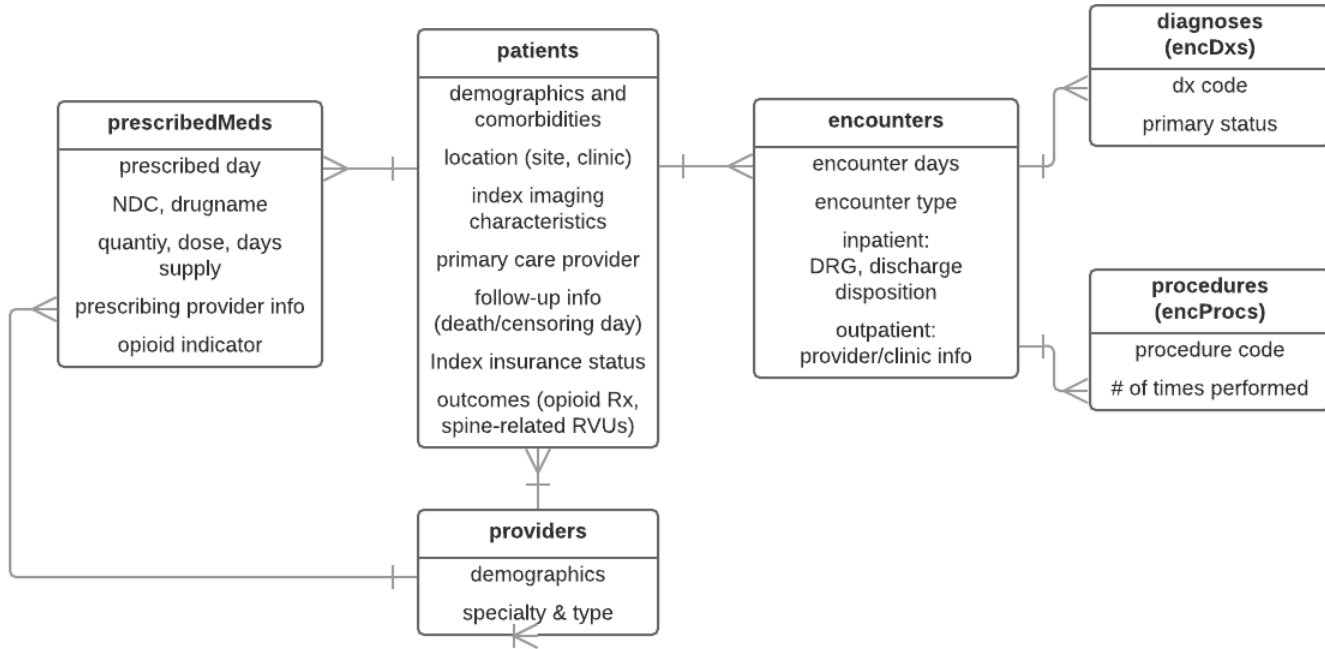


LIRE Database Schema



List of tables

table	description	records	notes
patients	Includes a single record per patient. Fields describe the patient's demographic and index image characteristics. Calculated fields include LIRE manuscript outcomes.	250,401	Includes patients who meet the LIRE study inclusion criteria. Patients with exclusions can be identified with "ex" field.
providers	Includes a single record per LIRE provider. Fields describe the provider demographics, provider type, and specialty.	3,257	Only includes providers who ordered index images.
encounters	Includes a single record for each encounter. Both inpatient stays and provider visits are included. Links to patients through patientID field.	~15M	
encDxs	Includes diagnosis codes associated with encounters. Links to encounters through encID field.	~35M	
encProcs	Includes procedure codes associated with encounters. Links to encounters through encID field.	~36M	
prescribedMeds	Includes a single record per prescription. Includes inpatient prescriptions for sites that provide inpatient prescriptions. Links to patients through patientID field.	~19M	Note that several fields are missing considerable data.

