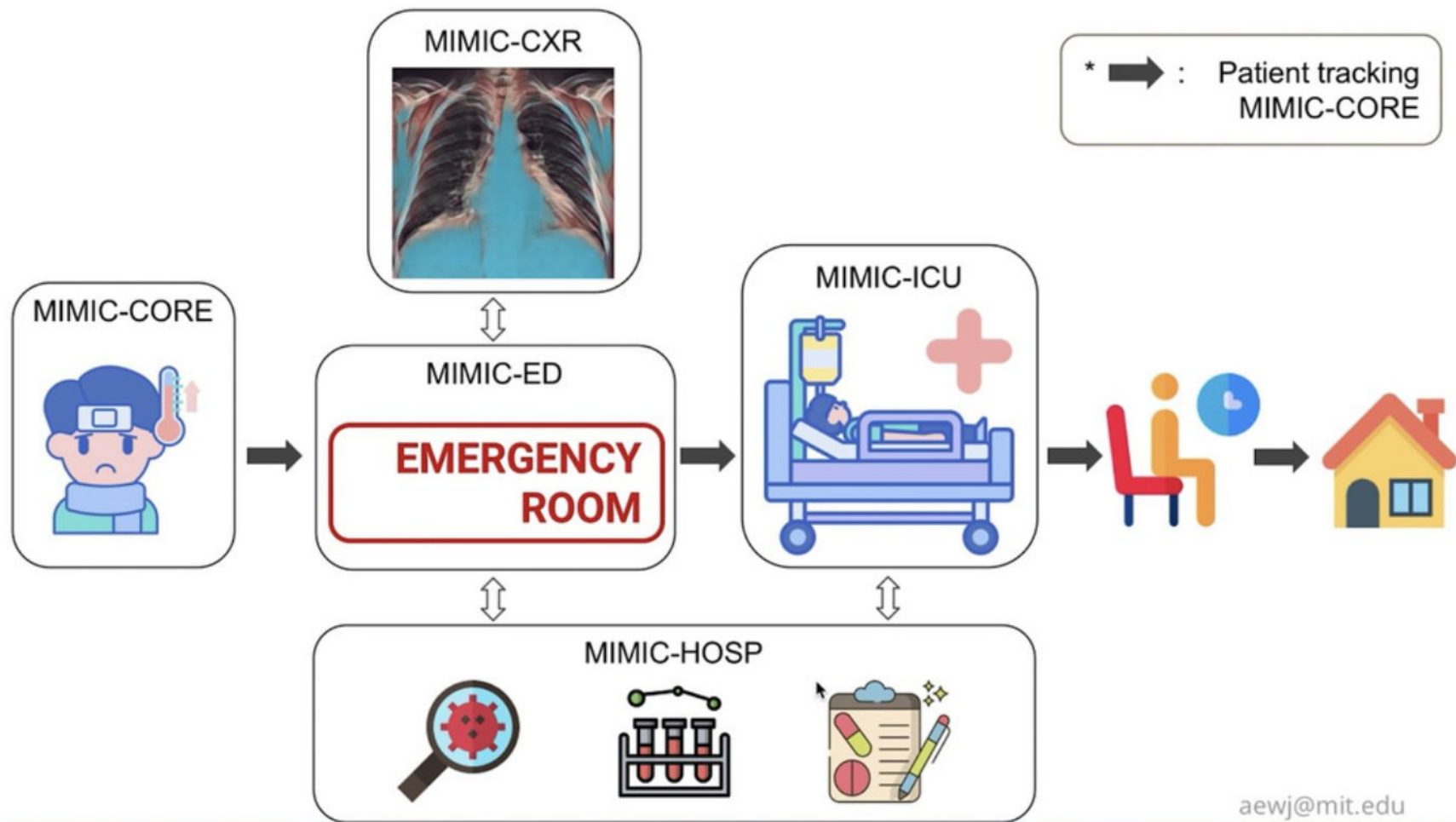
