

machine learning and ai tools for sepsis diagnosis: data sources, quality, reliability

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CRITICAL CARE MEDICINE

CRISMA CENTER

disclosures

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- consulting fees from Beckman Coulter, Edwards, Cytovale



caveats

- i am not a computer scientist
- member, international consensus conference on sepsis definitions (“Sepsis-3”)





agenda

- data sources available to optimize sepsis diagnosis
- quality
- reliability
- recommendations





CRITICAL CARE MEDICINE

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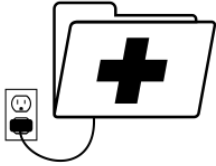
TraCs
A CRISMA Program

WSJ, April 16, 2020

data types



clinicians



structured data in the EHR



unstructured data



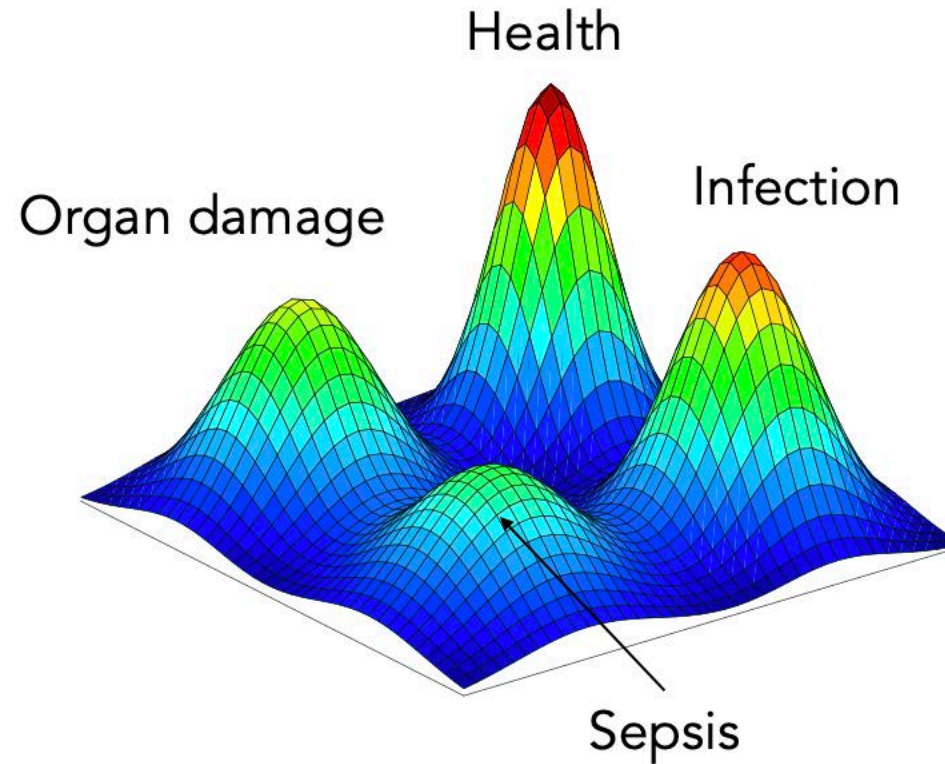
emerging data types



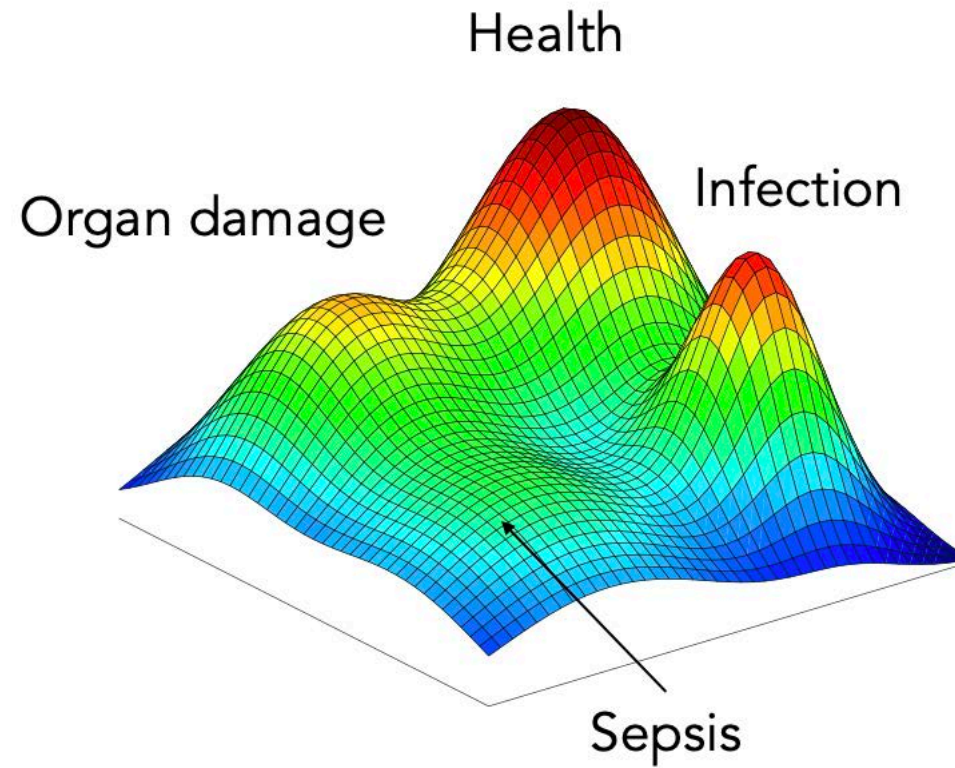
Data sources	Availability	Cost	Reliability	Quality
				
