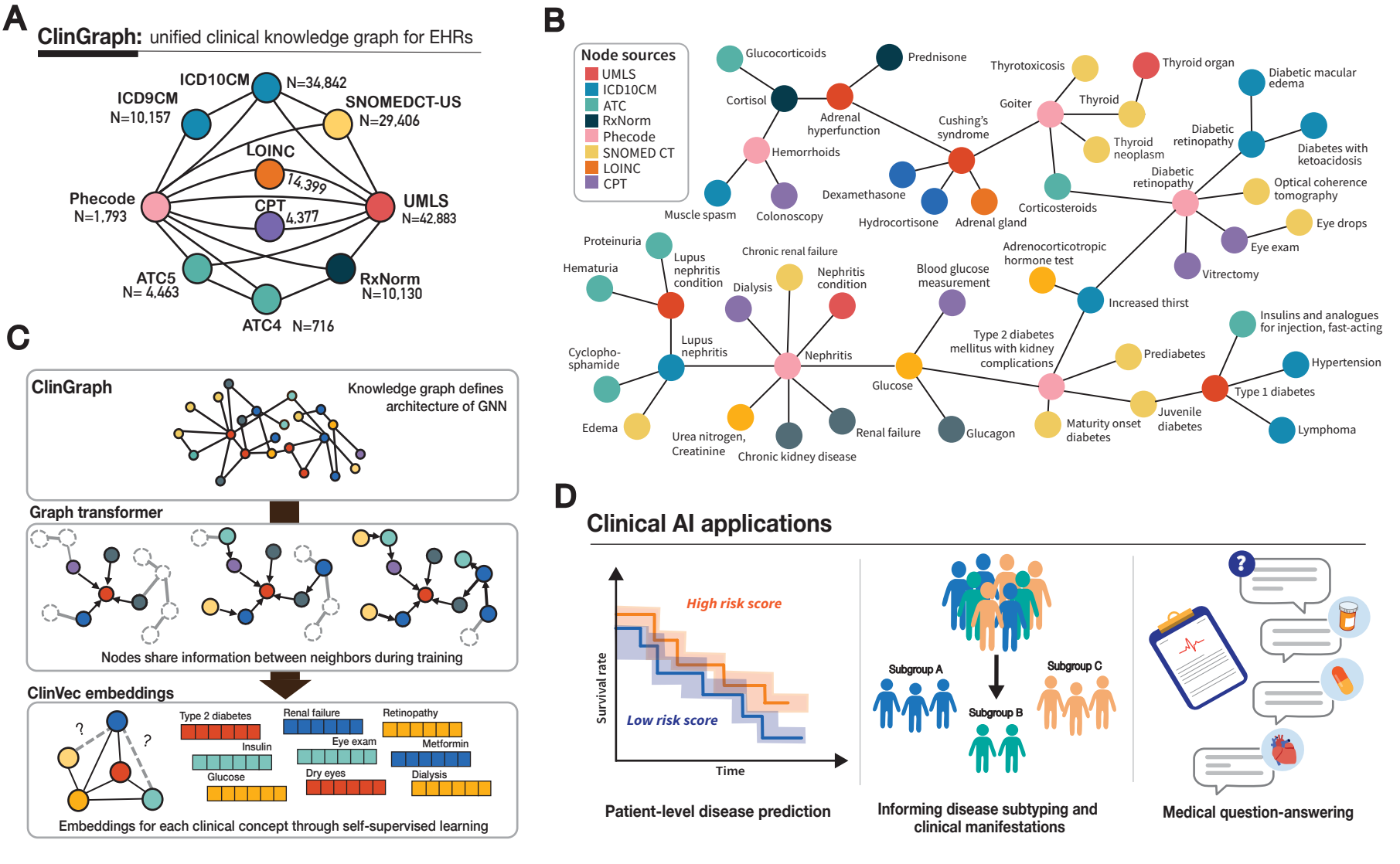
A
ClinGraph: unified clinical knowledge graph for EHRs
ICD10CM
N=34,842
ICD9CM
N=10,157
SNOMEDCT-US
N=29,406
LOINC
14,399
Phecode
N=1,793
CPT
4,377
UMLS
N=42,883
ATC5
N= 4,463
RxNorm
N=10,130
ATC4 N=716
B
Node sources
UMLS
ICD10CM
ATC
RxNorm
Phecode
SNOMED CT
LOINC
CPT
Glucocorticoids
Prednisone
Cortisol
Adrenal hyperfunction
Hemorrhoids
Muscle spasm
Colonoscopy
Thyrotoxicosis
Thyroid organ
Goiter
Thyroid
Cushing's syndrome
Thyroid neoplasm
Dexamethasone
Hydrocortisone
Adrenal gland
Corticosteroids
Diabetic macular edema
Diabetic retinopathy
Diabetes with ketoacidosis
Diabetic retinopathy
Optical coherence tomography
Eye drops
Eye exam
Vitrectomy
Proteinuria
Hematuria
Lupus nephritis condition
Chronic renal failure
Dialysis
Nephritis condition
Blood glucose measurement
Adrenocorticotropic hormone test
Increased thirst
Cyclopho-sphamide
Lupus nephritis
Nephritis
Glucose
Type 2 diabetes mellitus with kidney complications
Prediabetes
Insulins and analogues for injection, fast-acting
Hypertension
Type 1 diabetes
Edema
Urea nitrogen, Creatinine
Chronic kidney disease
Renal failure
Glucagon
Maturity onset diabetes
Juvenile diabetes
Lymphoma
C
ClinGraph
Knowledge graph defines architecture of GNN
Graph transformer
Nodes share information between neighbors during training
ClinVec embeddings
Type 2 diabetes
Renal failure
Retinopathy
Insulin
Eye exam
Metformin
Glucose
Dry eyes
Dialysis
Embeddings for each clinical concept through self-supervised learning
D
Clinical AI applications
High risk score
Low risk score
Survival rate
Time
Patient-level disease prediction
Subgroup A
Subgroup B
Subgroup C
Informing disease subtyping and clinical manifestations
Medical question-answering