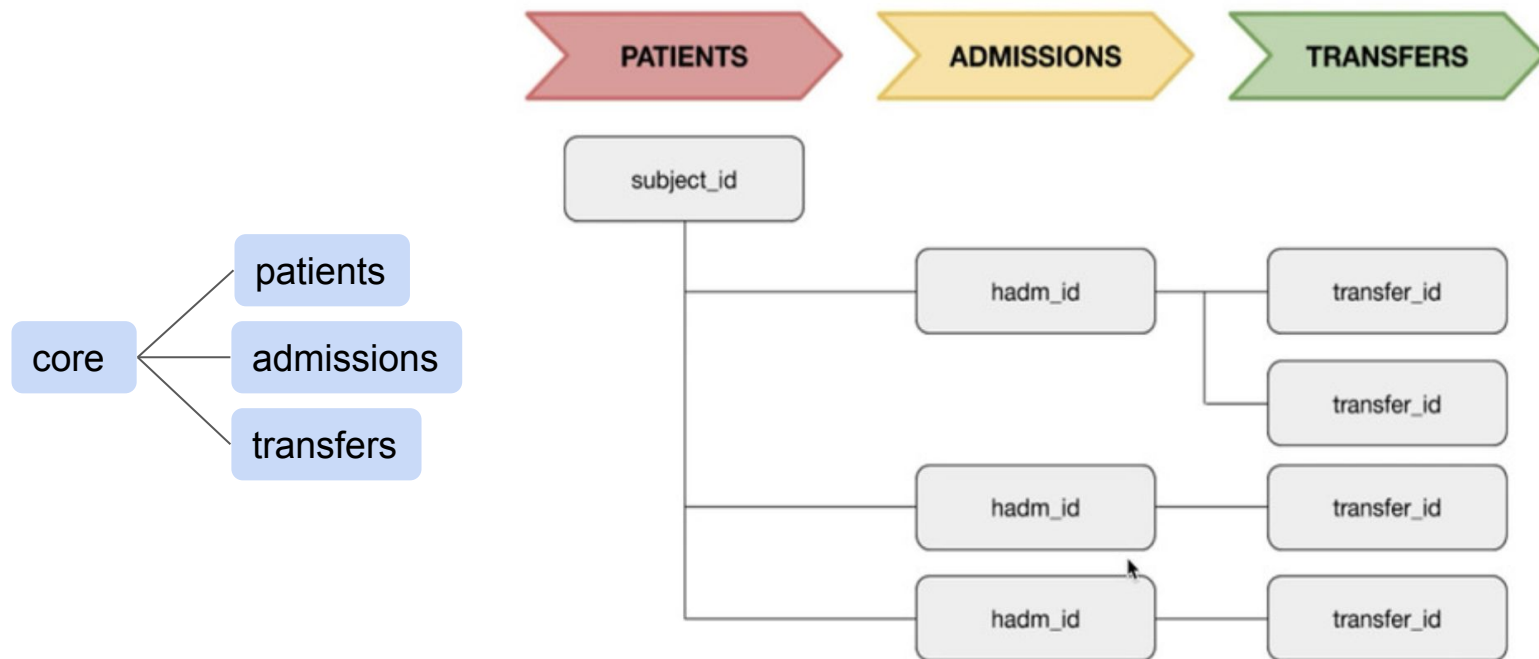


