**Supplementary Methods**

Data source and population

Inclusion criteria included at least three dates on which myeloma diagnostic codes were observed (International Classification of Diseases [ICD]-9: codes with prefix 203.0; ICD-10: codes with prefix C90.0) and at least two dates on which myeloma treatment was observed with the second date falling within six months of the first. The index date on which study follow-up started was the date of the first treatment code, representing the initiation of treatment.

We limited our study to Veterans with an index date falling within the years 2004 through 2017, matching the years of available CMS data at the time of analysis. We restricted our study to Veterans age ≥ 65 years at the index date. To further limit our population to Veterans who were consistently utilizing and being treated within VA (versus Veterans treated partially or wholly outside VA), we required at least one VA non-MM diagnosis or procedure code in each year during the 3 years preceding the index date. To exclude Veterans who had received prior treatment or who were being treated outside VA, we excluded Veterans with one or more MM treatment codes in CMS data prior to or up to six months after the index date. Excluding Veterans who did not routinely use VA or whose myeloma was managed outside VA decreased the missingness of our covariates, since CMS data is more limited than VA data with regards to labs and sociodemographic variables. Increasing missingness of key covariates would have increased the risk of confounding given less robust adjustment. Moreover, excluding these Veterans minimized misclassification of treatment and index date—when the Veteran first initiated treatment for their myeloma within VA.

Modifications to Centers for Medicare and Medicaid Services Chronic Conditions Data Warehouse Algoirthms

Using codes from previous studies [1], we added peripheral neuropathy to this list given its prevalence and importance in patients with multiple myeloma. We also combined several similar conditions—e.g., "schizophrenia and other psychotic disorders" and "schizophrenia" were combined into one condition (**Supplementary Table 2**). In addition to a mapping of codes, the Chronic Conditions Warehouse defines algorithms as to the number and type (e.g., inpatient versus outpatient) of CMS claims required to define a chronic condition. We did not use these algorithms, because it was not clear how best to adapt them outside the setting of CMS claims data. Instead, we looked for the presence of at least one matching code in the three years prior to index date to define all conditions.

Additional methods of conducting LCA

To maximize stability of results of LCA, for each potential number of classes we repeated the LCA model fit procedure 50 times starting from random initial parameter estimates and chose the fit that minimized negative log likelihood.

**Reference**

1.      Song X, Wilson KL, Kagan J, et al. Cost of peripheral neuropathy in patients receiving treatment for multiple myeloma: a US administrative claims analysis. Therapeutic advances in hematology 2019;10:2040620719839025-2040620719839025.

**Supplementary Table 1:** Centers for Medicare and Medicaid Services List of Chronic and Potentially Disabling Conditions (based on list from February 2019, the latest version used in the current study).

| Other Chronic or Potentially Disabling Conditions | |
|---|---|
| ADHD, Conduct Disorders, and Hyperkinetic Syndrome | Personality Disorders |
| Alcohol Use Disorders | Post-Traumatic Stress Disorder (PTSD) |
| Anxiety Disorders | Pressure and Chronic Ulcers |
| Autism Spectrum Disorders | Schizophrenia |
| Bipolar Disorder | Schizophrenia and Other Psychotic Disorders |
| Cerebral Palsy | Sensory - Blindness and Visual Impairment |
| Cystic Fibrosis and Other Metabolic Developmental Disorders | Sensory - Deafness and Hearing Impairment |
| Depressive Disorders | Spina Bifida and Other Congenital Anomalies of the Nervous System |
| Drug Use Disorders | Spinal Cord Injury |
| Epilepsy | Tobacco Use |
| Fibromyalgia, Chronic Pain and Fatigue | Traumatic Brain Injury and Nonpsychotic Mental Disorders due to Brain Damage |
| Human Immunodeficiency Virus and/or Acquired Immunodeficiency Syndrome (HIV/AIDS) * | Viral Hepatitis (General), including:<br><br>• Hepatitis A<br>• Hepatitis B (acute or unspecified)<br>• Hepatitis B (chronic)<br>• Hepatitis C (acute)<br>• Hepatitis C (chronic)<br>• Hepatitis C (unspecified)<br>• Hepatitis D<br>• Hepatitis E |
| Intellectual Disabilities and Related Conditions | |
| Learning Disabilities | |
| Leukemias and Lymphomas | |
| Liver Disease, Cirrhosis and Other Liver Conditions | |

| | |
|---|---|
| Migraine and Chronic Headache | |
| Mobility Impairments | |
| Multiple Sclerosis and Transverse Myelitis | |
| Muscular Dystrophy | |
| Obesity | |
| Opioid Use Disorder | |
| Other Developmental Delays | |
| Peripheral Vascular Disease (PVD) | |

