University of Glasgow | School of Computing Science

THE AWARDS 2020 | UNIVERSITY OF THE YEAR

Vital Signs Extraction for a Single Patient

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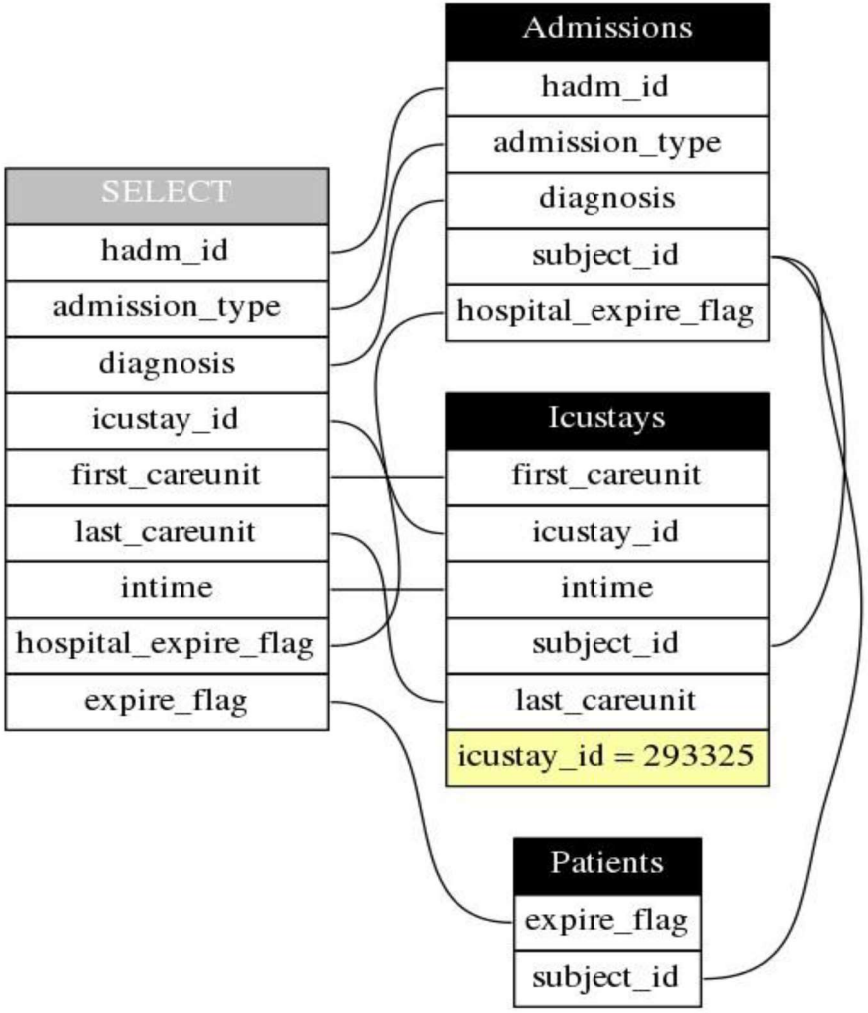
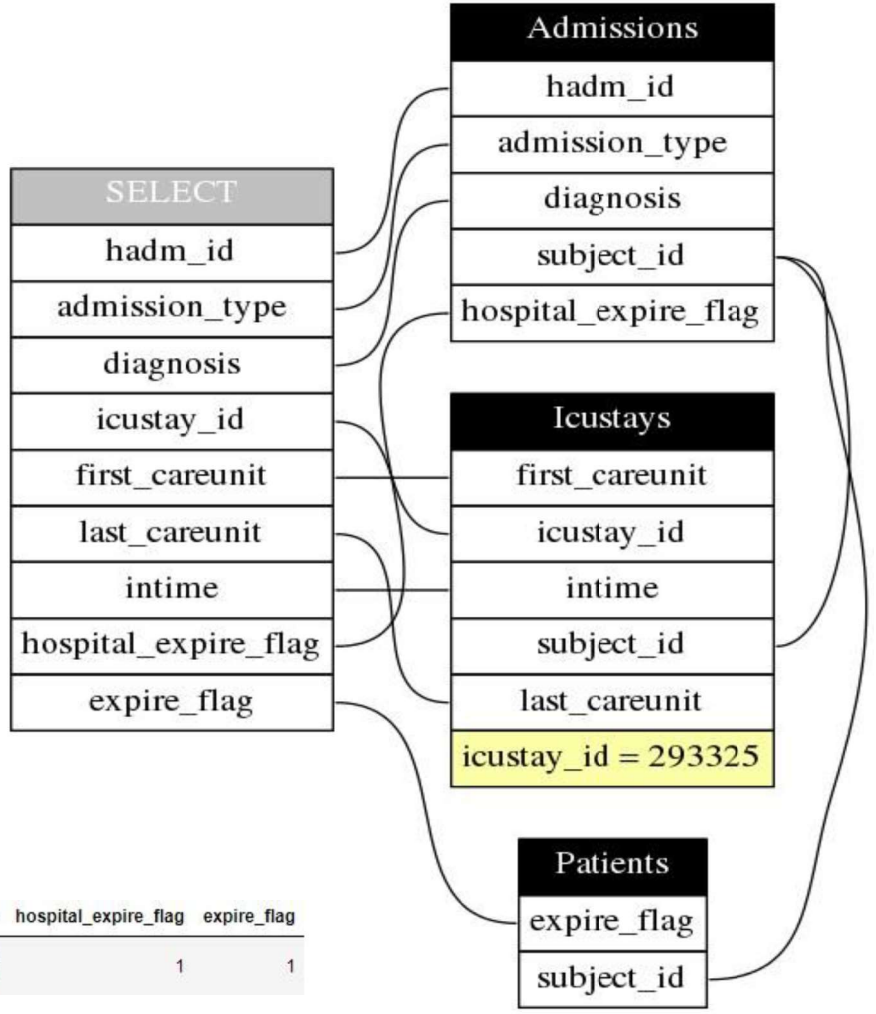
Hospital admission of a single patient

