Dataset Description

- ## Context

Sepsis is a life-threatening condition that occurs when the body's response to infection causes tissue damage, organ failure, or death. In the U.S., nearly 1.7 million people develop sepsis and 270,000 people die from sepsis each year; over one-third of people who die in U.S. hospitals have sepsis. Globally, an estimated 30 million people develop sepsis and 6 million people die from sepsis each year. Costs for managing sepsis in U.S. hospitals exceed those for any other health condition at $24 billion annually (13% of U.S. healthcare expenses); a majority of these costs is for patients who develop sepsis during their hospital stay. The developing world faces additional expenses from sepsis management and higher risks of adverse outcomes. Altogether, sepsis is a major public health issue responsible for significant morbidity, mortality, and healthcare expenses.

The goal of this dataset was the development of algorithms for the early prediction of sepsis using routinely available clinical data. Early predictions of sepsis are potentially lifesaving, while late or missed predictions are potentially life threatening, and false alarms consume hospital resources and erode trust in the algorithms themselves.

- ## Content

1552210 rows and 44 features

The table below shows that the dataset consists of clinical time series data: vital signs (rows 1-8), laboratory values (rows 9-34), demographics (rows 35-40), and outcome (row 41).

	Measurement	Description
1	HR	Heart rate (beats per minute)
2	O2Sat	Pulse oximetry (%)
3	Temp	Temperature (deg C)
4	SBP	Systolic BP (mm Hg)
5	MAP	Mean arterial pressure (mm Hg)
6	DBP	Diastolic BP (mm Hg)
7	Resp	Respiration rate (breaths per minute)
8	EtCO2	End tidal carbon dioxide (mm Hg)
9	BaseExcess	Excess bicarbonate (mmol/L)
10	HCO3	Bicarbonate (mmol/L)
11	FiO2	Fraction of inspired oxygen (%)
12	pH	pH
13	PaCO2	Partial pressure of carbon dioxide from arterial blood (mm Hg)
14	SaO2	Oxygen saturation from arterial blood (%)
15	AST	Aspartate transaminase (IU/L)
16	BUN	Blood urea nitrogen (mg/dL)
17	Alkalinephos	Alkaline phosphatase (IU/L)
18	Calcium	Calcium (mg/dL)
19	Chloride	Chloride (mmol/L)
20	Creatinine Creatinine	(mg/dL)
21	Bilirubin direct	Direct bilirubin (mg/dL)

22	Glucose	Serum glucose (mg/dL)
23	Lactate	Lactic acid (mg/dL)
24	Magnesium	Magnesium (mmol/dL)
25	Phosphate	Phosphate (mg/dL)
26	Potassium	Potassiam (mmol/L)
27	Bilirubin total	Total bilirubin (mg/dL)
28	TroponinI	Troponin I (ng/mL)
29	Hct	Hematocrit (%)
30	Hgb	Hemoglobin (g/dL)
31	PTT	Partial thromboplastin time (seconds)
32	WBC	Leukocyte count (count/L)
33	Fibrinogen	Fibrinogen concentration (mg/dL)
34	Platelets	Platelet count (count/mL)
35	Age	Age (years)
36	Gender	Female (0) or male (1)
37	Unit1	Administrative identifier for ICU unit (MICU); false (0) or true (1)
38	Unit2	Administrative identifier for ICU unit (SICU); false (0) or true (1)
39	HospAdmTime	Time between hospital and ICU admission (hours since ICU admission)
40	ICULOS	ICU length of stay (hours since ICU admission)
41	SepsisLabel	For septic patients, SepsisLabel is 1 if $t \geq t_{\text{sepsis}} - 6$ and 0 if $t < t_{\text{sepsis}} - 6$. For non-septic patients, SepsisLabel is 0.