**Supplementary Table 2:** Modifications made to Centers for Medicare and Medicaid Services Chronic Conditions Data Warehouse

| Original Conditions | Combined Condition Names |
|---|---|
| Alzheimer's Disease and Related Disorders or Senile Dementia | Alzheimer's Disease and Related Disorders or Senile Dementia |
| Alzheimer's Disease | |
| Schizophrenia and Other Psychotic Disorders | Schizophrenia and Other Psychotic Disorders |
| Schizophrenia | |
| Intellectual Disabilities and Related Conditions | Intellectual Disabilities and Related Conditions |
| Learning Disabilities | |
| Anxiety Disorders | Mood Disorders |
| Depression | |
| Depressive Disorders | |
| Post-Traumatic Stress Disorder or PTSD | |
| Drug Use Disorders | Drug Use Disorders |
| Opioid Use Disorder | |
| **Additional Condition** | |
| Peripheral Neuropathy | Not applicable |

**Supplementary Table 3:** Posterior prediction probabilities of five multimorbidity patterns that emerged from latent class analysis

| Class | Total Number of Patients in Class | Number of Patients with Class Probability ≥ t | | | |
|---|---|---|---|---|---|
| | | t = 25% | t = 50% | t = 75% | t = 90% |
| Minimal Comorbidity | 1507 | 1507 (100%) | 1448 (96.08%) | 1035 (68.68%) | 695 (46.12%) |
| Cardiovascular and Metabolic | 1568 | 1568 (100%) | 1492 (95.15%) | 987 (62.95%) | 565 (36.03%) |
| Psych and Substance Use Disorders | 494 | 494 (100%) | 447 (90.49%) | 281 (56.88%) | 179 (36.23%) |
| Chronic Lung Disease | 805 | 805 (100%) | 717 (89.07%) | 462 (57.39%) | 290 (36.02%) |
| Multisystem Impairment | 702 | 702 (100%) | 657 (93.59%) | 468 (66.67%) | 324 (46.15%) |

**Supplementary Table 4:** Distribution of all chronic conditions by multimorbidity pattern

| | Overall | Minimal Comorbidity | Cardiovascular and Metabolic | Psych and Substance Use Disorders | Chronic Lung Disease | Multisystem Impairment |
|---|---|---|---|---|---|---|
| n | 5076 | 1507 | 1568 | 494 | 805 | 702 |
| Acquired Hypothyroidism (%) | 689 (13.6) | 101 (6.7) | 241 (15.4) | 82 (16.6) | 110 (13.7) | 155 (22.1) |
| Acute Myocardial Infarction (%) | 215 (4.2) | 0 (0.0) | 77 (4.9) | 4 (0.8) | 24 (3.0) | 110 (15.7) |
| ADHD Conduct Disorders and Hyperkinetic Syndrome (%) | 23 (0.5) | 1 (0.1) | 0 (0.0) | 7 (1.4) | 2 (0.2) | 13 (1.9) |
| Alcohol Use Disorders (%) | 651 (12.8) | 156 (10.4) | 105 (6.7) | 214 (43.3) | 94 (11.7) | 82 (11.7) |
| Alzheimers Disease and Related Disorders or Senile Dementia (%) | 369 (7.3) | 33 (2.2) | 76 (4.8) | 92 (18.6) | 31 (3.9) | 137 (19.5) |
| Anemia (%) | 3687 (72.6) | 831 (55.1) | 1230 (78.4) | 371 (75.1) | 615 (76.4) | 640 (91.2) |
| Asthma (%) | 396 (7.8) | 64 (4.2) | 44 (2.8) | 27 (5.5) | 138 (17.1) | 123 (17.5) |
| Atrial Fibrillation (%) | 906 (17.8) | 64 (4.2) | 331 (21.1) | 36 (7.3) | 164 (20.4) | 311 (44.3) |
| autismspectrumdisorders (%) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Benign Prostatic Hyperplasia (%) | 2084 (41.1) | 485 (32.2) | 656 (41.8) | 234 (47.4) | 333 (41.4) | 376 (53.6) |
| Bipolar Disorder (%) | 180 (3.5) | 12 (0.8) | 2 (0.1) | 120 (24.3) | 0 (0.0) | 46 (6.6) |
| Cataract (%) | 3257 (64.2) | 661 (43.9) | 1160 (74.0) | 310 (62.8) | 538 (66.8) | 588 (83.8) |
| Cerebral Palsy (%) | 1 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.1) |
| Chronic Kidney Disease (%) | 2547 (50.2) | 370 (24.6) | 967 (61.7) | 285 (57.7) | 351 (43.6) | 574 (81.8) |
| Chronic Obstructive Pulmonary Disease and Bronchiectasis (%) | 1653 (32.6) | 141 (9.4) | 42 (2.7) | 165 (33.4) | 805 (100.0) | 500 (71.2) |