				
				
				



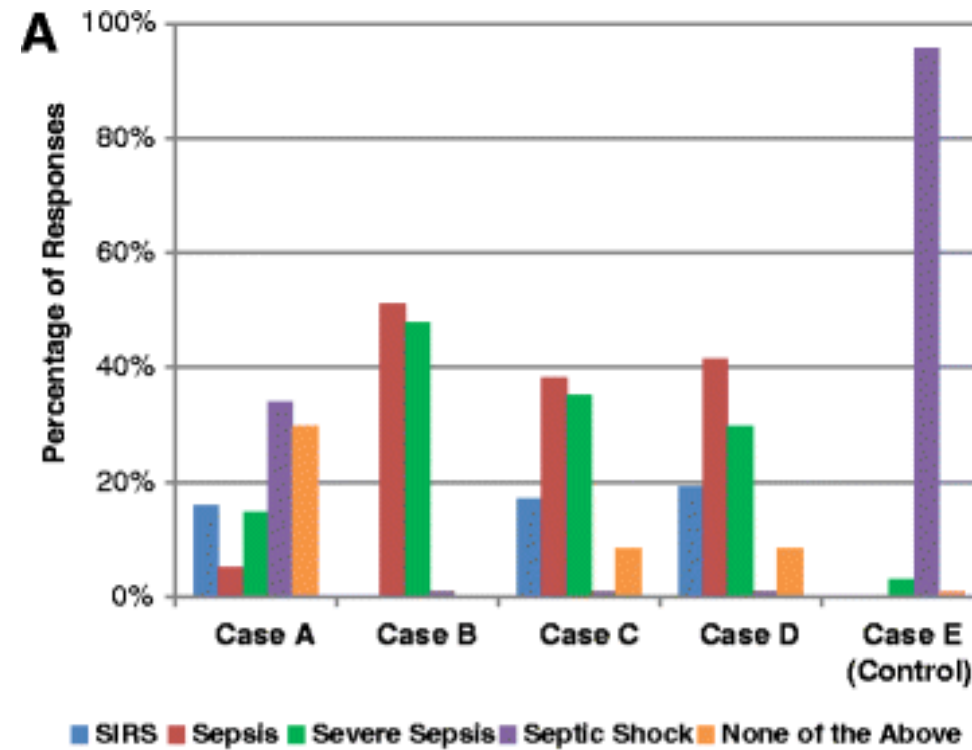
why is diagnosing sepsis difficult?







why is diagnosing sepsis difficult?