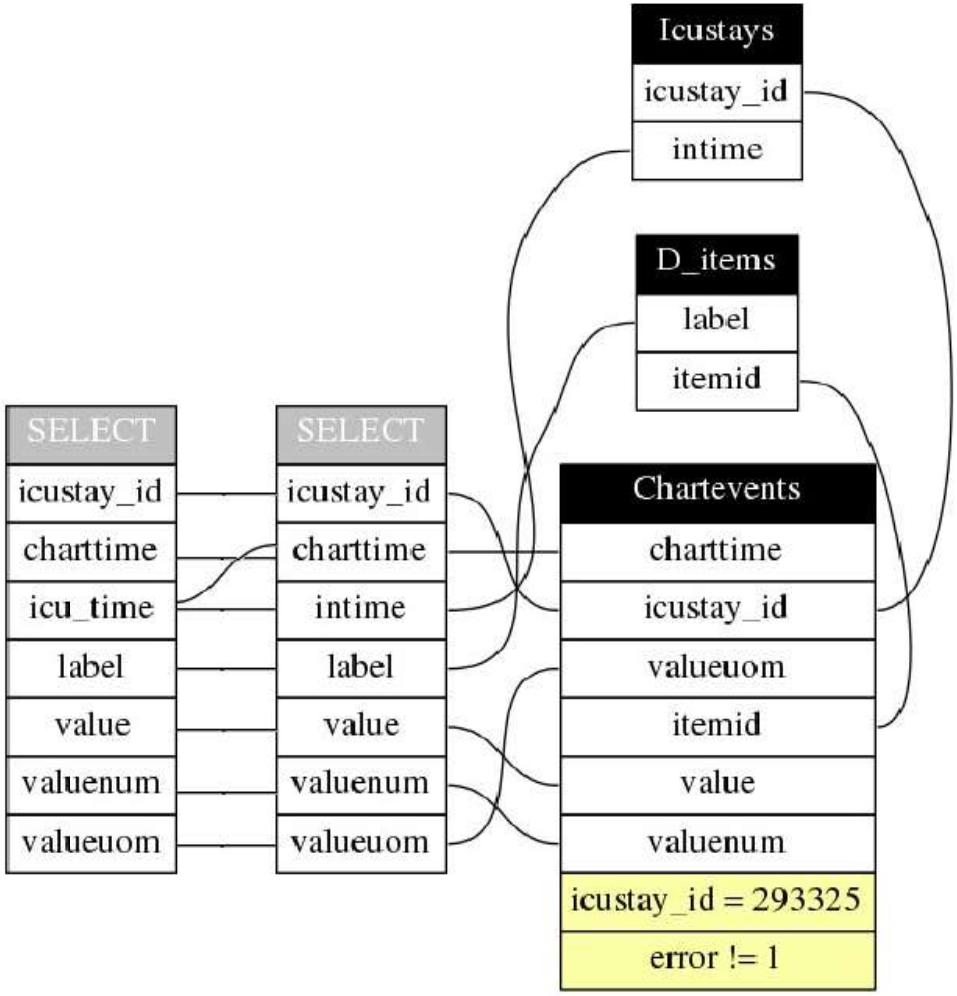


Hospital admission of a single patient



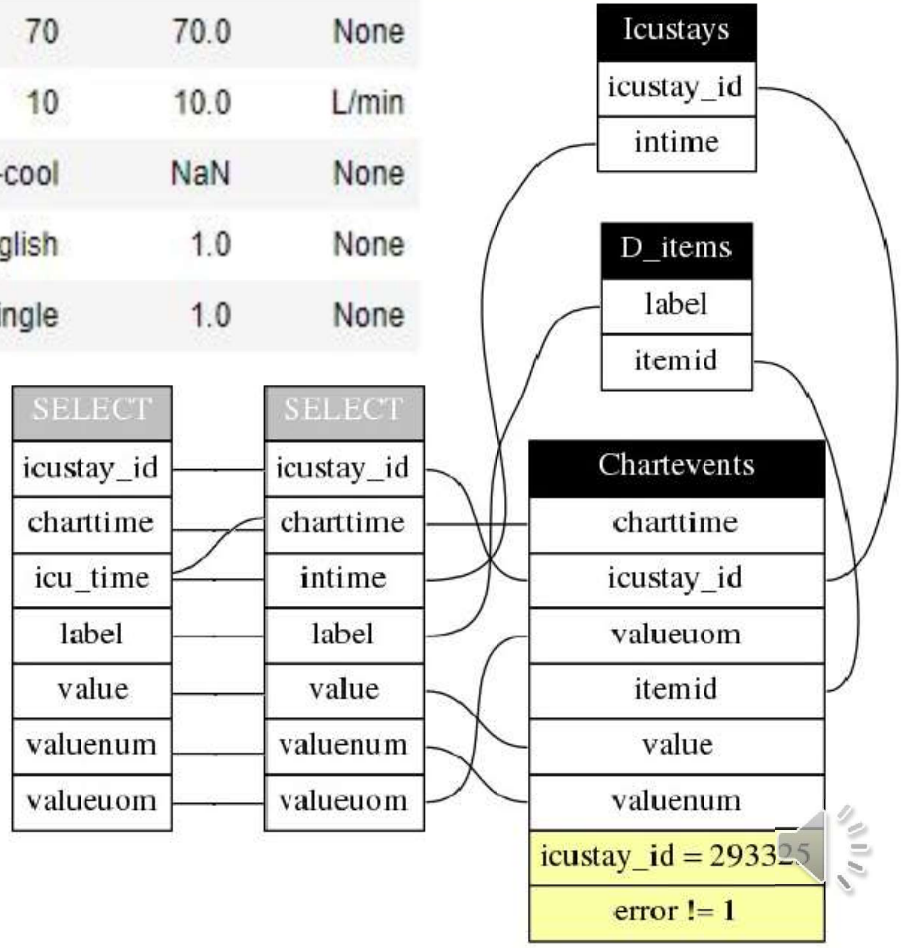
	subject_id	hadm_id	admission_type	diagnosis	icustay_id	first_careunit	last_careunit	icu_intime	hospital_expire_flag	expire_flag
0	62534	181366	EMERGENCY	NEUTROPENIC FEVER	293325	MICU	MICU	2120-10-29 10:32:50	1	1