| | | | | | |
|---|---|---|---|---|---|
| Colorectal Cancer (%) | 191 (3.8) | 38 (2.5) | 80 (5.1) | 16 (3.2) | 22 (2.7) | 35 (5.0) |
| Cystic Fibrosis and Other Metabolic Developmental Disorders (%) | 69 (1.4) | 18 (1.2) | 20 (1.3) | 8 (1.6) | 7 (0.9) | 16 (2.3) |
| Diabetes (%) | 2074 (40.9) | 199 (13.2) | 932 (59.4) | 209 (42.3) | 242 (30.1) | 492 (70.1) |
| Drug Use Disorders (%) | 237 (4.7) | 37 (2.5) | 18 (1.1) | 126 (25.5) | 13 (1.6) | 43 (6.1) |
| endometrialcancer (%) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Epilepsy (%) | 89 (1.8) | 12 (0.8) | 21 (1.3) | 26 (5.3) | 8 (1.0) | 22 (3.1) |
| Female/Male Breast Cancer (%) | 24 (0.5) | 5 (0.3) | 6 (0.4) | 3 (0.6) | 1 (0.1) | 9 (1.3) |
| Fibromyalgia, Chronic Pain, and Fatigue (%) | 943 (18.6) | 154 (10.2) | 245 (15.6) | 187 (37.9) | 141 (17.5) | 216 (30.8) |
| Glaucoma (%) | 1176 (23.2) | 227 (15.1) | 449 (28.6) | 132 (26.7) | 156 (19.4) | 212 (30.2) |
| Heart Failure (%) | 1162 (22.9) | 15 (1.0) | 395 (25.2) | 42 (8.5) | 192 (23.9) | 518 (73.8) |
| Hip Pelvic Fracture (%) | 178 (3.5) | 30 (2.0) | 43 (2.7) | 33 (6.7) | 25 (3.1) | 47 (6.7) |
| Human Immunodeficiency Virus and/or Acquired Immunodeficiency Syndrome (HIV/AIDS) (%) | 502 (9.9) | 6 (0.4) | 0 (0.0) | 20 (4.0) | 339 (42.1) | 137 (19.5) |
| Hyperlipidemia (%) | 3885 (76.5) | 891 (59.1) | 1375 (87.7) | 338 (68.4) | 623 (77.4) | 658 (93.7) |
| Hypertension (%) | 4487 (88.4) | 1077 (71.5) | 1548 (98.7) | 448 (90.7) | 715 (88.8) | 699 (99.6) |
| Intellectual Disabilities and Related Conditions (%) | 10 (0.2) | 2 (0.1) | 0 (0.0) | 0 (0.0) | 2 (0.2) | 6 (0.9) |
| Ischemic Heart Disease (%) | 2204 (43.4) | 201 (13.3) | 846 (54.0) | 126 (25.5) | 423 (52.5) | 608 (86.6) |
| Leukemias and Lymphomas (%) | 449 (8.8) | 126 (8.4) | 113 (7.2) | 38 (7.7) | 65 (8.1) | 107 (15.2) |
| Liver Disease, Cirrhosis and Other Liver | 371 (7.3) | 64 (4.2) | 99 (6.3) | 86 (17.4) | 34 (4.2) | 88 (12.5) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Conditions Except Viral Hepatitis (%) | | | | | | |
| Lung Cancer (%) | 138 (2.7) | 18 (1.2) | 24 (1.5) | 6 (1.2) | 54 (6.7) | 36 (5.1) |
| Migraine and Chronic Headache (%) | 103 (2.0) | 25 (1.7) | 10 (0.6) | 34 (6.9) | 17 (2.1) | 17 (2.4) |
| Mobility Impairments (%) | 180 (3.5) | 12 (0.8) | 44 (2.8) | 28 (5.7) | 23 (2.9) | 73 (10.4) |
