**Table 2:** Characteristics of participants by 30-day unplanned readmission and primary or secondary diagnosis of heart failure

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variable | Primary heart failure (n=2,635,673) | | | Secondary heart failure (n=8,342,383) | | |
| Not readmitted | Readmitted | p-value | Not readmitted | Readmitted | p-value |
| Demographics | | | | | | |
| Age (years) | 72.3±14.5 | 73.1±14.1 | <0.001 | 73.1±13.7 | 73.1±13.6 | 0.15 |
| Female | 49.5% | 49.7% | 0.12 | 52.5% | 52.3% | 0.006 |
| Weekend admission | 23.5% | 24.1% | <0.001 | 24.3% | 24.6% | <0.001 |
| Year  2010  2011  2012  2013  2014 | 19.5%  19.1%  18.4%  20.6%  22.4% | 20.5%  19.8%  18.5%  20.1%  21.2% | <0.001 | 18.7%  19.0%  18.9%  21.1%  22.4% | 19.2%  19.7%  19.1%  20.4%  21.6% | <0.001 |
| Primary expected payer  Medicare  Medicaid  Private  Uninsured  No charge  Other | 73.1%  8.1% 11.9%  4.0%  0.4% 2.5% | 77.6%  9.2%  8.5%  2.4%  0.2%  2.0% | <0.001 | 77.1%  7.4%  10.8%  2.2%  0.3%  2.2% | 79.9%  8.2%  8.4%  1.6%  0.2%  1.7% | <0.001 |
| Median household income (percentile)  0-25th  26-50th  51-75th  76-100th | 31.5%  25.0%  23.3%  20.2% | 32.5%  24.8%  22.9%  19.8% | <0.001 | 30.7%  25.1%  23.4%  20.8% | 31.0%  25.0%  23.3%  20.6% | <0.001 |
| Cardiovascular comorbidities | | | | | | |
| Hypertension | 70.4% | 71.0% | <0.001 | 71.4% | 71.2% | 0.001 |
| Coronary artery disease | 44.0% | 46.9% | <0.001 | 44.7% | 46.4% | <0.001 |
| Previous myocardial infarction | 12.5% | 13.2% | <0.001 | 12.0% | 12.4% | <0.001 |
| Previous PCI | 9.8% | 10.5% | <0.001 | 9.3% | 9.7% | <0.001 |
| Previous CABG | 14.3% | 15.4% | <0.001 | 11.4% | 12.0% | <0.001 |
| Previous heart failure | 1.6% | 1.3% | <0.001 | 75.5% | 76.9% | <0.001 |
| Atrial fibrillation | 36.6% | 38.4% | <0.001 | 35.6% | 36.7% | <0.001 |
| Valvular heart disease | 0.5% | 0.4% | 0.001 | 11.8% | 12.2% | <0.001 |
| Previous stroke or TIA | 10.5% | 11.6% | <0.001 | 13.0% | 13.4% | <0.001 |
| Peripheral vascular disease | 11.2% | 12.9% | <0.001 | 12.3% | 13.8% | <0.001 |
| Pulmonary circulatory disorder | 0.4% | 0.3% | 0.001 | 7.7% | 8.0% | <0.001 |
| Non-cardiovascular comorbidities | | | | | | |
| Smoker | 27.4% | 26.6% | <0.001 | 26.5% | 26.8% | <0.001 |
| Alcohol misuse | 3.5% | 3.1% | <0.001 | 3.6% | 3.5% | 0.076 |
| Dyslipidemia | 45.1% | 44.1% | <0.001 | 43.9% | 42.5% | <0.001 |
| Obesity | 19.5% | 16.9% | <0.001 | 17.0% | 15.7% | <0.001 |
| Diabetes mellitus | 42.7% | 45.9% | <0.001 | 39.9% | 43.0% | <0.001 |
| Chronic lung disease | 33.3% | 37.2% | <0.001 | 30.6% | 33.4% | <0.001 |
| Hypothyroidism | 15.7% | 16.8% | <0.001 | 16.5% | 16.8% | <0.001 |
| Renal failure | 37.2% | 44.9% | <0.001 | 28.5% | 34.1% | <0.001 |
| Liver disease | 2.6% | 3.3% | <0.001 | 2.9% | 3.7% | <0.001 |
