

```

WITH AA AS (
SELECT
A.SUBJECT_ID, A.DOB,
B.HADM_ID, B.ADMITTIME ADMITTIME, B.ADMISSION_TYPE, B.INSURANCE, B.DIAGNOSIS
FROM
`physionet-data.mimiciii_clinical.patients` AS A
LEFT JOIN
`physionet-data.mimiciii_clinical.admissions` AS B
ON
A.SUBJECT_ID = B.SUBJECT_ID where A.SUBJECT_ID in (SELECT subject_id
FROM
`physionet-data.mimiciii_clinical.icustays`
WHERE date_diff(outtime,intime,day)<2 or date_diff(outtime,intime,day)=2
)
),

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BB1 AS (
SELECT
C2.HADM_ID, C2.SUBJECT_ID
FROM
`physionet-data.mimiciii_clinical.diagnoses_icd` AS C2
LEFT JOIN
`physionet-data.mimiciii_clinical.d_icd_diagnoses` AS D2
ON
C2.ICD9_CODE = D2.ICD9_CODE
WHERE
C2.ICD9_CODE IN ('99591', '99592', '0389')
),

```

```

BB AS (
SELECT
C.HADM_ID, C.SUBJECT_ID, C.SEQ_NUM, C.ICD9_CODE, D.SHORT_TITLE
FROM
`physionet-data.mimiciii_clinical.diagnoses_icd` AS C
LEFT JOIN
`physionet-data.mimiciii_clinical.d_icd_diagnoses` AS D
ON
C.ICD9_CODE = D.ICD9_CODE
WHERE
C.ICD9_CODE IN ('4241', '1970')
),

```

```

CC AS (
SELECT
E.HADM_ID, E.ICUSTAY_ID, AVG(E.valuenum) AS value, di.label
FROM
`physionet-data.mimiciii_clinical.chartevents` AS E
JOIN
`physionet-data.mimiciii_clinical.d_items` di
ON
E.itemid = di.itemid
WHERE
E.ITEMID IN (224422, 618, 220210, 224689, 614, 651, 224690, 615, 211, 220045, 442, 227243, 224167,
220179, 225309, 646, 834, 220277, 223761, 678, 226707, 763, 224639, 226512, 198, 199, 200, 220210,
51265, 220180, 221185, 221179, 221180, 221181, 221182, 1040, 1206, 189, 190, 191, 720, 223848, 467,
445, 224832, 456, 52, 220052, 220181)
GROUP BY E.HADM_ID, E.ICUSTAY_ID, di.label
),

```

```

DD AS (
SELECT
G.HADM_ID, G.ITEMID, G.VALUE, G.VALUENUM, H.LABEL, H.CATEGORY
FROM
`physionet-data.mimiciii_clinical.labevents` AS G
LEFT JOIN
`physionet-data.mimiciii_clinical.d_labitems` AS H
ON
G.ITEMID = H.ITEMID
WHERE
H.LABEL LIKE 'Glucose%'
OR H.LABEL LIKE 'Lactate%'
OR H.LABEL LIKE 'Potassium%'
OR H.LABEL LIKE 'Albumin%'
OR H.LABEL LIKE 'Bilirubin%'
OR H.LABEL LIKE 'Creatinine%'
OR H.LABEL LIKE 'Chloride%'
OR H.LABEL LIKE 'pCO2%'
OR H.LABEL LIKE 'Urea Nitrogen%'
OR H.LABEL LIKE 'Urine%'
OR H.LABEL LIKE 'Platelet Count'
OR H.LABEL LIKE 'pO2'),

```

```

EE AS (
SELECT
AA.HADM_ID,
AA.SUBJECT_ID,
MAX(CASE WHEN BB.ICD9_CODE = '4241' THEN 1 ELSE 0 END) AS valvular_disease,
MAX(CASE WHEN BB.ICD9_CODE = '1970' THEN 1 ELSE 0 END) AS metastatic_cancer

```

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FROM AA
LEFT JOIN BB ON AA.HADM_ID = BB.HADM_ID
GROUP BY AA.HADM_ID, AA.SUBJECT_ID
),
```

```
FF AS (
SELECT
G.HADM_ID,
AVG(CASE WHEN H.LABEL LIKE 'PT%' THEN G.VALUENUM ELSE NULL END) AS pt_avg,
AVG(CASE WHEN H.LABEL LIKE 'PTT%' THEN G.VALUENUM ELSE NULL END) AS ptt_avg
FROM
`physionet-data.mimiciii_clinical.labevents` G
JOIN
`physionet-data.mimiciii_clinical.d_labitems` H
ON
G.ITEMID = H.ITEMID
GROUP BY G.HADM_ID
),
```