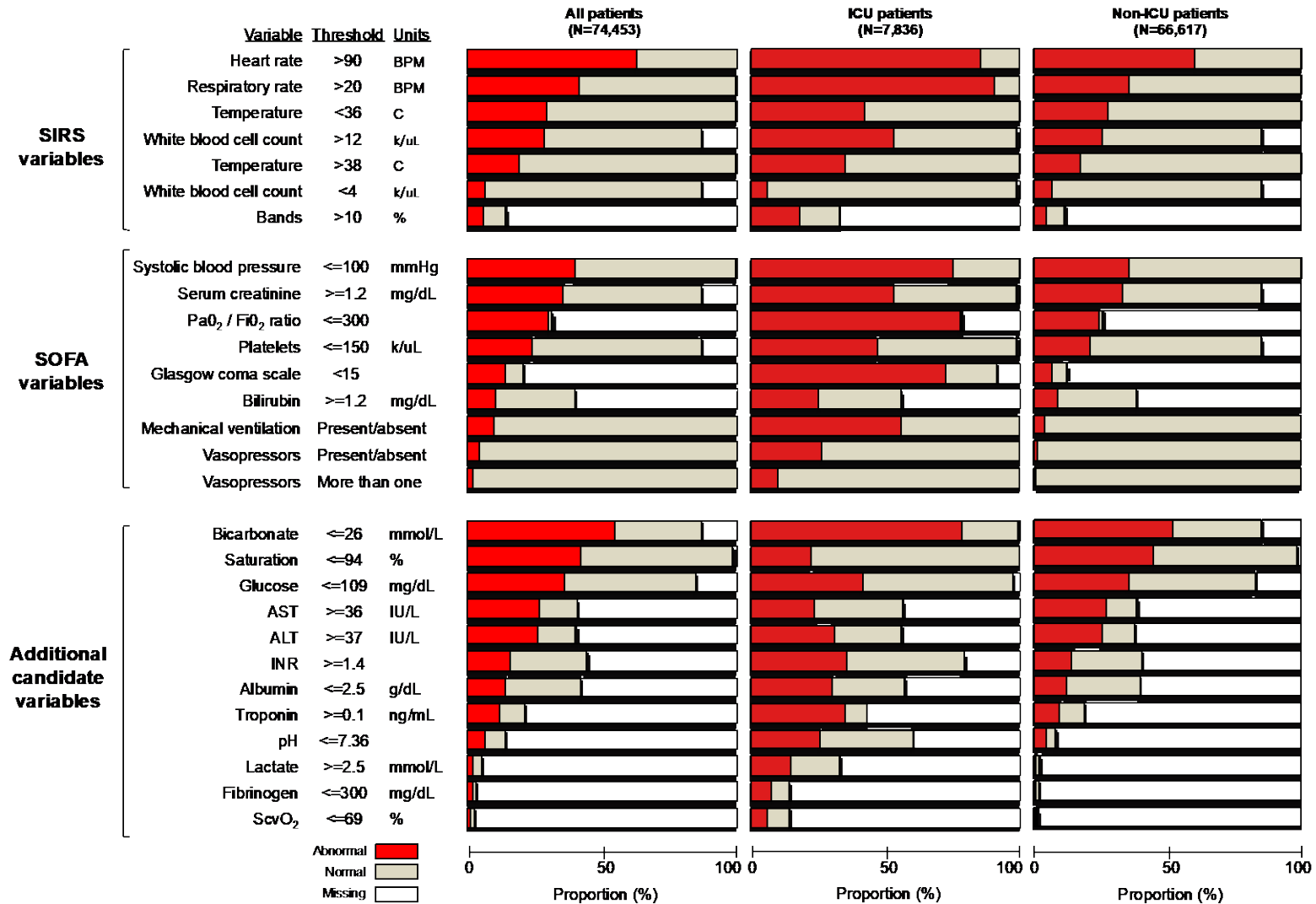
clinicians do not agree

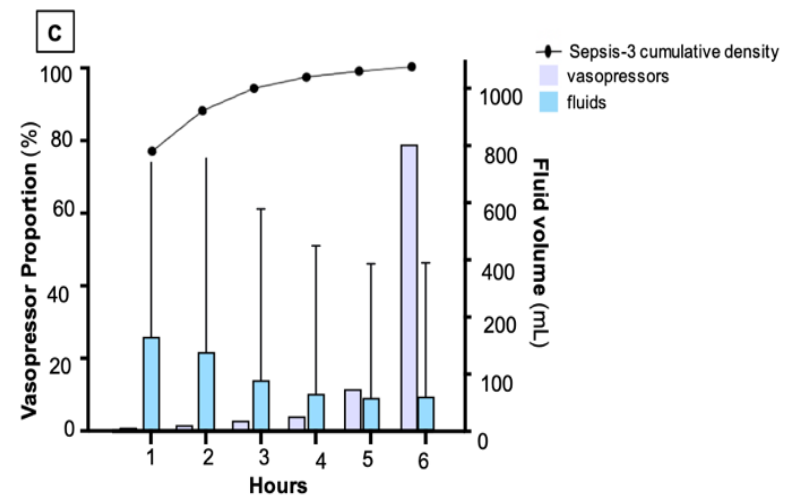
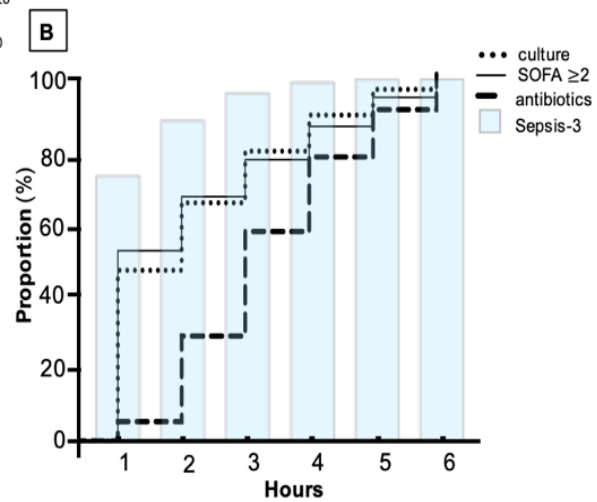
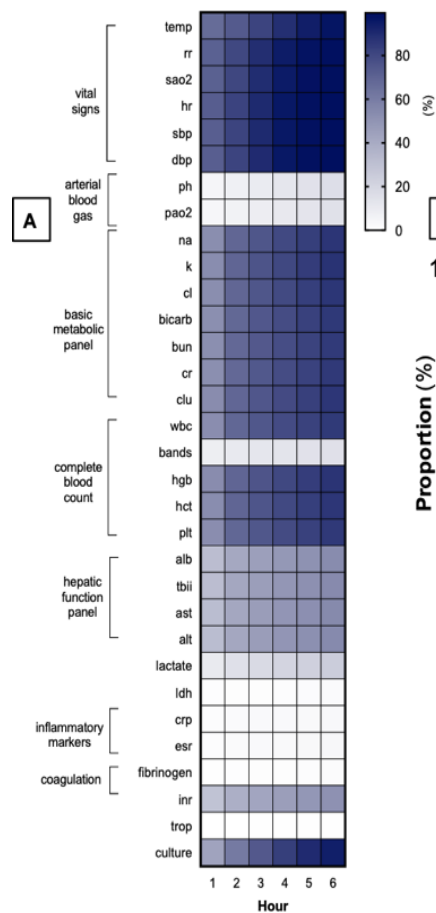


