

Case	Query (adapted)	Multi-hop path	Expected Results	Actual results	Remarks																				
1	Find patients PRESCRIBED Lisinopril (or equivalent) who were DIAGNOSED WITH Rhabdomyolysis within 30 days of the prescription, and whose nodes or related clinical data mention 'myalgia' or 'muscle pain'.	<ul style="list-style-type: none"> Path: Medication (Lisinopril) — [GDS Similarity] → Medication (Related) ← [IS_PRESCRIBED] — Patient — [IS_DIAGNOSED_WITH] → Condition (RDM) Attributes Checked: [similarity score], [start_date], [occurrence_date], [clinical_summary: "myalgia" OR "muscle pain"] 	<p>2 patients: Priya and Rajendran (clinical notes states "soreness")</p> <p>Medications: Lisinopril and Atorvastatin (linked by similarity).</p>	<table border="1"> <thead> <tr> <th>Patient</th> <th>Drug_Used</th> <th>Score</th> </tr> </thead> <tbody> <tr> <td>"Rajendran s/o M."</td> <td>"Atorvastatin"</td> <td>0.25</td> </tr> <tr> <td>"Rajendran s/o M."</td> <td>"Lisinopril"</td> <td>1.0</td> </tr> <tr> <td>"Priya Devi"</td> <td>"Lisinopril"</td> <td>1.0</td> </tr> </tbody> </table>	Patient	Drug_Used	Score	"Rajendran s/o M."	"Atorvastatin"	0.25	"Rajendran s/o M."	"Lisinopril"	1.0	"Priya Devi"	"Lisinopril"	1.0	"equivalent" works using GDS similarity between drugs Priya direct signal Rajendran equivalent signal								
Patient	Drug_Used	Score																							
"Rajendran s/o M."	"Atorvastatin"	0.25																							
"Rajendran s/o M."	"Lisinopril"	1.0																							
"Priya Devi"	"Lisinopril"	1.0																							
2	Find patients who were on a medication, experienced a Trigger (Statin-Induced Myopathy), and were switched to a different medication within 48 hours .	<ul style="list-style-type: none"> Path: Patient — [IS_PRESCRIBED] → Medication (Old) AND Patient — [IS_PRESCRIBED] → Medication (New) Attributes Checked: [start_date (Old)], [start_date (New)], [occurrence_date (Trigger)], [time_diff: <= 48 hours] 	<p>Patient: Tan Wei Ling</p> <p>Was on Atorvastatin, experienced "Statin-Induced Myopathy", switched to Ezetimibe" within 48hr</p>	<table border="1"> <thead> <tr> <th>p.name</th> <th>From_Drug</th> <th>To_Drug</th> <th>Equivalence_Score</th> </tr> </thead> <tbody> <tr> <td>"Tan Wei Ling"</td> <td>"Atorvastatin"</td> <td>"Ezetimibe"</td> <td>0.5</td> </tr> <tr> <td>"Tan Wei Ling"</td> <td>"Atorvastatin"</td> <td>"Ezetimibe"</td> <td>0.5</td> </tr> <tr> <td>"Tan Wei Ling"</td> <td>"Lisinopril"</td> <td>"Ezetimibe"</td> <td>0.125</td> </tr> <tr> <td>"Tan Wei Ling"</td> <td>"Lisinopril"</td> <td>"Ezetimibe"</td> <td>0.125</td> </tr> </tbody> </table>	p.name	From_Drug	To_Drug	Equivalence_Score	"Tan Wei Ling"	"Atorvastatin"	"Ezetimibe"	0.5	"Tan Wei Ling"	"Atorvastatin"	"Ezetimibe"	0.5	"Tan Wei Ling"	"Lisinopril"	"Ezetimibe"	0.125	"Tan Wei Ling"	"Lisinopril"	"Ezetimibe"	0.125	drug switch to a clinically equivalent one which is functionally or structurally similar
p.name	From_Drug	To_Drug	Equivalence_Score																						
"Tan Wei Ling"	"Atorvastatin"	"Ezetimibe"	0.5																						
"Tan Wei Ling"	"Atorvastatin"	"Ezetimibe"	0.5																						
"Tan Wei Ling"	"Lisinopril"	"Ezetimibe"	0.125																						
