5.4) |
| Fluoroquinolones (>3 day regimen) | 188,652 (78.3) | 32,893 (86.9) | 221,545 (79.5) |
| β-lactams (>3-7 day regimen) | 10,765 (37.1) | 2,010 (45.6) | 12,775 (38.2) |

Supplementary Figure 1. Flow chart of of study population derivation.

Premenopausal women age 18-44 who received an outpatient diagnosis of uncomplicated UTI with an accompanying oral antibiotic from   
April 1, 2011 and June 30, 2015 (N = **1,349,276)**

Index date on and after April 1st 2011 (n=**604,398)**

No recent antibiotics (n=**670,450**)

No recent history of UTI (n=**710,466**)

No recent infections (n=**739,051**)

No chronic health conditions (N = **844,769**)

No recent hospital admission (N = **952,685**)

Excluded women without continuous insurance enrollment and prescription drug coverage in the 180 days prior to index antibiotic prescription (N = **285,942**)

Continuous insurance enrollment and prescription drug coverage (N=**1,060,334**)

Excluded pregnant women (N = **92,781**)

Non-pregnant women (N = **967,553**)

Excluded women with inpatient hospital admission in the 90 days   
prior to the index antibiotic prescription (N = **14,868**)

Excluded women with chronic health conditions in the 180 days   
prior to the index antibiotic prescription (N = **107,916**)

Excluded women with infections in the 30 days   
prior to and on date of index antibiotic prescription (N = **105,718)**

Excluded women with a history of UTI (N = **28,585)**

Excluded women who received antibiotics in the 30 days   
prior to the index antibiotic prescription (N=**40,016**)

Supplementary Figure 2. Mean quarterly use of inappropriate agents among women diagnosed with uncomplicated urinary tract infection by rural-urban status and geographic region.

Chart, scatter chart

Description automatically generated

Supplementary Figure 3. Mean quarterly use of inappropriate agents by rural-urban status and provider specialty.

Chart, scatter chart

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Supplementary Figure 4. Risk ratio estimates for receipt of inappropriate antibiotic agent, stratified by geographic region and provider specialty.

A screenshot of a cell phone

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Supplementary Figure 5. Mean quarterly use of antibiotic prescriptions with inappropriate duration rural-urban status and antibiotic agent.

Chart

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Supplementary Figure 6. Mean quarterly use of antibiotic prescriptions with inappropriate duration by rural-urban status and geographic region.

Chart

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Supplementary Figure 7. Mean quarterly use of antibiotic prescriptions with inappropriate duration by rural-urban status and provider specialty.

Chart

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Supplementary Figure 8. Risk ratio estimates for receipt of inappropriate antibiotic duration, stratified by geographic region and provider specialty.

A screenshot of a cell phone

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