# MIMIC-IV Data and Uses

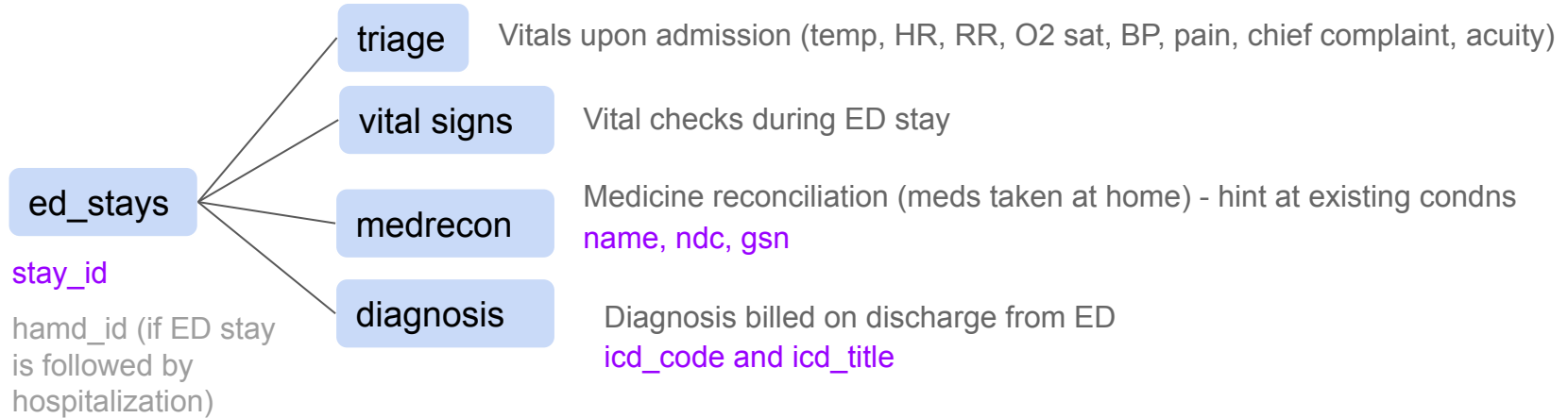
Julia Ding  
April 2022



# MIMIC-Core includes patients, admissions, and transfers



# MIMIC-ED includes each ED stay



# MIMIC-ICU uses Entity-Attribute-Value Tables

stay_id	charttime	itemid	value	valueuom
38821082	2176-11-26 02:34:00	220045	77	bpm
38821082	2176-11-26 02:34:00	220210	14	insp/min
38821082	2176-11-26 02:34:00	220277	94	%
38821082	2176-11-26 02:34:00	226512	71	kg

Who are we  
measuring?

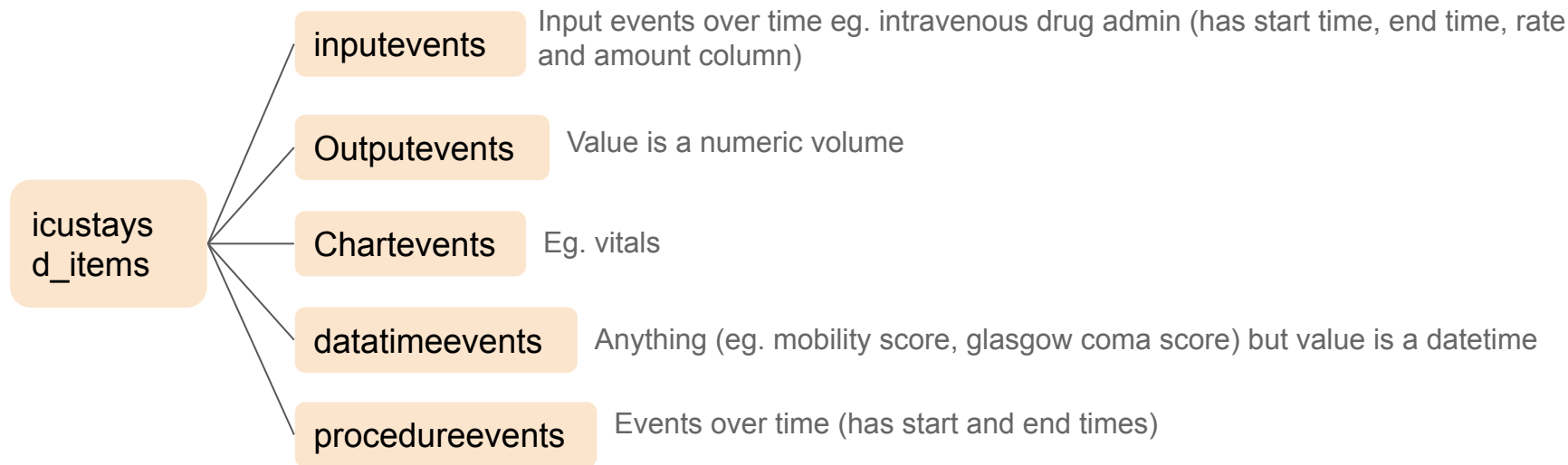
When did we  
measure it?