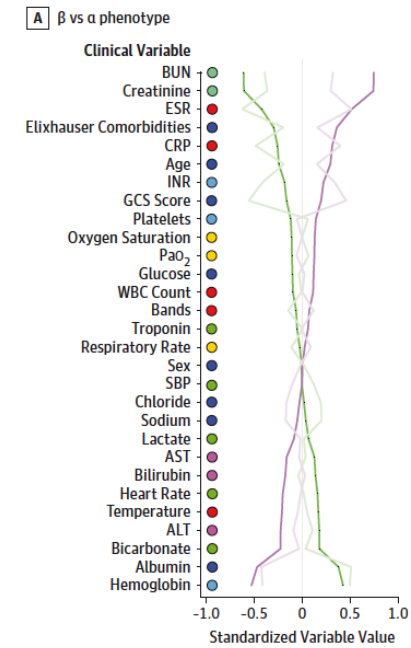
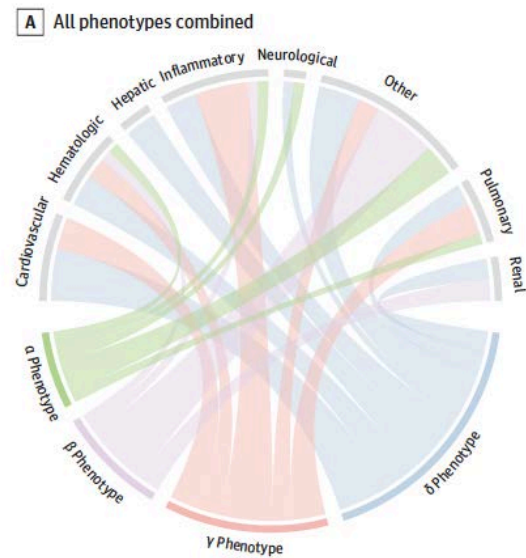
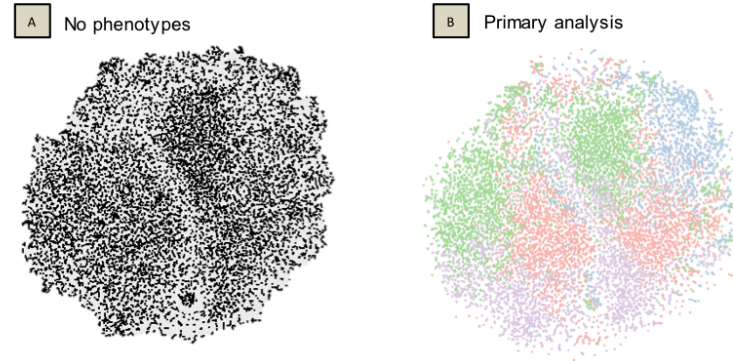
Data sources	Availability	Cost	Reliability	Quality
				
