|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Total Number** | **Not Referred (% from total)** | **Referred (% from total)** | **p-value** |
| 14663 | 12564 (85.7%) | 2099 (14.3%) | - |
| **Gender** | Male  Female | 3697  10966 | 2748 (74.3%)  9816 (89.5%) | 949 (25.7%)  1150 (10.5%) | **<0.001** |
| **Age** | <35  35-50  50-65  65-80  >80 | 2388  4823  4959  2084  409 | 2173 (91.0%)  4263 (88.4%)  4096 (82.6%)  1704 (81.8%)  328 (80.2%) | 215 (9.0%)  560 (11.6%)  863 (17.4%)  380 (18.2%)  81 (19.8%) | **<0.001** |
| **Race** | White  Black  Hispanic\*  Asian  Indian  Pacific  Unknown | 9083  4691  10  579  34  35  231 | 7716 (84.9%)  4094 (87.3%)  8 (80.0%)  483 (83.4%)  33 (97.1%)  29 (82.9%)  201 (87.0%) | 1367 (15.1%)  597 (12.7%)  2 (20.0%)  96 (16.6%)  1 (2.9%)  6 (17.1%)  30 (13.0%) | **0.002** |
| **UA RBC** | 3-19  20-49  50-99  >99 | 12574  821  562  706 | 10995 (87.4%)  599 (73.0%)  444 (79.0%)  526 (74.5%) | 1579 (12.6%)  222 (27.0%)  118 (21.0%)  180 (25.5%) | **<0.001** |
| **DM** | Yes  No | 4455  10208 | 3787 (85.0%)  8777 (86.0%) | 668 (15.0%)  1431 (14.0%) | 0.121 |
| **HTN** | Yes  No | 6532  8131 | 5504 (84.3%)  7061 (86.8%) | 1028 (15.7%)  1071 (13.2%) | **<0.001** |
| **Obesity** | Yes  No | 907  13756 | 783 (86.3%)  11781 (85.6%) | 124 (13.7%)  1975 (14.4%) | 0.568 |
| **Tobacco use** | Never  Former  Current | 9641  2810  2212 | 8401 (87.1%)  2308 (82.1%)  1855 (83.9%) | 1240 (12.9%)  502 (17.9%)  357 (16.1%) | **<0.001** |
| **Repeat UA** | Yes  No | 8148  6515 | 6497 (79.7%)  6067 (93.1%) | 1651 (20.3%)  448 (6.9%) | **<0.001** |
| **Imaging** | Yes  No | 5239  9424 | 3582 (68.4%)  8982 (95.3%) | 1657 (31.6%)  442 (4.7%) | **<0.001** |
| **Cystoscopy** | Yes  No | 897  13766 | 0 (0.0%)  12564 (91.3%) | 897 (100%)  1202 (8.7%) | **<0.001** |
| **Complete Evaluation** | Yes  No | 801  13862 | 1296 (0%)  1256 (90.6%) | 801 (100%)  1298 (9.4%) | **<0.001** |
| **UTI** | Yes  No | 3251  11412 | 2448 (75.3%)  10116 (88.6%) | 803 (24.7%)  1296 (11.4%) | **<0.001** |

**Supplementary Table 1. Demographic Variables and Stratifications According to Urology Referral Including Patients Initially Presenting with Urinary Tract Infections**

UA: urinalysis; RBC: red blood cells; DM: diabetes mellitus; HTN: hypertension; UTI: urinary tract infection