All charted events of a single patient

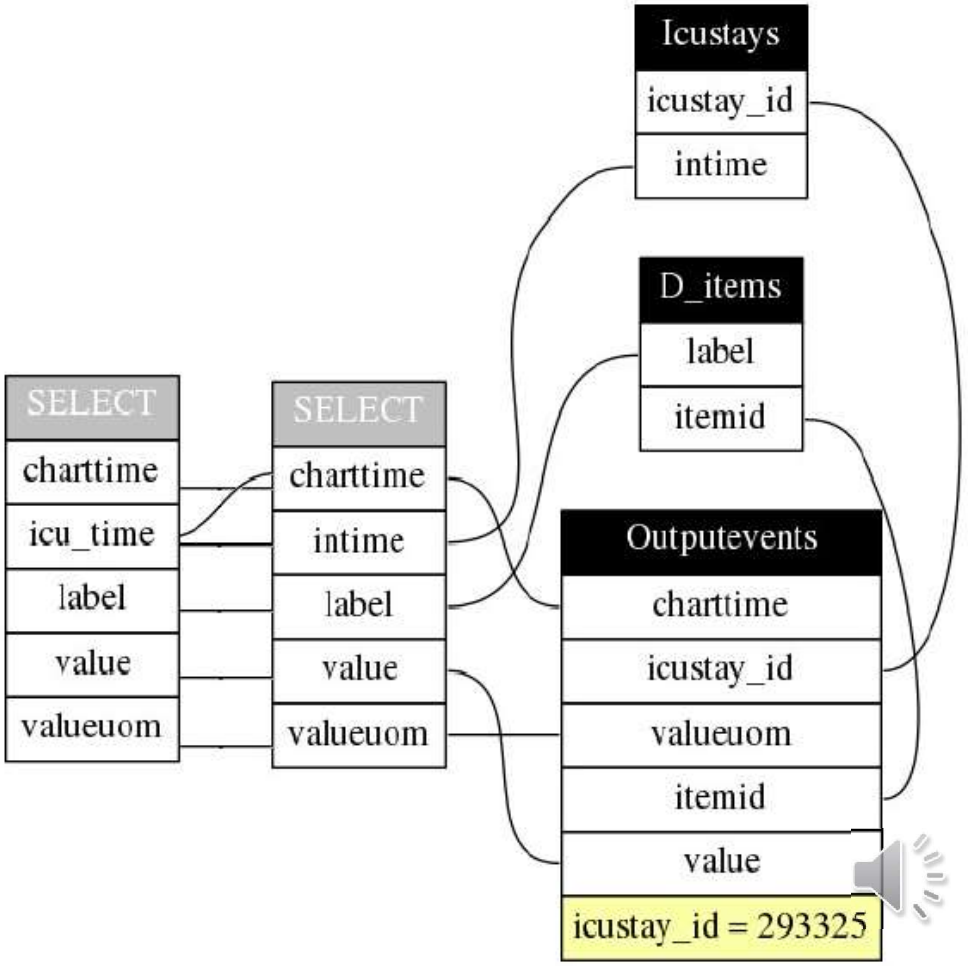


All charted events of a single patient

	icustay_id	charttime	icutime	label	value	valuenum	valueuom
0	293325	2120-10-29 10:30:00	-1 days +23:57:10	Inspired O2 Fraction	70	70.0	None
1	293325	2120-10-29 10:30:00	-1 days +23:57:10	O2 Flow	10	10.0	L/min
2	293325	2120-10-29 10:30:00	-1 days +23:57:10	O2 Delivery Device(s)	Aerosol-cool	NaN	None
3	293325	2120-10-29 10:32:00	-1 days +23:59:10	Language	English	1.0	None
4	293325	2120-10-29 10:32:00	-1 days +23:59:10	Marital Status	Single	1.0	None

