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| **Supplementary Table 1 – ICD-10-CM/PCS Codes used in our study** | |
| **Primary diagnosis** | **ICD-10-CM Codes** |
| Influenza pneumonia hospitalizations | J09X1, J1000, J1008, J1100, J1108 |
| **Secondary diagnosis** | **ICD-10-CM Codes** |
| Pulmonary Heart Disease and Diseases of the Pulmonary Circulation | I27 |
| **Outcomes** | **ICD-10-CM Codes** |
| Secondary pneumonia | J12, J13, J14, J15, J16, J17, J18 |
| Sepsis | A021, A267, A327, A400, A401, A408, A409, A4101, A4102, A411, A412, A413, A414, A4150, A4151, A4152, A4153, A4159, A4181, A4189, A419, A427, A5486, B377 |
| Septic shock | R6521 |
| Cardiogenic shock | R570, T8111XA, T8111XS |
| Complications of Mechanical ventilation | J95850, J95851, J95859 |
| **Outcomes** | **ICD-10-PCS Codes** |
| Need for Mechanical ventilation | 5A1935Z, 5A1945Z, 5A1955Z |
| Mechanically ventilated for 24 hours | 5A1935Z |
| Mechanically ventilated for 24-96 hours | 5A1945Z |
| Mechanically ventilated for 96 hours | 5A1955Z |
| ICD-10-CM: International Classification of Diseases, Tenth Revision, Clinical Modification; ICD-10-PCS: International Classification of Diseases, Tenth Revision, Procedure Coding System | |

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| **Supplementary Table 2 - Comorbidities** | |
| **Additional comorbidities generated separately in Table 1** | **ICD-10-CM Codes** |
| Atrial Fibrillation/Flutter | I48 |
| Obstructive Sleep Apnea | G4733 |
| Dyslipidemia | E7800, E7801, E781, E782, E7841, E7849, E785 |
| Prior Myocardial Infarction | I252 |
| Prior Percutaneous Coronary Intervention | Z955 |
| Prior Coronary Artery Bypass Graft | Z951 |
| Tobacco use | O99330, O99331, O99333, O99334, O99335, F17200, Z720, Z87891, Z1720, Z172, Z17201, Z17200, Z17203, Z17208, Z17209, Z1720, Z1721, Z17211, Z17213, Z17218, Z17219, Z1722, Z17220, Z17221, Z17223, Z17228, Z17229, Z1729, Z17290, Z17291, Z17293, Z17298, Z17299 |
| Cocaine (excluding remissions) | F1412, F1415 F1410, F1418, F1419 F1422, F1425 F1420, F1428, F1429 F1492, F1495 F1490, F1498, F1499 |
| Cannabis (excluding remissions) | F1212, F1213 F1210, F1215, F1218, F1219 F1222, F1223 F1220, F1225, F1228, F1229 F1292, F1293 F1290, F1295, F1298, F1299 |
| **Comorbidities generated using Elixhauser comorbidity software\*,1 refined for ICD-10-CM in Table 1** | **Binary variable used** |
| Complicated Hypertension | cmr\_htn\_cx |
| Uncomplicated Hypertension | cmr\_htn\_uncx |
| Diabetes Mellitus with chronic complications | cmr\_diab\_cx |
| Diabetes Mellitus without chronic complications | cmr\_diab\_uncx |
| Heart failure | cmr\_hf |
| Valvular disease | cmr\_valve |
| Peripheral vascular disease | cmr\_perivasc |
| Cerebrovascular disease | cmr\_cbvd |
| Paralysis | cmr\_paralysis |
| Obesity | cmr\_obese |
| Chronic pulmonary disease | cmr\_lung\_chronic |
| Renal failure | cmr\_renlfl\_sev |
| Liver disease, moderate to severe | cmr\_liver\_sev |
| Hypothyroidism | cmr\_thyroid\_hypo |
| Dementia | cmr\_dementia |
| Depression | cmr\_depress |
| Acquired Immune Deficiency Syndrome | cmr\_aids |
| Autoimmune conditions | cmr\_autoimmune |
| Lymphoma | cmr\_cancer\_lymph |
| Leukemia | cmr\_cancer\_leuk |
| Malignant solid tumor without metastasis | cmr\_cancer\_solid |
| Metastatic cancer | cmr\_cancer\_mets |
| Solid tumor without metastasis, in situ | cmr\_cancer\_nsitu |
| Alcohol | cmr\_alcohol |
| Drug abuse | cmr\_drug\_abuse |
| \*Elixhauser comorbidity software downloadable from https://www.hcup-us.ahrq.gov/toolssoftware/comorbidity/comorbidity.jsp | |
| 1Moore BJ, White S, Washington R, Coenen N, Elixhauser A. Identifying Increased Risk of Readmission and In-hospital Mortality Using Hospital Administrative Data: The AHRQ Elixhauser Comorbidity Index. Med Care. 2017 Jul;55(7):698-705 | |
| HTN-Hypertension, DM-Diabetes Mellitus, MI-Myocardial Infarction, PCI-Percutaneous Coronary Intervention, CABG-Coronary Artery Bypass Graft | |

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| **Supplementary Table 3 - Adjusting total cost of hospitalization^** | |
| **Year** | **Multiplying factor~** |
| 2016 | 1.243 |
| 2017 | 1.186 |
| 2018 | 1.128 |
| 2019 | 1.108 |
| ^Total cost of hospitalization = ("TOTCHG" variable in NIS) \* (Multiplying factor) | |
| ~adjusted index of inflation by matching March 2016, 2017, 2018, 2019 to March 2022 using the Consumer Price Index for hospital services on website of US Bureau of Labor Statistics (bls.gov) | |