\*Most Hispanic patients are identified as white

**Supplementary Table 2. Predictors of Urology Referral on Univariable and Multivariable Regression Analyses Including Patients Initially Presenting with Urinary Tract Infections**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **UVA**  **OR (95% CI)** | **UVA**  **p-value** | **MVA**  **OR (95% CI)** | **MVA**  **p-value** |
| **Gender** | Female | 0.34 (0.31-0.37) | **<0.001** | 0.355 (0.32-3.79) | **<0.001** |
| **Age** | <35  35-50  50-65  65-80  >80 | Ref  1.33 (1.13-1.57)  2.13 (1.82-2.49)  2.25 (1.89-2.70)  2.50 (1.89-3.31) | Ref  **0.001**  **<0.001**  **<0.001**  **<0.001** | Ref  1.33 (1.12-1.59)  2.03 (1.71-2.42)  2.29 (1.88-2.80)  2.42 (1.78-3.28) | Ref  **<0.001**  **<0.001**  **<0.001**  **<0.001** |
| **Race** | White  Black  Hispanic\*  Asian  Indian  Pacific Islander  Unknown | Ref  0.82 (0.74-0.91)  1.41 (0.30-6.65)  1.12 (0.90-1.41)  0.17 (0.02-1.25)  1.17 (0.48-2.82)  0.84 (0.57-1.24) | Ref  **<0.001**  0.663  0.320  0.082  0.730  0.386 | Ref  0.74 (0.66-0.83)  1.22 (0.24-6.16)  1.08 (0.85-1.38)  0.17 (0.02-1.27)  0.98 (0.39-2.48)  0.76 (0.51-1.14) | Ref  0.189  0.897  0.575  0.139  0.153  0.627 |
| **UA RBC** | 3-19  20-49  50-99  >99 | Ref  2.58 (2.19-3.04)  1.85 (1.50-2.28)  2.38 (2.00-2.85) | Ref  **<0.001**  **<0.001**  **<0.001** | Ref  2.77 (2.33-3.30)  2.22 (1.77-2.77)  3.11 (2.57-3.78) | Ref  **<0.001**  **<0.001**  **<0.001** |
| **DM** | Yes | 1.08 (0.98-1.20) | 0.121 | - | - |
| **HTN** | Yes | 1.23 (1.12-1.35) | **<0.001** | 1.16 (1.04-1.29) | **0.007** |
| **Obesity** | Yes | 0.95 (0.78-1.15) | 0.568 | - | - |
| **Tobacco** | Never  Former  Current | Ref  1.47 (1.32-1.65)  1.30 (1.15-1.48) | Ref  **<0.001**  **<0.001** | Ref  1.00 (0.88-1.14)  1.06 (0.92-1.22) | Ref  0.456  0.538 |
| **Repeat UA** | Yes | 3.44 (3.08-3.84) | **<0.001** | 3.38 (3.02-3.79) | **<0.001** |

UVA: univariable analysis; MVA: multivariable analysis; OR: odds ratio; UA: urinalysis; RBC: red blood cells; DM: diabetes mellitus; HTN: hypertension; UTI: urinary tract infection

\*Most Hispanic patients are identified as white

**Supplementary Table 3.** **Predictors of Complete Evaluation on Univariable and Multivariable Regression Analyses Including Patients Initially Presenting with Urinary Tract Infections**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **UVA**  **OR (95% CI)** | **UVA**  **p-value** | **MVA**  **OR (95% CI)** | **MVA**  **p-value** |
| **Gender** | Female | 0.44 (0.38-0.50) | **<0.001** | 0.51 (0.43-0.59) | **<0.001** |
| **Age** | <35  35-50  50-65  65-80  >80 | Ref  1.61 (1.21-2.14)  2.59 (1.98-3.39)  2.95 (2.20-3.96)  3.24 (2.11-4.98) | Ref  **0.001**  **<0.001**  **<0.001**  **<0.001** | Ref  1.57 (1.18-2.10)  2.34 (1.76-3.11)  2.75 (2.00-3.78)  2.85 (1.81-4.48) | Ref  **0.002**  **<0.001**  **<0.001**  **<0.001** |
| **Race** | White  Black  Hispanic\*  Asian  Indian  Pacific Islander  Unknown | Ref  0.73 (0.62-0.86)  1.78 (0.23-14.04)  1.41 (1.03-1.93)  0.00 (0.00-.)  2.06 (0.73-5.86)  0.72 (0.38-1.37) | Ref  **<0.001**  0.586  **0.030**  0.998  0.175  0.320 | Ref  0.64 (0.54-0.76)  1.75 (0.21-14.43)  1.40 (1.02-1.94)  0.00 (0.00-.)  1.85 (0.63-5.50)  0.71 (0.37-1.36) | Ref  **<0.001**  0.604  **0.040**  0.998  0.266  0.302 |
| **UA RBC** | 3-19  20-49  50-99  >99 | Ref  2.49 (1.97-3.15)  1.72 (1.25-2.36)  2.41 (1.87-3.10) | Ref  **<0.001**  **0.001**  **<0.001** | Ref  2.54 (2.00-3.24)  1.98 (1.43-2.76)  2.97 (2.28-3.88) | Ref  **<0.001**  **<0.001**  **<0.001** |
| **DM** | Yes | 1.02 (0.87-1.19) | 0.835 | - | - |
| **HTN** | Yes | 1.41 (1.22-1.62) | **<0.001** | 0.99 (0.84-1.16) | 0.870 |
| **Obesity** | Yes | 1.27 (0.97-1.66) | 0.085 | - | - |
| **Tobacco** | Never  Former  Current | Ref  1.50 (1.26-1.78)  1.28 (1.05-1.56) | Ref  **<0.001**  **0.015** | Ref  1.10 (0.91-1.32)  1.17 (0.95-1.45) | Ref  0.322  0.142 |
| **Repeat UA** | Yes | 4.37 (3.61-5.28) | **<0.001** | 4.10 (3.38-4.97) | **<0.001** |

UVA: univariable analysis; MVA: multivariable analysis; OR: odds ratio; UA: urinalysis; RBC: red blood cells; DM: diabetes mellitus; HTN: hypertension; UTI: urinary tract infection

\*Most Hispanic patients are identified as white