"Tan Wei Ling"	"Lisinopril"	"Ezetimibe"	0.125																						
3	Find cases where the PRESCRIBED duration for Atorvastatin and Lisinopril overlapped in time, followed by an occurrence_date for a Condition_RDM diagnosis.	<ul style="list-style-type: none"> Path: Patient — [IS_PRESCRIBED] → Medication (Atorvastatin) AND Patient — [IS_PRESCRIBED] → Medication (Lisinopril) — [Sequence] → Condition (RDM) Attributes Checked: [start_date (Med 1)], [duration_days (Med 1)], [start_date (Med 2)], [duration_days (Med 2)], [occurrence_date (Diagnosis)] 	<p>Patient: Rajendran</p> <p>Drugs: Lisinopril and Atorvastatin, injury occurred exactly 14 days after the second drug was added</p>	<table border="1"> <thead> <tr> <th>Patient</th> <th>ACE_Inhibitor</th> <th>Statin</th> <th>Injury_Date</th> <th>ACE_Start</th> <th>Statin_Start</th> </tr> </thead> <tbody> <tr> <td>"Rajendran s/o M."</td> <td>"Lisinopril"</td> <td>"Atorvastatin"</td> <td>2024-04-15</td> <td>2024-01-15</td> <td>2024-04-01</td> </tr> </tbody> </table>	Patient	ACE_Inhibitor	Statin	Injury_Date	ACE_Start	Statin_Start	"Rajendran s/o M."	"Lisinopril"	"Atorvastatin"	2024-04-15	2024-01-15	2024-04-01	Shows drug overlap window, currently just native query filter and match								
Patient	ACE_Inhibitor	Statin	Injury_Date	ACE_Start	Statin_Start																				
"Rajendran s/o M."	"Lisinopril"	"Atorvastatin"	2024-04-15	2024-01-15	2024-04-01																				
4	Across the entire population, what is the incidence rate of RDM within 30 days of a patient being on a high-risk co-exposure (any ACE Inhibitor + any Statin), and does a history of Hypertension significantly accelerate the time-to-injury? <i>Modified from "Sample Query" slide</i>	<ul style="list-style-type: none"> Path: Condition (Hypertension) ← [HAS_HISTORY] — Patient — [IS_PRESCRIBED] → (Med 1 + Med 2) — [IS_DIAGNOSED_WITH] → Condition (RDM) Attributes Checked: [occurrence_date (Hypertension)], [start_date (Meds)], [occurrence_date (RDM)], [time_to_injury gap] 	summary of the drug-drug interaction (DDI) risk Patient count + drug combo	<table border="1"> <thead> <tr> <th>Drug_Combo</th> <th>Patient_Count</th> <th>Avg_Days_to_Injury</th> <th>Patients_With_Hypertension</th> </tr> </thead> <tbody> <tr> <td>"Lisinopril + Atorvastatin"</td> <td>1</td> <td>14.0</td> <td>1</td> </tr> <tr> <td>"Atorvastatin + Lisinopril"</td> <td>1</td> <td>14.0</td> <td>1</td> </tr> </tbody> </table>	Drug_Combo	Patient_Count	Avg_Days_to_Injury	Patients_With_Hypertension	"Lisinopril + Atorvastatin"	1	14.0	1	"Atorvastatin + Lisinopril"	1	14.0	1	GDS finds patients on drugs equivalent to the high risk pair Currently only Rajendran matches								
Drug_Combo	Patient_Count	Avg_Days_to_Injury	Patients_With_Hypertension																						
"Lisinopril + Atorvastatin"	1	14.0	1																						
"Atorvastatin + Lisinopril"	1	14.0	1																						

