

Healthcare QA SQL Query Pack

techfitflow.com | Run in non-production first | Table names follow standard Clarity; staging and reference tables are placeholders

1. Nine validation families

#	Family	Question	Typical defect
1	Row count reconciliation	Did every source record arrive?	Dropped messages
2	Required-field nulls	Is a mandatory value missing?	Mapping gaps
3	Duplicates	Does one event appear twice?	Replayed messages
4	Orphans	Does every child have a parent?	Encounter without patient
5	Code/domain validity	Are values in allowed sets?	Invalid ICD-10, bad LOINC
6	Date and sequence	Does the timeline make sense?	Discharge before admit
7	Set comparison	What changed between builds?	Regression
8	Range and format	Are values plausible?	Unit errors
9	State transition	Did status move legally?	Result before order

2. Core queries

Family 1: source vs target by day

```
SELECT s.d, s.src, ISNULL(t.tgt,0) tgt FROM
  (SELECT CAST(MSG_TIME AS date) d, COUNT(*) src
   FROM INTF_ADT_STAGE WHERE MSG_TYPE='A03'
   GROUP BY CAST(MSG_TIME AS date)) s
 LEFT JOIN (SELECT CAST(HOSP_DISCH_TIME AS date) d, COUNT(*) tgt
  FROM PAT_ENC_HSP GROUP BY CAST(HOSP_DISCH_TIME AS date)) t
  ON t.d = s.d
WHERE s.src <> ISNULL(t.tgt,0);
```

Families 3 and 4: duplicates and orphans

```
SELECT MSG_CONTROL_ID, COUNT(*) FROM INTF_ADT_STAGE GROUP BY MSG_CONTROL_ID HAVING COUNT(*) > 1;
SELECT e.PAT_ENC_CSN_ID FROM PAT_ENC e LEFT JOIN CLARITY_DEP d ON d.DEPARTMENT_ID = e.DEPARTMENT_ID
WHERE e.DEPARTMENT_ID IS NOT NULL AND d.DEPARTMENT_ID IS NULL;
```

Family 6: impossible timelines

```
SELECT PAT_ENC_CSN_ID FROM PAT_ENC_HSP
WHERE HOSP_DISCH_TIME < HOSP_ADMSN_TIME OR HOSP_ADMSN_TIME > GETDATE();
```

Family 7: before/after (run both directions)

```
SELECT keycols FROM qa_snap.PAT_ENC_PRE EXCEPT SELECT keycols FROM PAT_ENC WHERE <same window>;
```

3. The NULL trap

```
-- WRONG: returns zero rows if target has any NULL ORDER_ID
WHERE s.ORDER_ID NOT IN (SELECT t.ORDER_ID FROM target t)
-- RIGHT
WHERE NOT EXISTS (SELECT 1 FROM target t WHERE t.ORDER_ID = s.ORDER_ID)
```

Always report rows checked next to a zero-row result. Zero from an empty table is not a pass.

4. Defect evidence checklist

- [] Environment, build number, and data extract time
- [] Exact query text (not a screenshot) with parameters
- [] Row counts and the denominator
- [] Split by candidate cause when a pattern exists
- [] 5-20 synthetic test-patient IDs
- [] Requirement ID or specification line
- [] One line: no production PHI in this ticket

5. Test case template

Field	Entry
Test ID / objective	
Pre-conditions (extract time recorded)	
Steps (query family and file)	
Expected result (counts)	
Actual result (attach output)	
Pass/fail rule and tolerance owner	

6. Reminders

Match ICD-10-CM reference version to date of service (updates each October 1). Confirm each system's time zone basis. Check the refresh calendar before relying on test patients. Query next-day data for same-day tests. Sources: ISTQB; CMS ICD-10 code files; Epic Clarity Data Dictionary (UserWeb).