What did we  
measure?

What result did we  
get?

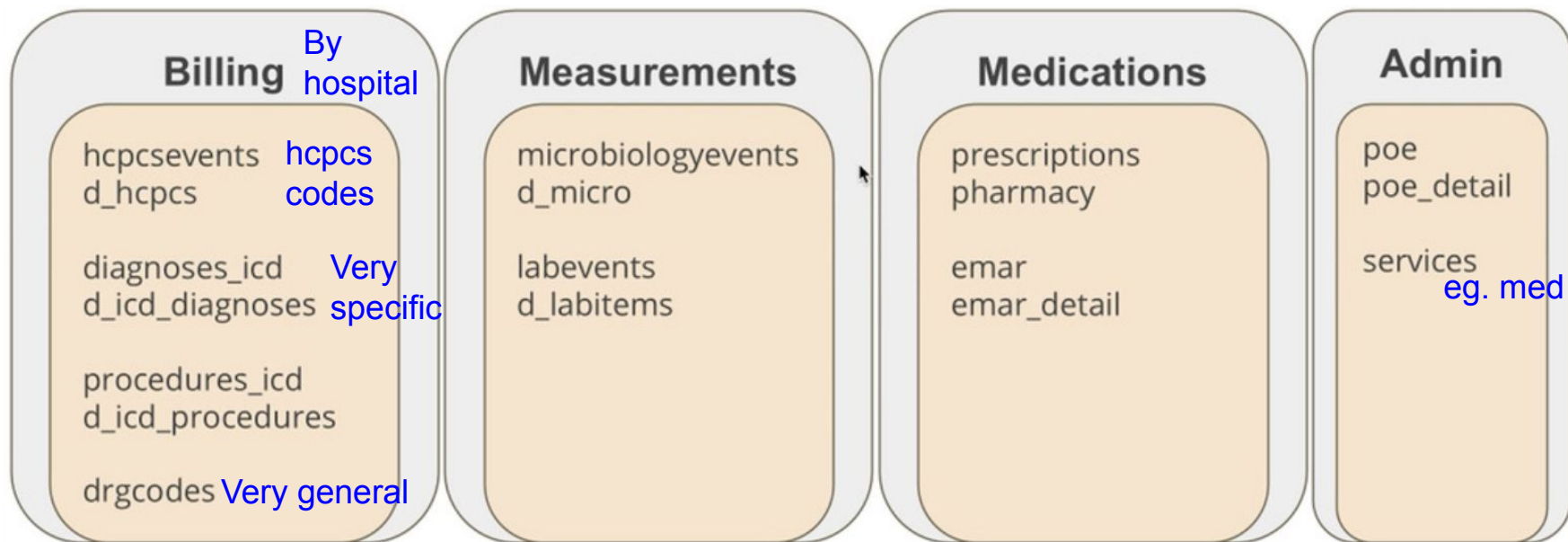
d\_items table gives  
definition of itemid

# MIMIC-ICU contains data collected in the ICU



# MIMIC-HOSP includes data sourced from hospital EHR

- May include data from outside the hospital as well
- May include data 1 year previous and 1 year after hospitalization



# Microbiology takes time

subject_id	charttime	storetime	test_name
10012853	2176-10-06 02:37:00	2176-10-10 14:17:00	URINE CULTURE

↑  
The patient

↑  
When the sample was taken

↑  
When the result came back

↑  
The test performed

- Includes antibiotics tested and their dilutions, and whether microorganism is resistant (R) or sensitive (S)



# Labs

The diagram illustrates the timeline of a lab test. It features a horizontal timeline with four key events marked by arrows pointing to specific columns in the table below:

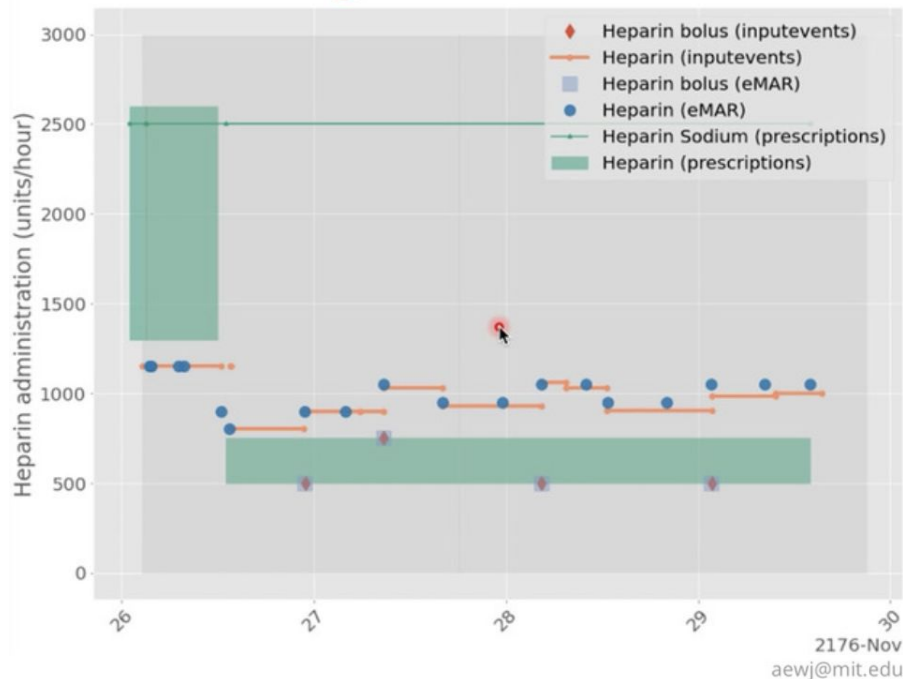
- Patient hospitalization** points to the `hadm_id` column.
- When the sample was taken** points to the `charttime` column.
- When the result came back** points to the `storetime` column.
- The test performed** points to the `itemid` column.

hadm_id	specimen_id	charttime	storetime	itemid	fluid	category	label	value	valuenum	valueuom	ref_range_lower	ref_range_upper
27882036	8164900	2176-11-26 01:52:00	2176-11-26 01:55:00	50802	Blood	Blood Gas	Base Excess	5	5.00	mEq/L	NaN	NaN

- Eg. blood sample → electrolytes, urine sample → pH, CSF → white blood cell count
- Generally faster turnaround than microbiology
- itemid should be thought of as combination of itemid, fluid, category, label
- Includes reference ranges

# Medications

- Prescriptions: meds ordered for patient
  - Includes start and stop times, intended dosage
  - Linked to pharmacy via [pharmacy\\_id](#)
- Pharmacy: details about those medications from the pharmacy (eg. route, frequency as directed)
- emar, emar\_detail: electronic medicine administration record
  - Barcode scanning



# Administration

- Admit, discharge, transfers data redundant from transfers
- Physician orders (eg. ECG, imaging)
- More information in poe\_detail (eg. full code)

*poe, poe\_detail* - Provider order entry

subject_id	poe_id	poe_seq	ordertime	order_type	order_subtype
10012853	10012853-195	195	2176-11-25 19:13:27	Radiology	Ultrasound
10012853	10012853-196	196	2176-11-25 20:51:17	Lab	None
10012853	10012853-197	197	2176-11-25 20:51:17	Lab	None
10012853	10012853-198	198	2176-11-25 21:09:30	Radiology	CT Scan
10012853	10012853-199	199	2176-11-25 21:34:36	Medications	None

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# Resources

MIMIC-IV Tutorial: <https://slideslive.com/embed/presentation/38931965>

MIMIC-IV Analyzing Clinical Questions Tutorial:  
<https://slideslive.com/embed/presentation/38932058>

MIMIC-IV Documentation: <https://mimic.mit.edu/docs/iv/>