```
FINAL AS (
-- Final Join to get comprehensive data
SELECT
AA.SUBJECT_ID, AA.DOB, AA.INSURANCE, ADMITTIME, AA.ADMISSION_TYPE, AA.HADM_ID,
CC.value, CC.label,
DD.LABEL lab, DD.VALUENUM labvalue, DD.CATEGORY,
EE.valvular_disease, EE.metastatic_cancer,
FF.pt_avg, FF.ptt_avg
FROM AA
JOIN BB1 ON AA.HADM_ID = BB1.HADM_ID
```

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JOIN CC ON AA.HADM_ID = CC.HADM_ID
JOIN DD ON AA.HADM_ID = DD.HADM_ID
LEFT JOIN EE ON AA.HADM_ID = EE.HADM_ID
LEFT JOIN FF ON AA.HADM_ID = FF.HADM_ID
),
fin2 as (
SELECT
SUBJECT_ID,
MAX(DOB) AS DOB,
MAX(ADMITTIME) ADMITTIME,
MAX(INSURANCE) AS INSURANCE,
MAX(ADMISSION_TYPE) AS ADMISSION_TYPE,
date_diff(MAX(ADMITTIME),MAX(DOB),year) age,
max(CASE WHEN label LIKE '%Height%' THEN value ELSE 0 END) AS Height,
max(CASE WHEN label LIKE '%Weight%' THEN value ELSE 0 END) AS Weight,
MAX(CASE WHEN label = 'Heart Rate' THEN value ELSE 0 END) AS Heart_Rate,
MAX(CASE WHEN label LIKE '%Temperature%' THEN value ELSE 0 END) AS temp,
MAX(CASE WHEN label LIKE '%Blood Pressure%' THEN value ELSE 0 END) AS Blood_Pressure,
AVG(CASE WHEN label LIKE '%Resp%Rate%' THEN value ELSE 0 END) AS respiratory_rate,
AVG(CASE WHEN label LIKE '%GCS%' THEN value ELSE 0 END) AS GCS,
AVG(CASE WHEN label LIKE '%ART BP Systolic%' THEN value ELSE 0 END) AS abpd,
AVG(CASE WHEN label LIKE '%FiO2%' THEN value ELSE 0 END) AS FiO2,
max(CASE WHEN label LIKE 'Ventilator Type' THEN 'yes' ELSE 'no' END) AS Mechanical_ventilation,
max(CASE WHEN label in ('Arterial BP Mean','Non Invasive Blood Pressure mean','Arterial Blood
Pressure mean','NBP Mean') THEN value ELSE 0 END) AS MAP,

AVG(CASE WHEN lab LIKE '%Bilirubin%' THEN labvalue ELSE 0 END) AS bilirubin_avg,
AVG(CASE WHEN lab LIKE '%Lactate%' THEN labvalue ELSE 0 END) AS lactate_avg,
AVG(CASE WHEN lab LIKE '%Glucose%' THEN labvalue ELSE 0 END) AS glucose_avg,

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AVG(CASE WHEN lab LIKE '%Potassium%' THEN labvalue ELSE 0 END) AS potassium_avg,  
AVG(CASE WHEN lab LIKE '%Creatinine%' THEN labvalue ELSE 0 END) AS creatinine_avg,  
AVG(CASE WHEN lab LIKE '%Urine Volume%' THEN labvalue ELSE 0 END) AS urine_avg,  
AVG(CASE WHEN lab LIKE '%Albumin%' THEN labvalue ELSE 0 END) AS albumin_avg,  
AVG(CASE WHEN lab LIKE '%Urea Nitrogen%' THEN labvalue ELSE 0 END) AS bun_avg,  
AVG(CASE WHEN lab LIKE '%pCO2%' THEN labvalue ELSE 0 END) AS pCO2_avg,
```

```
MAX(valvular_disease) AS valvular_disease,  
MAX(metastatic_cancer) AS metastatic_cancer,  
AVG(pt_avg) AS pt_avg,  
AVG(ptt_avg) AS ptt_avg,  
AVG(CASE WHEN lab LIKE 'Platelet Count' THEN labvalue ELSE 0 END) AS platelet,  
AVG(CASE WHEN lab LIKE 'pO2' THEN labvalue ELSE 0 END) AS paO2  