| Fluid and electrolyte disorders | 29.0% | 31.5% | <0.001 | 37.2% | 39.0% | <0.001 |
| Peptic ulcer disease | 0.03% | 0.04% | 0.003 | 0.04% | 0.04% | 0.59 |
| Anemia | 27.5% | 32.6% | <0.001 | 27.1% | 31.8% | <0.001 |
| Bleeding | 0.7% | 0.8% | <0.001 | 2.8% | 2.7% | 0.18 |
| Cancer | 3.4% | 4.3% | <0.001 | 4.7% | 5.8% | <0.001 |
| Depression | 8.5% | 9.4% | <0.001 | 11.1% | 11.7% | <0.001 |
| Dementia | 9.1% | 9.8% | <0.001 | 13.5% | 13.4% | 0.011 |
| Charlson Comorbidity Index | 2.2±1.6 | 2.5±1.7 | <0.001 | 2.9±1.8 | 3.1±1.8 | <0.001 |
| Hospital characteristics | | | | | | |
| Bed size  Small  Medium  Large | 11.8%  26.4%  61.8% | 11.5%  26.6%  62.0% | <0.001 | 10.8%  25.5%  63.8% | 10.7%  25.8%  63.5% | <0.001 |
| Teaching hospital | 55.9% | 54.1% | <0.001 | 56.9% | 55.6% | <0.001 |
| Urban hospital | 89.7% | 90.0% | <0.001 | 90.2% | 90.9% | <0.001 |
| In-hospital outcomes and treatments | | | | | | |
| Cardiogenic shock | 0.9% | 0.7% | <0.001 | 1.4% | 1.0% | <0.001 |
| Cardiac arrest | 0.3% | 0.2% | <0.001 | 1.0% | 0.6% | <0.001 |
| Ventilation | 1.5% | 1.0% | <0.001 | 7.0% | 5.5% | <0.001 |
| Circulatory support | 0.3% | 0.1% | <0.001 | 0.9% | 0.7% | <0.001 |
| Intra-aortic balloon pump | 0.3% | 0.1% | <0.001 | 0.8% | 0.6% | <0.001 |
| Vasopressor | 0.3% | 0.2% | 0.027 | 0.6% | 0.5% | <0.001 |
| Coronary angiogram | 9.3% | 6.4% | <0.001 | 10.8% | 9.2% | <0.001 |
| Current admission PCI | 1.1% | 1.0% | 0.002 | 4.0% | 3.7% | <0.001 |
| Current CABG | 0.3% | 0.2% | <0.001 | 1.7% | 1.2% | <0.001 |
| Pacemaker or ICD implantation | 1.5% | 1.1% | <0.001 | 2.1% | 1.6% | <0.001 |
| Cardiac resynchronization therapy | 1.0% | 0.7% | <0.001 | 0.4% | 0.3% | <0.001 |
| Left ventricular assist device | 0.16% | 0.03% | <0.001 | 0.09% | 0.05% | <0.001 |
| Heart transplant | 0.09% | 0.02% | <0.001 | 0.02% | 0.01% | <0.001 |
| Discharge location  Home  Transfer to other hospital  Care home  Discharge against medical advice  Court/law enforcement | 58.6%  17.8%  22.6%  1.0%  <0.1% | 51.9%  20.5%  25.5%  2.1%  <0.1% | <0.001 | 48.1%  30.2%  21.0%  0.8%  <0.1% | 43.9%  31.4%  23.2%  1.6%  <0.1% | <0.001 |
| Length of stay (days) | 5.3±6.5 | 5.0±3.7 | <0.001 | 7.4±9.6 | 6.2±4.7 | <0.001 |
| Cost (USD) | $11,410±20,707 | $10,105±10,274 | <0.001 | $17,561±26,666 | $14,394±14,579 | <0.001 |
| Time to readmission | - | 16.3±7.5 | - | - | 16.6±7.5 | - |
| Readmission length of stay (days) | - | 6.2±7.2 | - | - | 6.5±7.5 | - |
| Death during readmission | - | 6.8% | - | - | 7.7% | - |
| Cost of readmission (USD) | - | $13,488±22,758 | - | - | $13,947±20,124 | - |

NS=non-significant, PCI=percutaneous coronary intervention, CABG=coronary artery bypass graft, TIA=transient ischemic attack, ICD=implantable defibrillator device