| Multiple Sclerosis and Transverse Myelitis (%) | 22 (0.4) | 7 (0.5) | 2 (0.1) | 0 (0.0) | 1 (0.1) | 12 (1.7) |
| Muscular Dystrophy (%) | 1 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 1 (0.1) |
| Obesity (%) | 1213 (23.9) | 159 (10.6) | 502 (32.0) | 132 (26.7) | 158 (19.6) | 262 (37.3) |
| Osteoporosis (%) | 527 (10.4) | 121 (8.0) | 105 (6.7) | 62 (12.6) | 108 (13.4) | 131 (18.7) |
| otherdevelopmentaldelays (%) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Peripheral Neuropathy (%) | 958 (18.9) | 119 (7.9) | 301 (19.2) | 115 (23.3) | 117 (14.5) | 306 (43.6) |
| Peripheral Vascular Disease (%) | 905 (17.8) | 38 (2.5) | 354 (22.6) | 62 (12.6) | 125 (15.5) | 326 (46.4) |
| Personality Disorders (%) | 62 (1.2) | 8 (0.5) | 0 (0.0) | 45 (9.1) | 0 (0.0) | 9 (1.3) |
| Pressure and Chronic Ulcers (%) | 357 (7.0) | 23 (1.5) | 105 (6.7) | 28 (5.7) | 20 (2.5) | 181 (25.8) |
| Prostate Cancer (%) | 891 (17.6) | 207 (13.7) | 312 (19.9) | 81 (16.4) | 171 (21.2) | 120 (17.1) |
| Rheumatoid Arthritis/Osteoarthritis (%) | 2661 (52.4) | 600 (39.8) | 829 (52.9) | 290 (58.7) | 423 (52.5) | 519 (73.9) |
| Schizophrenia and Other Psychotic Disorders (%) | 272 (5.4) | 24 (1.6) | 30 (1.9) | 97 (19.6) | 21 (2.6) | 100 (14.2) |
| Sensory Blindness and Visual Impairment (%) | 117 (2.3) | 12 (0.8) | 42 (2.7) | 11 (2.2) | 15 (1.9) | 37 (5.3) |
| Sensory Deafness and Hearing Impairment (%) | 1690 (33.3) | 419 (27.8) | 486 (31.0) | 181 (36.6) | 288 (35.8) | 316 (45.0) |
| Spina Bifida and Other Congenital Anomilies of the Nervous System (%) | 36 (0.7) | 5 (0.3) | 8 (0.5) | 3 (0.6) | 14 (1.7) | 6 (0.9) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Spinal Cord Injury (%) | 112 (2.2) | 23 (1.5) | 29 (1.8) | 21 (4.3) | 11 (1.4) | 28 (4.0) |
| Stroke Transient Ischemic Attack (%) | 583 (11.5) | 31 (2.1) | 196 (12.5) | 56 (11.3) | 89 (11.1) | 211 (30.1) |
| Tobacco Use (%) | 843 (16.6) | 221 (14.7) | 108 (6.9) | 162 (32.8) | 226 (28.1) | 126 (17.9) |
| Traumatic Brain Injury and Non-Psychotic Mental Disorders Due to Brain Damage (%) | 35 (0.7) | 1 (0.1) | 6 (0.4) | 11 (2.2) | 1 (0.1) | 16 (2.3) |
| Viral Hepatitis (%) | 136 (2.7) | 24 (1.6) | 23 (1.5) | 56 (11.3) | 10 (1.2) | 23 (3.3) |
| Mood Disorders (%) | 1796 (35.4) | 370 (24.6) | 368 (23.5) | 462 (93.5) | 198 (24.6) | 398 (56.7) |

