**Table 1: Participants’ Demographics (N=**4511**)**

|  |  |  |
| --- | --- | --- |
| Characteristics | | N (%) or Median (IQR) |
| **Age (Year)** | | 71.57 |
| **Sex (Male)** | | 2438(54.04 %) |
| **Major comorbidity** | |  |
| **CAD** | | 1304 (28.90%) |
| **Diabetes** | | 1006 (22.30%) |
| **HTN** | | 2035 (45.11 %) |
| **CKD** | | 640 (14.18%) |
| **Cancer** | | 325 (7.2 %) |
| **BMI (N=280) (1st admission)** | |  |
| **Baseline blood sugar after admission (labevents)(1st admission)** | |  |
| HbA1c | |  |
| FPG | |  |
| **Comorbidity Status (Elixhausr)** |  | |
| **With DM history** | |  |
| **~~Medication~~** | |  |
| ~~Insulin or OHA(血糖藥)~~ | ~~167 (3.7%)~~ | |
| ~~Statins~~ | | ~~0~~ |
| **Outcomes** | |  |
| ICU Admission length (mean) | | 4.23 |
| Respiratory failure | | 961(21.30%) |
| Renal replacement therapy | | 65(1.44%) |
| Hospital Mortality | | 874(19.37%) |

**Table 2: Comparision of demographic data and outcomes between COPD with or without DM comorbidity**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Total  (N=4511) | With DM  (N=1006) | Without DM  (N=3505) | P value |
| Age | 71.57 | 71.47 | 71.59 |  |
| Sex (Male) c | 2438 | 548 | 1890 |  |
| BMI (N=280) |  |  |  |  |
| Major comorbidity |  |  |  |  |
| CAD | 1304(28.90%) | 380 | 924 |  |
| HTN | 2035(45.11 %) | 519 | 1516 |  |
| CKD | 640(14.18%) | 180 | 460 |  |
| Cancer | 325 (7.2 %) | 48 | 277 |  |
| BMI (N=280) |  |  |  |  |
| Baseline blood sugar after admission | 138.66mg/gL |  |  |  |
| HbA1c |  |  |  |  |
| FPG |  |  |  |  |
| D1\_SPO2 |  |  |  |  |
| D1\_SBP |  |  |  |  |
| D2\_PAW |  |  |  |  |
| D2\_MAPS |  |  |  |  |
| WBC |  |  |  |  |
| NEUT |  |  |  |  |
| LACTATE |  |  |  |  |
| CREAT |  |  |  |  |
| Comorbidity Status  (Elixhausr) |  |  |  |  |
| Medication |  |  |  |  |
| Insulin or OHA |  |  |  |  |
| Statins |  |  |  |  |
| Outcomes |  |  |  |  |
| ICU Admission(length of stay ) | 4.23 | 4.03 | 4.28 |  |
| Respiratory failure | 961(21.30%) | 245(24.35%) | 716(20.42%) |  |
| Renal replacement therapy | 65(1.44%) | 8(0.79%) | 57(1.62%) |  |
| Hospital Mortality | 874(19.37%) | 191(18.98%) | 683(19.48%) |  |

c Chi-square test. Mann-Whitney U test. \*p<0.05, \*\*p<0.01. BMI: Body mass index; PFT: pulmonary function test; FEV1: forced expiratory volume in one second; FVC: forced vital capacity; GOLD: Global initiative for chronic Obstructive Lung Diseas; DM: diabetes mellitus; ICU: intensive care unit

CAD: 41401

HTN: 4019, 4011, 4019, 40210, 40290, 40410, 40490, 4051, 4059

CKD: 5851, 5852, 5853, 5854,5856, 5859

unspecified (acute [5849](http://www.icd9data.com/2015/Volume1/580-629/580-589/584/584.9.htm) = 16%)

Cancer: "196-199.1"

SELECT d.subject\_id, d.hadm\_id, gender, dob, dod, seq\_num, icd9\_code, admittime, dischtime, admission\_type, admission\_location, discharge\_location, insurance, language,

religion, marital\_status, ethnicity, edregtime, edouttime, diagnosis, a.hospital\_expire\_flag, has\_chartevents\_data, icustay\_id, dbsource, first\_careunit,

last\_careunit, first\_wardid, last\_wardid, intime, outtime, los

FROM mimiciii.diagnoses\_icd d

inner join mimiciii.admissions a on d.subject\_id = a.subject\_id

inner join mimiciii.icustays icu on d.hadm\_id = icu.hadm\_id

inner join mimiciii.patients p on a.subject\_id = p.subject\_id

-- where icd9\_code in ('490', '4910', '4911', '4912', '49120', '49121', '49122', '4918', '4919', '492', '4920', '4928', '494', '4940', '4941', '496', '25000', '25001', '25002', '25003', '25007', '25004', '25005', '25006')

-- where d.icd9\_code BETWEEN '2500' and '2507' --Diabetes

-- where d.icd9\_code BETWEEN '4830' and '5837' -- Renal Disease

-- or d.icd9\_code in ('5820', '5850','5860', '5880') -- Renal Disease

-- where d.icd9\_code in ('4280') --Congestive heart failure

-- where d.icd9\_code BETWEEN '1960' and '1991' -- Cancer

where d.icd9\_code in ('4019', '4011', '4019', '40210', '40290', '40410', '40490', '4051', '4059') --HTN

where d.icd9\_code in ('5851', '5852', '5853', '5854', '5856', '5859' ) --CKD

Diabetes (25000)6.1%

"Congestive heart failure", "428"

"Diabetes", "250.0-250.7"

"Renal disease", "582", "583-583.7", "585", "586", "588"

Then about cancer, modify to narrow down between "196-199.1"

Get each icd9 code for the major comorbidities

Focus on the 1st record. First admission

Respiratory failure = itemid 227565, 227566~~, 223848, 223849~~

Renal Replacement = procedureevents\_mv.itemid 225441

Height = item 226730 (cm), 226707

Blood sugar = chartevents.itemid in (226537, 228388)

HbA1c

FPG

D1\_SPO2

D1\_SBP

D2\_PAW

D2\_MAPS

WBC

NEUT

LACTATE

CREAT