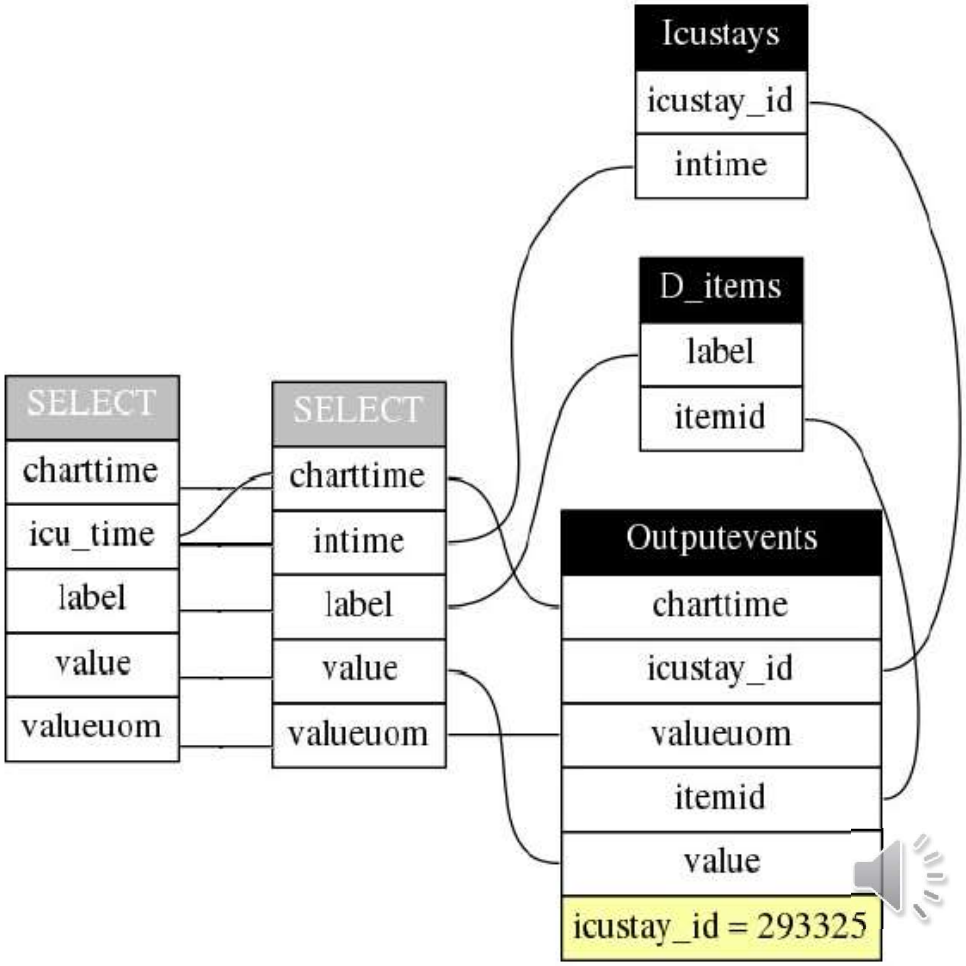


All outputs recorded during an ICU stay

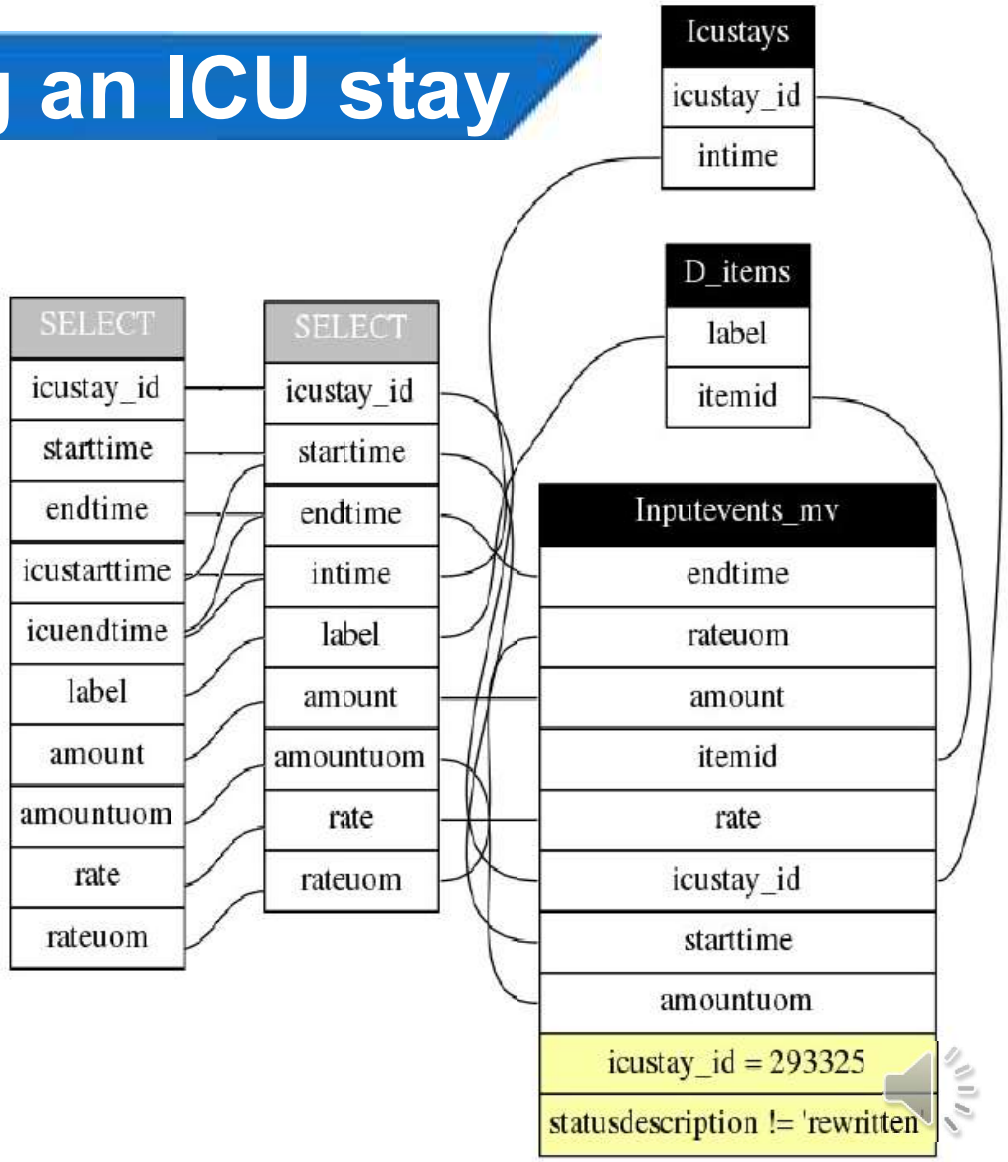


All outputs recorded during an ICU stay

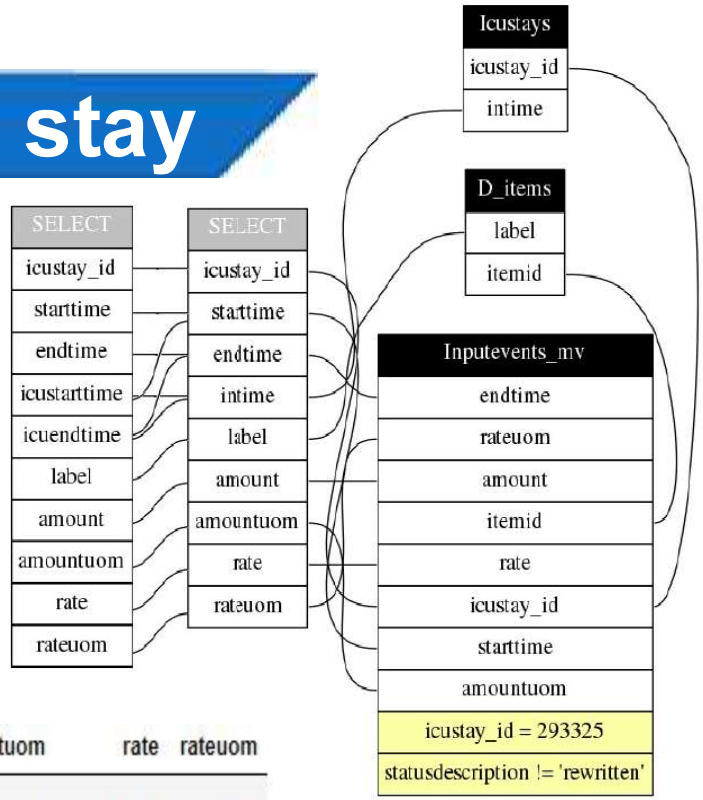
	icustay_id	charttime	icutime	label	value	valueuom
0	293325	2120-10-29 10:45:00	0 days 00:12:10	Foley	50.0	mL
1	293325	2120-10-29 11:30:00	0 days 00:57:10	Foley	100.0	mL
2	293325	2120-10-29 12:00:00	0 days 01:27:10	Foley	35.0	mL
3	293325	2120-10-29 13:00:00	0 days 02:27:10	Foley	50.0	mL
4	293325	2120-10-29 14:00:00	0 days 03:27:10	Foley	40.0	mL