**Supplementary Table 5:** Baseline characteristics of older Veterans newly treated for multiple myeloma in VA, according to five multimorbidity patterns that emerged from latent class analysis.

| | Overall | Minimal Comorbidity | Cardiovascular and Metabolic | Psych and Substance Use Disorders | Chronic Lung Disease | Multisystem Impairment |
|---|---|---|---|---|---|---|
| Total N | 5076 | 1507 | 1568 | 494 | 805 | 702 |
| Age at Diagnosis (median [IQR]) | 74.8 [69.6, 80.6] | 73.2 [68.6, 78.8] | 76.0 [70.4, 81.5] | 71.0 [67.7, 76.7] | 76.5 [70.6, 81.2] | 76.5 [71.3, 82.3] |
| Age at Diagnosis (Categories [%]) | | | | | | |
| [65,70) | 1400 (27.6) | 512 (34.0) | 355 (22.6) | 215 (43.5) | 182 (22.6) | 136 (19.4) |
| [70,75) | 1195 (23.5) | 381 (25.3) | 355 (22.6) | 126 (25.5) | 166 (20.6) | 167 (23.8) |
| [75,80) | 1096 (21.6) | 288 (19.1) | 370 (23.6) | 70 (14.2) | 210 (26.1) | 158 (22.5) |
| [80,85) | 891 (17.6) | 229 (15.2) | 301 (19.2) | 56 (11.3) | 160 (19.9) | 145 (20.7) |
| [85,90) | 406 (8.0) | 83 (5.5) | 147 (9.4) | 24 (4.9) | 72 (8.9) | 80 (11.4) |
| [90,Inf) | 88 (1.7) | 14 (0.9) | 40 (2.6) | 3 (0.6) | 15 (1.9) | 16 (2.3) |
| Male (%) | 5006 (98.6) | 1488 (98.7) | 1544 (98.5) | 487 (98.6) | 797 (99.0) | 690 (98.3) |
| Race (%) | | | | | | |
| White | 3388 (66.7) | 1034 (68.6) | 1002 (63.9) | 301 (60.9) | 572 (71.1) | 479 (68.2) |
| Black | 1136 (22.4) | 317 (21.0) | 387 (24.7) | 150 (30.4) | 138 (17.1) | 144 (20.5) |
| Other | 66 (1.3) | 20 (1.3) | 19 (1.2) | 8 (1.6) | 9 (1.1) | 10 (1.4) |
| Missing | 486 (9.6) | 136 (9.0) | 160 (10.2) | 35 (7.1) | 86 (10.7) | 69 (9.8) |
| Income (mean (SD)) | 43325.27 (74118.31) | 47192.74 (78126.27) | 45062.77 (81577.57) | 33529.48 (53647.44) | 38853.29 (57720.40) | 43580.08 (76743.92) |
| ISS Stage (%) | | | | | | |
| ISS 1 | 523 (10.3) | 223 (14.8) | 131 (8.4) | 64 (13.0) | 76 (9.4) | 29 (4.1) |
| ISS 2 | 958 (18.9) | 315 (20.9) | 273 (17.4) | 101 (20.4) | 162 (20.1) | 107 (15.2) |
| ISS 3 | 641 (12.6) | 164 (10.9) | 228 (14.5) | 68 (13.8) | 86 (10.7) | 95 (13.5) |
| Missing | 2954 (58.2) | 805 (53.4) | 936 (59.7) | 261 (52.8) | 481 (59.8) | 471 (67.1) |