patients

field	description	type	codes	notes
patientID	study ID (DCC)	integer		
siteID	site ID	integer	Codes are blinded to mask site identity	
providerID	provider ID (DCC)	integer		
cptID	CPT ID	integer	1 = 72080 X-ray, Thoracolumbar, 2 Views 2 = 72100 X-ray, Lumbosacral, 2 or 3 Views 3 = 72110 X-ray, Lumbosacral, Minimum 4 Views 4 = 72114 X-ray, Lumbosacral, Compl c/ Bend, Min 6V 5 = 72131 CT, Lumbar Spine s/ Contrast 6 = 72132 CT, Lumbar Spine c/ Contrast 7 = 72133 CT, Lumbar Spine c/s Contrast 8 = 72148 MRI, Lumbar Spine s/ Contrast 9 = 72149 MRI, Lumbar Spine c/ Contrast 10 = 72158 MRI, Lumbar Spine c/s Contrast	
imageTypeID	Index image type ID	integer	1 = X-ray, 2 = CT, 3 = MRI	
facilityID	Facility ID (DCC)	integer	Codes are blinded to mask facility identity	This is the randomization unit.
wave	Intervention wave	integer	Group of clinics randomized during a pre-specified 6-month interval	Values 1-5

field	description	type	codes	notes
tp	Time period	integer	0 = 10/01/13 to 03/31/14 1 = 04/01/14 to 09/30/14 2 = 10/01/14 to 03/31/15 3 = 04/01/15 to 09/30/15 4 = 10/01/15 to 03/31/16 5 = 04/01/16 to 09/30/16 ** For Kaiser 0 = 10/01/13 to 05/31/14 1 = 06/01/14 to 09/30/14	
tx	Intervention indicator	integer	0 = Non-intervention period, 1 = Intervention period	
age	Age in years	integer		Age capped at 90 (90, 91, 92, ... all coded as 90) for de-identification purposes.
ageRangeID	Age range	integer	1 = 18-39 2 = 40-60 3 = >60	
genderID	Gender ID	integer	1 = Female 2 = Male 3 = Other 9 = Not available	
raceID	Race ID	integer	1 = Asian 2 = Black or African American 3 = Native Hawaiian or other Pacific Islander 4 = Native American/Alaska Native 5 = Multiracial, particular races unknown or not reported 6 = White 7 = Other (including two or more races) 9 = Unknown or not reported	
ethnicityID	Ethnicity ID	integer	0 = Hispanic or Latino 1 = Not Hispanic or Latino 9 = Not available	

field	description	type	codes	notes
ex	Exclusion type hierarchy	integer	0 = Eligible 1 = Image report indicating prior image in past year 2 = Procedure record indicating prior image in past year 3 = Image occurred during inpatient stay 4 = Image occurred during ED visit 5 = Completed date is >4h AFTER finalized 6 = Finalized >96h after completed 7 = No utilization 1 year before through 1 year after index	
deathDay	Day of death	integer		Day is relative to index imaging day.
charlson	Charlson Comorbidity Index	integer		
charlsonCat	Charlson Comorbidity Index category	integer	0 = 0, 1 = 1, 2 = 2, 3 = 3 or higher	
ses	Socioeconomic status index	integer	SES index based on geographic location	Missing if not provided by sites.
insPrimIdx	Primary health insurance type at index	integer	1 = Medicare 2 = Medicaid/state-subsidized 3 = Commercial (incl. Medicare supplements) 4 = VA 5 = Self-pay 9 = Unknown/NA/missing	
insSecIdx	Secondary health insurance type at index	integer	1 = Medicare 2 = Medicaid/state-subsidized 3 = Commercial (incl. Medicare supplements) 4 = VA 5 = Self-pay 9 = Unknown/NA/missing	
lireFinding	LIRE finding in index image report	integer	0 = No, 1 = Yes	Obtained via natural language processing on radiology text report.
clinImp	Likely clinically important finding in index image report	integer	0 = No, 1 = Yes	Obtained via natural language processing on radiology text report.
opioidPrior	Opioid prescription within 120 days prior to index imaging		0 = No, 1 = Yes	

field	description	type	codes	notes
opioidDay	Earliest day of non-inpatient opioid prescription from a LIRE provider occurring after index imaging	integer		Value is number of days since index imaging. Missing if no non-inpatient opioid prescription from a LIRE provider after index imaging.
apOpioidDay	Earliest day of non-inpatient opioid prescription from any provider occurring after index imaging	integer		Value is number of days since index imaging. Missing if no non-inpatient opioid prescription after index imaging.
rvu90d	Spine-related relative value units (RVUs) through 90 days after index imaging			
rvu1y	Spine-related relative value units (RVUs) through 1 year after index imaging			
clinicSize	Relative clinic size	integer	1 = Small, 2 = Medium, 3 = Large	Relative size of clinic within health system. This field was used to stratify randomization.