Medication intakes during an ICU stay

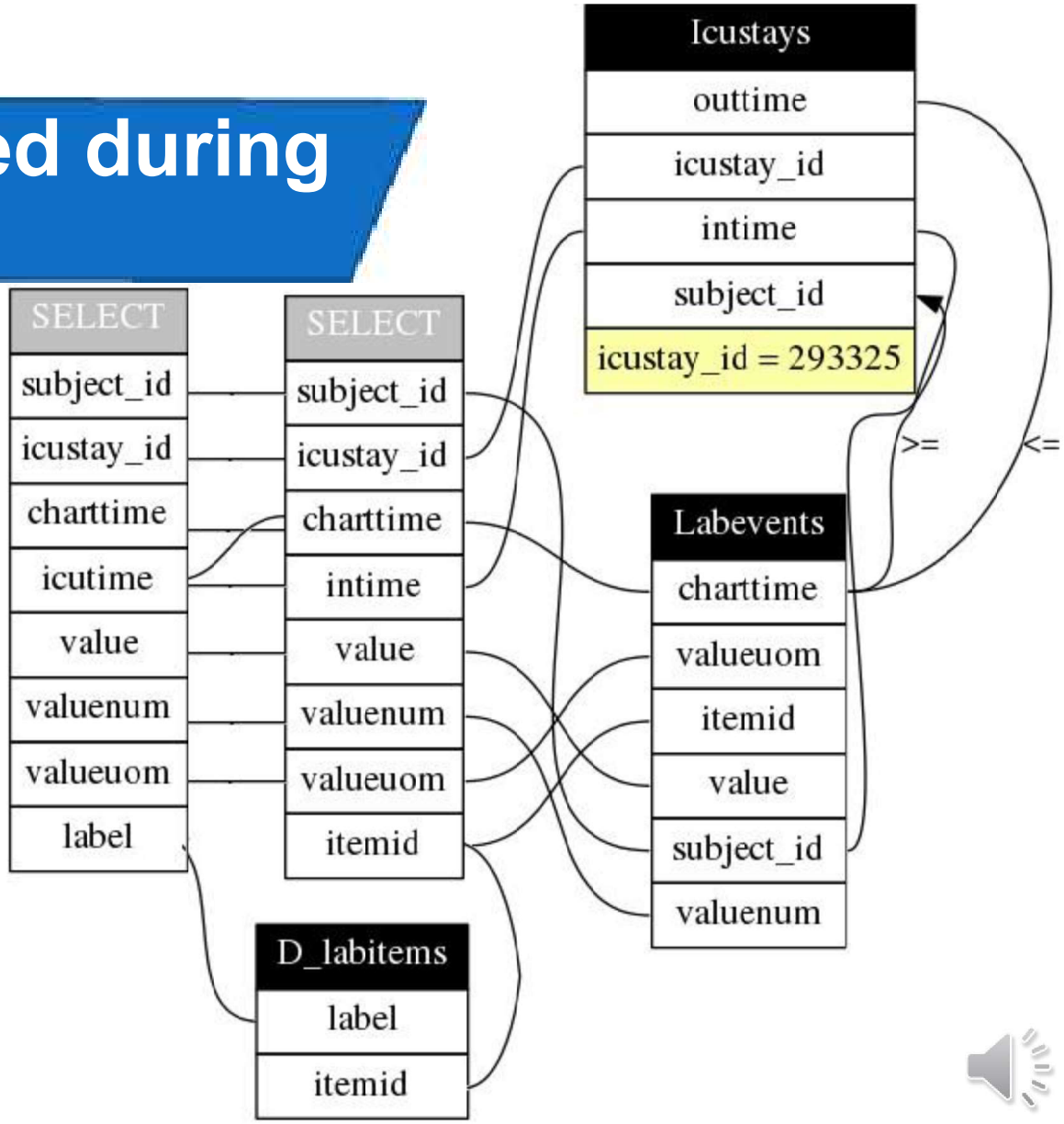


Medication intakes during an ICU stay



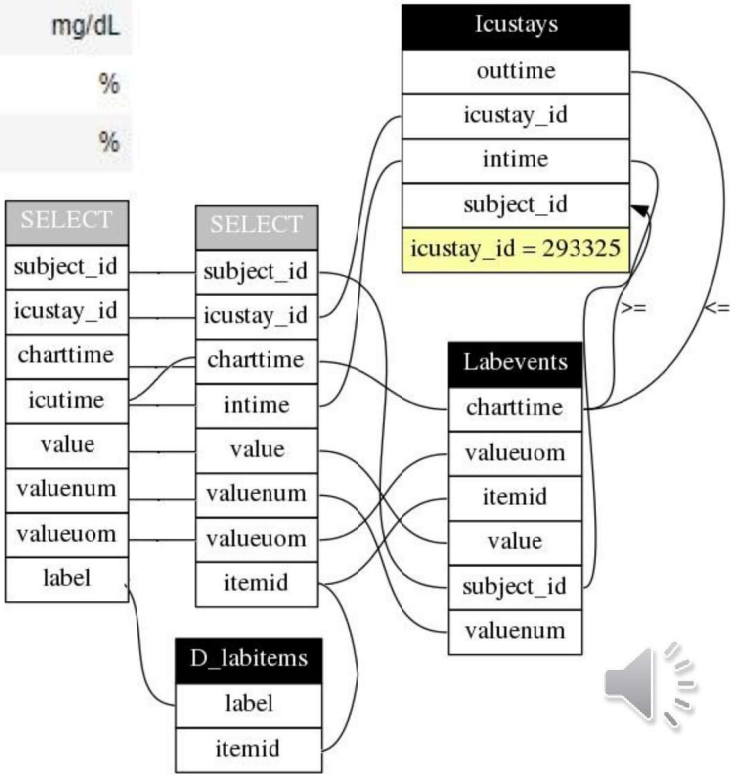
	icustay_id	starttime	endtime	icustarttime	icuendtime	label	amount	amountuom	rate	rateuom
0	293325	2120-10-29 11:57:00	2120-10-29 11:58:00	0 days 01:24:10	0 days 01:25:10	NaCl 0.9%	500.000000	ml	NaN	None
1	293325	2120-10-29 12:00:00	2120-10-30 12:54:00	0 days 01:27:10	1 days 02:21:10	NaCl 0.9%	250.000014	ml	10.040161	mL/hour
2	293325	2120-10-29 15:52:00	2120-10-29 15:53:00	0 days 05:19:10	0 days 05:20:10	Dextrose 5%	100.000000	ml	NaN	None
3	293325	2120-10-29 15:52:00	2120-10-29 15:53:00	0 days 05:19:10	0 days 05:20:10	Piperacillin/Tazobactam (Zosyn)	1.000000	dose	NaN	None
4	293325	2120-10-29 16:15:00	2120-10-29 16:16:00	0 days 05:42:10	0 days 05:43:10	Dextrose 5%	100.000000	ml	NaN	None