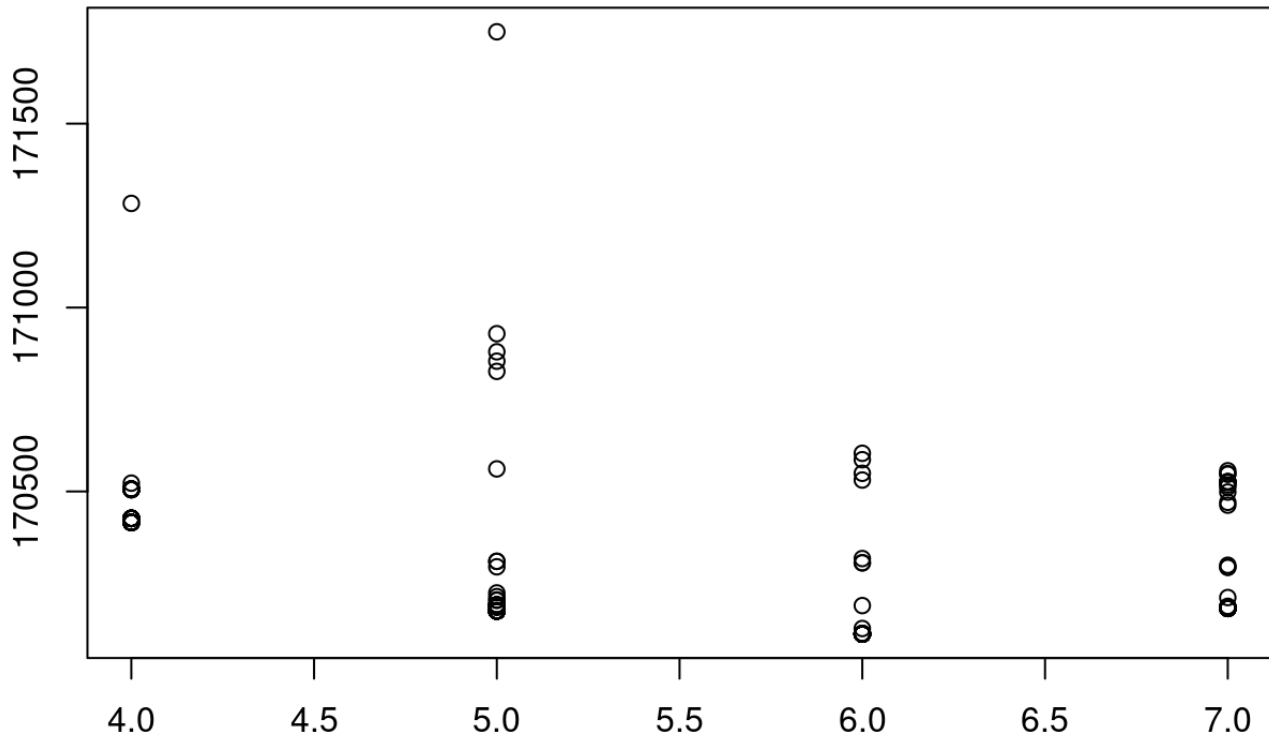| | | | | | | |
|---|---|---|---|---|---|---|
| Calcium ≥ 11 mg/dL (%) | 161 (3.2) | 50 (3.3) | 59 (3.8) | 15 (3.0) | 18 (2.2) | 19 (2.7) |
| Missing | 425 (8.4) | 148 (9.8) | 132 (8.4) | 20 (4.0) | 66 (8.2) | 59 (8.4) |
| Creatinine > 2 mg/dL (%) | 1009 (19.9) | 156 (10.4) | 392 (25.0) | 109 (22.1) | 138 (17.1) | 214 (30.5) |
| Missing | 350 (6.9) | 125 (8.3) | 106 (6.8) | 18 (3.6) | 50 (6.2) | 51 (7.3) |
| Hemoglobin < 10 g/dL(%) | 1770 (34.9) | 423 (28.1) | 615 (39.2) | 176 (35.6) | 262 (32.5) | 294 (41.9) |
| Missing | 349 (6.9) | 122 (8.1) | 98 (6.2) | 18 (3.6) | 57 (7.1) | 54 (7.7) |
| Platelet < 150,000/microL (%) | 1152 (22.7) | 306 (20.3) | 368 (23.5) | 116 (23.5) | 177 (22.0) | 185 (26.4) |
| Missing | 636 (12.5) | 209 (13.9) | 181 (11.5) | 55 (11.1) | 97 (12.0) | 94 (13.4) |
| Transplantation (%) | 152 (3.0) | 85 (5.6) | 37 (2.4) | 17 (3.4) | 12 (1.5) | 1 (0.1) |
| Novel Therapy at Induction[a] (%) | 4376 (86.2) | 1312 (87.1) | 1358 (86.6) | 434 (87.9) | 674 (83.7) | 598 (85.2) |
| Thalidomide (%) | 1119 (22.0) | 319 (21.2) | 338 (21.6) | 77 (15.6) | 219 (27.2) | 166 (23.6) |
| Lenalidomide (%) | 1950 (38.4) | 662 (43.9) | 591 (37.7) | 196 (39.7) | 286 (35.5) | 215 (30.6) |
| Bortezomib (%) | 2069 (40.8) | 590 (39.2) | 667 (42.5) | 250 (50.6) | 275 (34.2) | 287 (40.9) |
| Thalidomide and Bortezomib (%) | 75 (1.5) | 23 (1.5) | 22 (1.4) | 10 (2.0) | 11 (1.4) | 9 (1.3) |
| Lenalidomide and Bortezomib (%) | 671 (13.2) | 234 (15.5) | 207 (13.2) | 81 (16.4) | 91 (11.3) | 58 (8.3) |
| Novel Therapy over Lifetime[b] (%) | 4716 (92.9) | 1424 (94.5) | 1468 (93.6) | 454 (91.9) | 740 (91.9) | 630 (89.7) |
| Thalidomide (%) | 1388 (27.3) | 413 (27.4) | 423 (27.0) | 101 (20.4) | 257 (31.9) | 194 (27.6) |
| Lenalidomide (%) | 3174 (62.5) | 1056 (70.1) | 1009 (64.3) | 312 (63.2) | 468 (58.1) | 329 (46.9) |
| Bortezomib (%) | 2838 (55.9) | 866 (57.5) | 905 (57.7) | 315 (63.8) | 391 (48.6) | 361 (51.4) |
| Thalidomide and Bortezomib (%) | 485 (9.6) | 168 (11.1) | 154 (9.8) | 46 (9.3) | 68 (8.4) | 49 (7.0) |
| Lenalidomide and Bortezomib (%) | 1944 (38.3) | 675 (44.8) | 623 (39.7) | 214 (43.3) | 254 (31.6) | 178 (25.4) |