				
				
				


structured ehr data



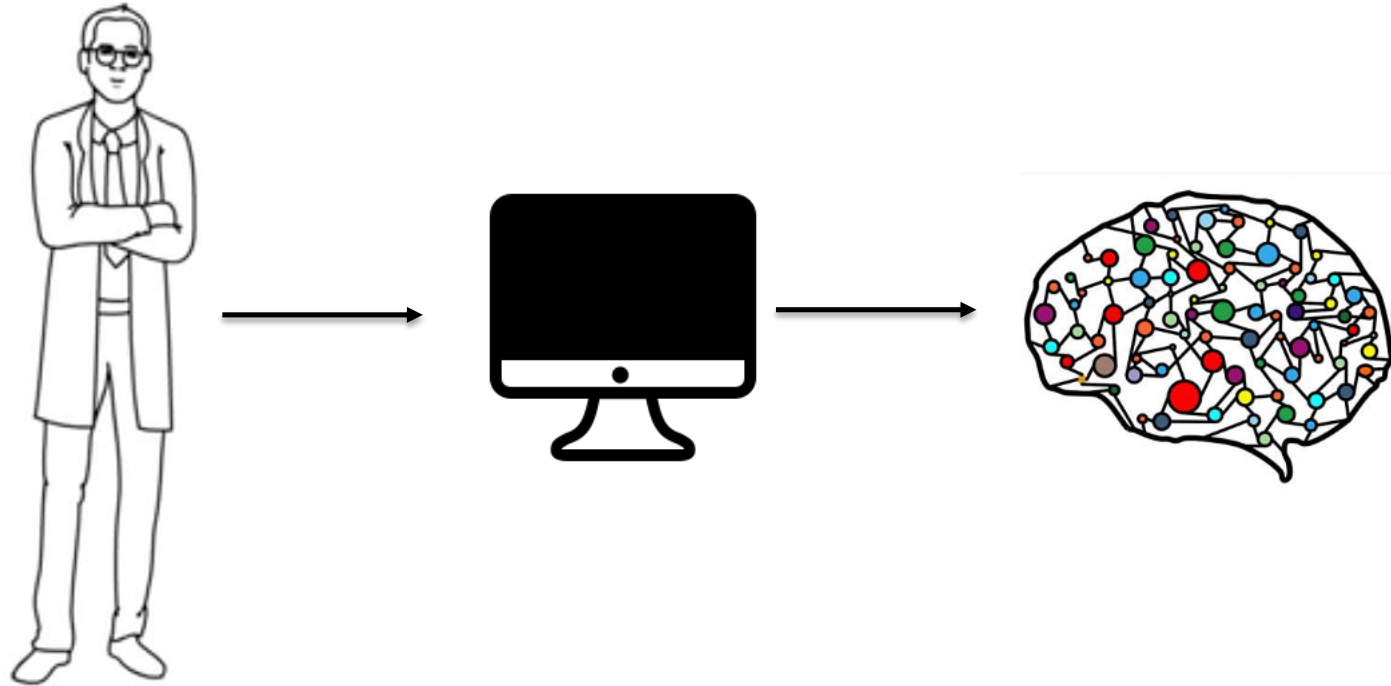




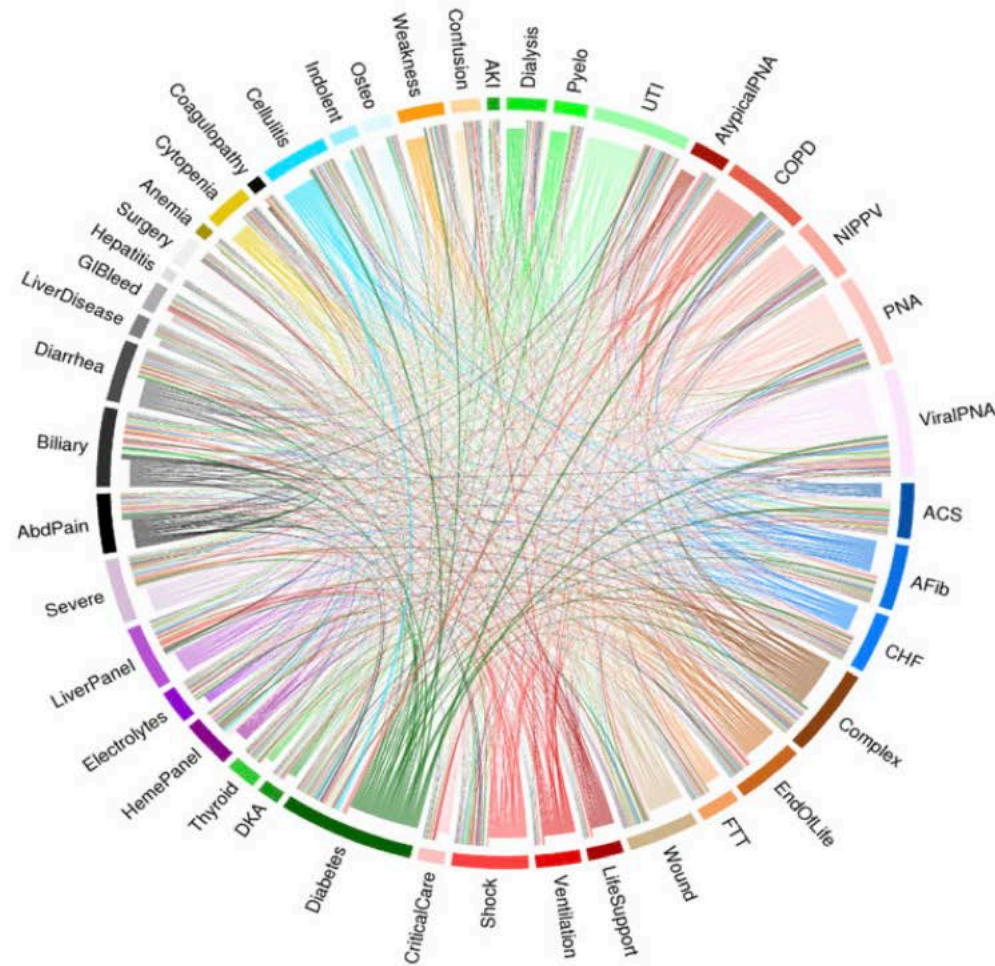

















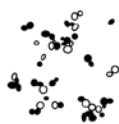
Data sources	Availability	Cost	Reliability	Quality
				
				
				
				

unstructured ehr data



unstructured ehr data



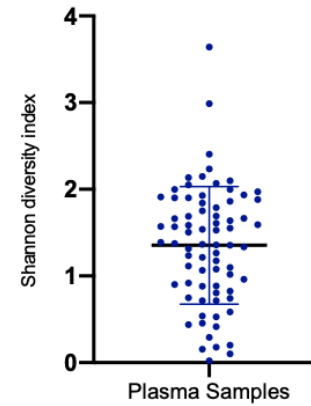
Data sources	Availability	Cost	Reliability	Quality
				
				
				
				



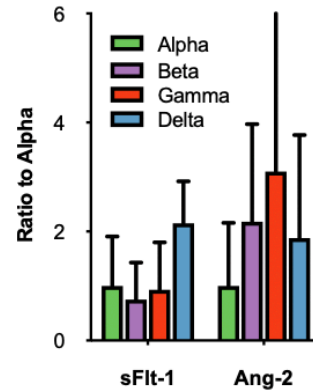
emerging data types



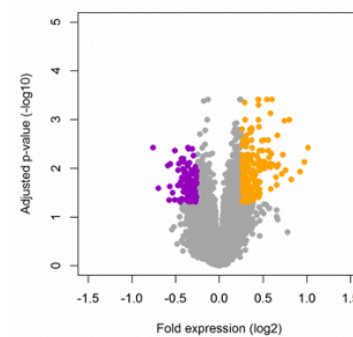
Trajectory
longitudinal data



Microbiome






















Protein
biomarkers



Transcriptome



Data sources	Availability	Cost	Reliability	Quality
				
				
				
				



trade offs