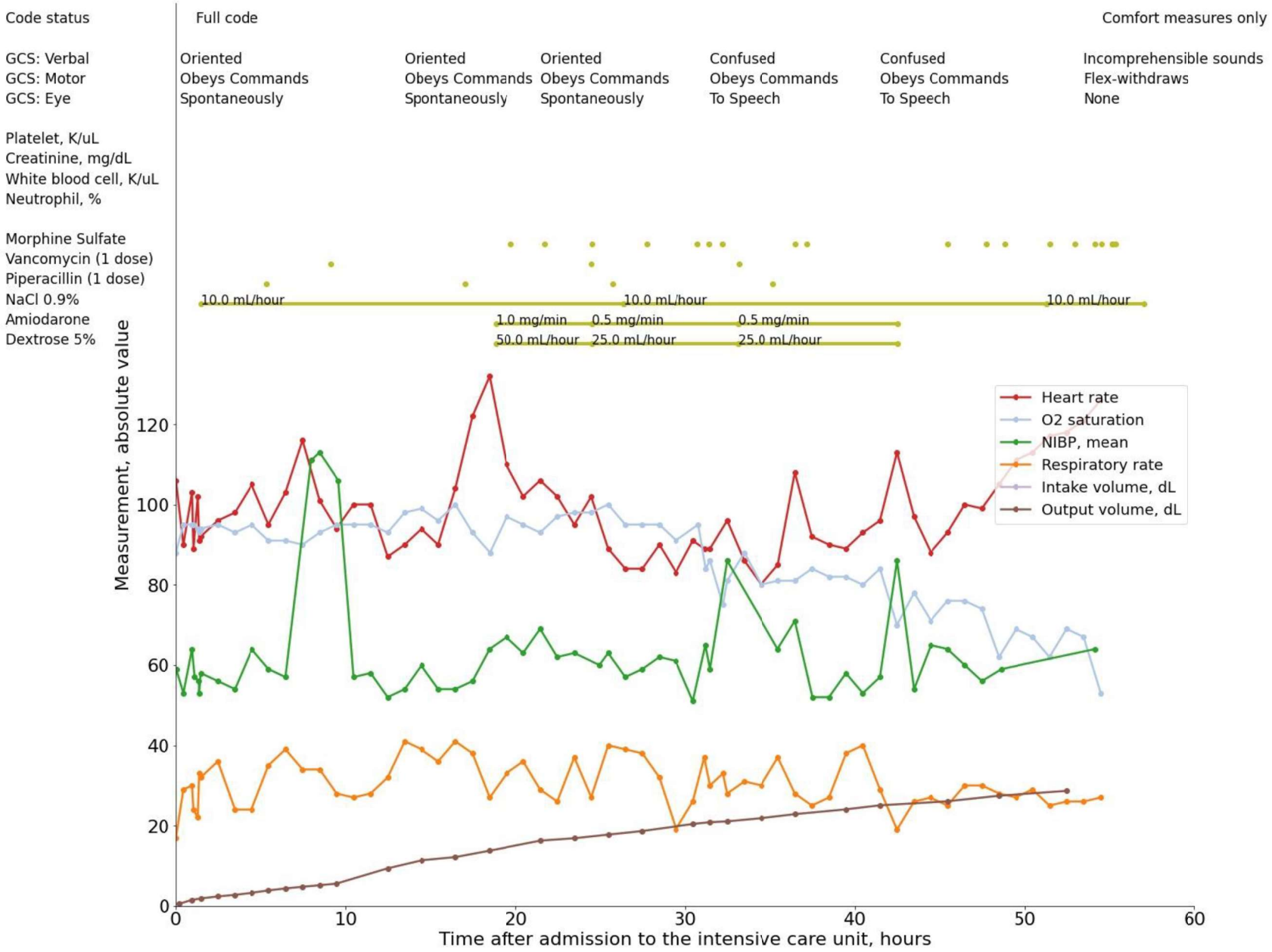
All lab events recorded during an ICU stay



All lab events recorded during an ICU stay

	subject_id	icustay_id	charttime	icutime	label	value	valuenum	valueuom
0	62534	293325	2120-10-29 11:42:00	0 days 01:09:10	Red Blood Cells	2.64	2.64	m/uL
1	62534	293325	2120-10-29 11:42:00	0 days 01:09:10	Lactate Dehydrogenase (LD)	1321	1321.00	IU/L
2	62534	293325	2120-10-29 11:42:00	0 days 01:09:10	Magnesium	1.6	1.60	mg/dL
3	62534	293325	2120-10-29 11:42:00	0 days 01:09:10	Basophils	0	0.00	%
4	62534	293325	2120-10-29 11:42:00	0 days 01:09:10	Bands	35	35.00	%




Code status
Full code
Comfort measures only
GCS: Verbal
GCS: Motor
GCS: Eye
Oriented
Obeys Commands
Spontaneously
Oriented
Obeys Commands
Spontaneously
Oriented
Obeys Commands
Spontaneously
Confused
Obeys Commands
To Speech
Confused
Obeys Commands
To Speech
Incomprehensible sounds
Flex-withdraws
None
Platelet, K/uL
Creatinine, mg/dL
White blood cell, K/uL
Neutrophil, %
Morphine Sulfate
Vancomycin (1 dose)
Piperacillin (1 dose)
NaCl 0.9%
Amiodarone
Dextrose 5%
10.0 mL/hour
10.0 mL/hour
10.0 mL/hour
1.0 mg/min
0.5 mg/min
0.5 mg/min
50.0 mL/hour
25.0 mL/hour
25.0 mL/hour
Heart rate
O2 saturation
NIBP, mean
Respiratory rate
Intake volume, dL
Output volume, dL
Measurement, absolute value
0
20
40
60
80
100
120
0
10
20
30
40
50
60
Time after admission to the intensive care unit, hours

Summary

- Join Patients, Admissions, ICUStays table
- Chartered Events – Vital signs recorded in ICU
- Labevents – Laboratory tests
- Output Events – Secretion/Urine recorded in ICU
- Input Events – Medication recorded in ICU

References

- Johnson et al. ‘MIMIC-III, a freely accessible critical care database’, Scientific Data, 2016.
- Gamal et al. ‘Standardized electronic health record data modeling and persistence: A comparative review’, Journal of Biomedical Informatics, 2020.