**Supplementary Table 6:** Complete case analysis involving multivariable Cox proportional hazards regression models estimating effect of multimorbidity patterns on (1) overall mortality, (2) hospitalizations, (3) emergency department (ED) visits[a]

| Multimorbidity Pattern | Mortality (HR, 95% CI) | ED Visit (HR, 95% CI) | Hospitalization (HR, 95% CI) |
|---|---|---|---|
| Minimal Comorbidity | Reference | Reference | Reference |
| Cardiovascular and Metabolic | 1.01 (0.86 to 1.19) | 1.34 (1.15 to 1.56) | 1.16 (1.00 to 1.34) |
| Psych and Substance Use Disorders | 1.41 (1.13 to 1.77) | 1.72 (1.41 to 2.10) | 1.37 (1.12 to 1.67) |
| Chronic Lung Disease | 1.46 (1.21 to 1.76) | 1.41 (1.17 to 1.70) | 1.51 (1.25 to 1.80) |
| Multisystem Impairment | 1.81 (1.49 to 2.21) | 1.65 (1.35 to 2.01) | 1.72 (1.42 to 2.09) |

[a] Models were adjusted for all covariates, including age at MM diagnosis, gender, race, income, ISS stage, calcium ≥ 11 mg/dL, creatinine > 2 mg/dL, hemoglobin < 10 g/dL, platelet < 150,000/microL.
Abbreviations: ED, emergency department; HR, hazard ratio; CI, confidence interval

**Supplementary Figure 1:** Model fit (Bayesian Information Criteria [BIC], Y-axis) versus number of classes (X-axis) in the latent class anlaysis. Each circle represents the BIC for one of the 50 repetitions of the latent class analysis ran for each number of classes.

**Supplementary Figure 2:** Heat map displaying the probabilities of each condition (rows, labeled along right side) being present conditional upon a Veteran being assigned to each class/multimorbidity pattern (columns, labeled across top). Darker shades indicate a higher probability.