5	<p>Identifies patients who haven't been diagnosed with RDM yet, but whose clinical profile (conditions and history) is highly similar to patients who have been diagnosed</p> <p><i>Condition match</i></p> <ul style="list-style-type: none"> Path: Patient (Diagnosed Case) — [IS_DIAGNOSED_WITH] → Condition ← [IS_DIAGNOSED_WITH] — Patient (Not Yet Diagnosed) Attributes Checked: [Jaccard similarity score], [clinical_summary (for profile matching)], [age], [gender] 	Condition combo + patient match % + shared conditions	<table border="1"> <thead> <tr> <th>High_Risk_Patient</th><th>Clinical_Twin_With_Injury</th><th>Match_Score</th><th>Shared_Conditions</th></tr> </thead> <tbody> <tr> <td>"Priya Devi"</td><td>"Rajendran s/o Muthu"</td><td>1.0</td><td>["Hypertension", "Rhabdomyolysis"]</td></tr> <tr> <td>"Rajendran s/o Muthu"</td><td>"Priya Devi"</td><td>1.0</td><td>["Hypertension", "Rhabdomyolysis"]</td></tr> <tr> <td>"Chloe de Souza"</td><td>"Rajendran s/o Muthu"</td><td>0.5</td><td>["Hypertension"]</td></tr> <tr> <td>"David Lim"</td><td>"Rajendran s/o Muthu"</td><td>0.5</td><td>["Hypertension"]</td></tr> </tbody> </table>	High_Risk_Patient	Clinical_Twin_With_Injury	Match_Score	Shared_Conditions	"Priya Devi"	"Rajendran s/o Muthu"	1.0	["Hypertension", "Rhabdomyolysis"]	"Rajendran s/o Muthu"	"Priya Devi"	1.0	["Hypertension", "Rhabdomyolysis"]	"Chloe de Souza"	"Rajendran s/o Muthu"	0.5	["Hypertension"]	"David Lim"	"Rajendran s/o Muthu"	0.5	["Hypertension"]	Using Rajendran as base to compare
High_Risk_Patient	Clinical_Twin_With_Injury	Match_Score	Shared_Conditions																					
"Priya Devi"	"Rajendran s/o Muthu"	1.0	["Hypertension", "Rhabdomyolysis"]																					
"Rajendran s/o Muthu"	"Priya Devi"	1.0	["Hypertension", "Rhabdomyolysis"]																					
"Chloe de Souza"	"Rajendran s/o Muthu"	0.5	["Hypertension"]																					
"David Lim"	"Rajendran s/o Muthu"	0.5	["Hypertension"]																					
6	<p>Identify patients who share a clinical profile with known injury cases and are currently exposed to high-risk polypharmacy, but have not yet manifested RDM</p> <p><i>Patients at risk of RDM</i></p> <ul style="list-style-type: none"> Path: Patient (Candidate) — [GDS Similarity] → Patient (Case) AND Patient (Candidate) — [IS_PRESCRIBED] → Multiple Medications Attributes Checked: [similarity score], [start_date (active prescriptions)], [duration_days], [clinical_summary (absence of RDM keywords)] 	Patient + Risk summary % + flag Tan Wei Ling flagged as critical	<table border="1"> <thead> <tr> <th>Patient</th> <th>Clinical_Similarity</th> <th>Medication_Risk</th> <th>Overall_Risk</th> <th>Category</th> </tr> </thead> <tbody> <tr> <td>"Tan Wei Ling"</td> <td>0.5</td> <td>0.5625</td> <td>0.5375</td> <td>"CRITICAL"</td> </tr> <tr> <td>"Chloe de Souza"</td> <td>0.5</td> <td>0.125</td> <td>0.275</td> <td>"HIGH"</td> </tr> <tr> <td>"David Lim"</td> <td>0.5</td> <td>0.125</td> <td>0.275</td> <td>"HIGH"</td> </tr> </tbody> </table>	Patient	Clinical_Similarity	Medication_Risk	Overall_Risk	Category	"Tan Wei Ling"	0.5	0.5625	0.5375	"CRITICAL"	"Chloe de Souza"	0.5	0.125	0.275	"HIGH"	"David Lim"	0.5	0.125	0.275	"HIGH"	Combines and weights Case 4&5
Patient	Clinical_Similarity	Medication_Risk	Overall_Risk	Category																				
"Tan Wei Ling"	0.5	0.5625	0.5375	"CRITICAL"																				
"Chloe de Souza"	0.5	0.125	0.275	"HIGH"																				
"David Lim"	0.5	0.125	0.275	"HIGH"																				