providers

field	description	type	codes	notes
providerID	LIRE provider ID (DCC)	integer		
gender	Gender	character	M, F	
age	Age	integer		
providerType	Provider type	character	MD, DO, NP, PA, etc.	
providerSpecialty	Specialty	character	FM - family medicine, IM - internal medicine, OT - other	

encounters

field	description	type	codes	notes
encID	encounter ID (DCC)	integer		
patientID	study ID (DCC)	integer		
siteID	site ID	integer		
ipFlag	inpatient Flag	integer	0 = Not an inpatient stay, 1 = inpatient stay	
encType	encounter type	character		Missing for some encounters.
encSubType	encounter subtype	character		Missing for some encounters. Missing for IP stays.
visitDay	visit day/admission day	integer		Relative to index date. For inpatient stays this is the admission day.
dischargeDay	discharge day	integer		Relative to index date. Missing for provider visits.
dischargeDisp	discharge disposition	character	A = alive, E = expired, U = unknown, X = incorrect expired	Missing for provider visits.
drg	diagnosis-related group (DRG)	character		Missing for provider visits.

diagnoses (encDxs)

field	description	type	codes	notes
encDxID	encounter diagnosis ID (DCC)	integer		
encID	encounter ID (DCC)	integer		Links to encounters table.
patientID	study ID (DCC)	integer		
siteID	site ID	integer		
dx	diagnosis code	character	ICD 9/10 codes	
dxTypeID	diagnosis type ID	integer	9 = ICD-9 10 = ICD-10 88 = site-specific 99 = Non-code (unknown DX)	
primaryDx	visit day	integer	0 = Not primary, 1 = primary, 99 = unknown status	Not all sites have a reliable indication of the primary diagnosis.
dxID	diagnosis ID (DCC)	integer		This connects the diagnosis to DCC diagnosis metadata (e.g. comorbidity info).
dxDay	diagnosis day	integer		Relative to index date.

procedures (encProcs)

field	description	type	codes	notes
encProcID	encounter procedure ID (DCC)	integer		
encID	encounter ID (DCC)	integer		Links to encounters table.
patientID	study ID (DCC)	integer		
siteID	site ID	integer		
procCode	procedure code	integer	CPT codes	
procCnt	number of times this procedure performed	integer		
procID	procedure ID	integer		This connects the procedure to DCC procedures metadata.
procDay	procedure day	integer		Relative to index date.

prescribedMeds

field	description	type	codes	notes
siteID	site ID	integer		
prescribedMedID	Med ID	integer		
patientID	study ID (DCC)	integer		
prescribedDay	Prescription day	integer		Relative to index date.
orderStatus	Order status	character		
drugName	Drug name	character		
rxNorm*	Rx Norm	character		
ndc*	NDC code	character		Not all sites formatted the same. This is what the sites provided and no attempt has been made to format it properly.
quantity*	Quantity	character		Not formatted (just text provided by site)
quantityUnits*	Quantity units	character		Not formatted (just text provided by site)
dose*	Dose amount	character		Not formatted (just text provided by site)
doseUnits*	Dose units	character		Not formatted (just text provided by site)
daysSupply*	Days supply	character		Not formatted (just text provided by site)
providerSpecialty*	Provider specialty	character		Not formatted (just text provided by site)
prescription*	Description of prescription	character		

field	description	type	codes	notes
inpatientFlag	Inpatient flag provided by site	integer		
providerID	provider ID (DCC)	integer		Missing if not provided by site.
lireProvider	LIRE provider indicator	integer	0 = Not a LIRE provider, 1 = LIRE provider	
indexProvider	Index provider indicator	integer	0 = Not that patient's index provider 1 = patient's index provider	
inpatientDayFlag	Occurs during inpatient stay	integer	0 = No, 1 = Yes	If prescription day occurs during an inpatient stay as submitted by sites then this will be "Yes".
admitDayFlag	Occurs on admit day of an inpatient stay	integer	0 = No, 1 = Yes	Missing if not during an inpatient stay by "inpatientDayFlag". In some instances there are overlapping inpatient stays. If prescription day occurs on admit day of one but a middle day (i.e. not admit or discharge day) of another this will be 0.
dischargeDayFlag	Occurs on discharge day of an inpatient stay	integer	0 = No, 1 = Yes	Missing if not during an inpatient stay by "inpatientDayFlag". In some instances there are overlapping inpatient stays. If prescription day occurs on discharge day of one but a middle day (i.e. not admit or discharge day) of another this will be 0.
opioid	Indicator of opioid	integer	0 = No, 1 = Yes	

* Field has considerable missing data