FROM FINAL  
GROUP BY SUBJECT_ID),
```

```
fin3 as (  
select  
SUBJECT_ID,age,ADMITTIME,INSURANCE,ADMISSION_TYPE,Weight*10/power(if(Height=0,null,Height)/  
10,2)  
bmi,abpd,bilirubin_avg,lactate_avg,glucose_avg,potassium_avg,creatinine_avg,urine_avg,albumin_avg,  
bun_avg,pCO2_avg,valvular_disease,metastatic_cancer,pt_avg,ptt_avg,
```

```
CASE WHEN Heart_Rate<33 THEN 4 when Heart_Rate BETWEEN 33 AND 88 then 0 when Heart_Rate  
BETWEEN 89 AND 107 then 3 ELSE 6 END ma1,
```

```
CASE WHEN Blood_Pressure<53 THEN 4 when Blood_Pressure BETWEEN 53 AND 71 then 3 when  
Blood_Pressure BETWEEN 72 AND 79 then 0 ELSE 1 END ma2,
```

```
CASE WHEN respiratory_rate<6 THEN 10 when respiratory_rate BETWEEN 6 AND 12 then 1 when  
respiratory_rate BETWEEN 13 AND 24 then 0 ELSE 6 END ma3,
```

```
CASE WHEN temp<91.4 THEN 6 when temp BETWEEN 91.5 AND 96.62 then 3 when temp BETWEEN 89  
AND 107 then 0 ELSE 3 END ma4,
```

```

CASE WHEN urine_avg<0.671 THEN 10 when urine_avg BETWEEN 0.672 AND 1.424 then 4 ELSE 0 END
ma5,

CASE WHEN GCS BETWEEN 3 AND 4 THEN 10 when GCS BETWEEN 5 AND 8 then 4 when GCS BETWEEN
9 AND 12 then 3 ELSE 1 END ma6,

case when ADMISSION_TYPE='ELECTIVE' THEN 0 ELSE 6 END ma7,

CASE WHEN age BETWEEN 60 AND 69 THEN 1 when age BETWEEN 70 AND 79 then 2 when age<60 then
0 ELSE 3 END ma8,

CASE WHEN platelet BETWEEN 2 AND 5 THEN 3 when platelet BETWEEN 5 AND 10 then 2 when platelet
BETWEEN 10 AND 15 then 1 when platelet>15 then 0 ELSE 4 END ma9,

CASE WHEN paO2/if(FiO2=0,null,FiO2) BETWEEN 300 AND 400 THEN 1 when paO2/if(FiO2=0,null,FiO2)
BETWEEN 200 AND 300 then 2 when paO2/if(FiO2=0,null,FiO2) BETWEEN 100 AND 200 then 3 when
paO2/if(FiO2=0,null,FiO2)>400 then 0 ELSE 4 END ma10,

case when Mechanical_ventilation ='yes' then 9 else 0 end ma11,

case when MAP>70 then 0 when MAP<70 then 1 end ma12,

CASE WHEN bilirubin_avg BETWEEN 1.2 AND 1.9 THEN 1 when bilirubin_avg BETWEEN 2 AND 5.9 then 2
when bilirubin_avg BETWEEN 6 AND 12 then 3 ELSE 4 END ma13,

CASE WHEN creatinine_avg BETWEEN 1.2 AND 1.9 THEN 1 when creatinine_avg BETWEEN 2 AND 3.4
then 2 when creatinine_avg>3.5 then 3 ELSE 0 END ma14,

from fin2)

```

```

select fin3.SUBJECT_ID SUBJECT_ID,U.EXPIRE_FLAG
targevariable,age,INSURANCE,bmi,abpd,bilirubin_avg,lactate_avg,glucose_avg,potassium_avg,creatinin
e_avg,urine_avg,albumin_avg,bun_avg,pCO2_avg,valvular_disease,metastatic_cancer,pt_avg,ptt_avg,

(ma8+ma1+ma6) as apsi,

(ma8+ma1+ma2+ma3+ma4+ma5+ma11+ma6) as oasis,(ma8+ma1+ma6) as
sapsii,(ma10+ma9+ma12+ma6+ma14+ma13) as sofa

from fin3 left join `physionet-data.mimiciii_clinical.patients` AS U on fin3.SUBJECT_ID = U.SUBJECT_ID
where age>18 or age=18

```