

Operator Case Study Problem

Missing Encounters Analysis

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Problem Statement

Some encounters from the Client's EHR(Electronic Health Record) were not imported into our system.

Goal: Identify missing encounters, analyze trends, and provide actionable recommendations.

Business Impact: Missing encounters lead to revenue loss, compliance risks, and operational inefficiencies.

Background and Datasets

Encounters from EHR

	A	B	C	D
1	Patient Name	Provider Name	Date of Service	CPT Code
2	Ava Johnson	Liam Young	9/24/2024	97010
3	Ava Johnson	Liam Young	9/24/2024	97140
4	Sophia King	Sebastian Miller	7/3/2024	97140
5	Carter Brown	Charlotte Williams	9/9/2024	97014
6	Olivia Davis	Noah Lee	9/9/2024	97140
7	Ava Martin	Aiden King	8/27/2024	97110
8	Julian Thomas	Charlotte Williams	9/9/2024	97112
9	Sebastian Garcia	Noah Lee	8/19/2024	97010
10	Noah Taylor	Julian Lee	9/24/2024	97140
11	Liam Jackson	Sebastian Miller	8/12/2024	97010
12	Sebastian Garcia	Noah Lee	8/19/2024	97112
13	Mia Anderson	Aiden King	9/13/2024	97110
14	Noah King	Charlotte Williams	8/20/2024	97112
15	Isabella Gonzalez	Aiden King	9/10/2024	97010

Stored Encounters

	A	B	C	D
1	Patient Name	Provider Name	from_date_range	cpt_codes
2	Lucas Smith	Aiden King	7/3/2024	{97110,97112,97140,97010}
3	Lucas Smith	Charlotte Williams	7/11/2024	{97112,97010,97140,97110}
4	Lucas Smith	Charlotte Williams	7/17/2024	{97110,97140,97112,97010}
5	Lucas Smith	Julian Lee	7/27/2024	{97140,97110,97112,97010}
6	Lucas Smith	Aiden King	8/7/2024	{97010,97110,97112,97140}
7	Lucas Smith	Julian Lee	8/15/2024	{97112,97140,97110,97010}
8	Lucas Smith	Julian Lee	8/28/2024	{97140,97110,97112,97010}
9	David Young	Elijah Johnson	7/9/2024	{97010,97140,97014}
10	David Young	Elijah Johnson	7/11/2024	{97010,97014,97140}
11	David Young	Elijah Johnson	7/17/2024	{97014,97010,97140}
12	David Young	Elijah Johnson	7/25/2024	{97140,97010,97014}
13	Aiden Thomas	Noah Lee	7/1/2024	{97010,97110,97140,97112}
14	Aiden Thomas	Aiden King	7/3/2024	{97112,97010,97110,97140}
15	Aiden Thomas	Noah Lee	7/8/2024	{97010,97110,97112,97014,97140}

Approach to Analysis

Step-1

- Standardized and cleaned data.
(Date formatting)
- Generate Unique id.

Step-2

- Identified missing encounters using unique identifiers.

Step-3

- Analyzed patterns in missing data
(Provider, CPT Codes)

[] missing_encounters_cleaned



	Patient Name	provider_name	date_of_service	cpt_code	encounter_id
22	Olivia Miller	Sebastian Miller	2024-07-23	97140	Olivia Miller Sebastian Miller 2024-07-23
30	Noah Gonzalez	Elijah Johnson	2024-08-01	97140	Noah Gonzalez Elijah Johnson 2024-08-01
72	Julian King	Noah Lee	2024-09-11	97112	Julian King Noah Lee 2024-09-11
76	Layla Miller	Aiden King	2024-08-14	97140	Layla Miller Aiden King 2024-08-14
83	Sebastian Jackson	Sebastian Miller	2024-09-26	T0S115	Sebastian Jackson Sebastian Miller 2024-09-26

Steps Taken

Key Observations

Provider-Specific Trends

- Aiden King (**95** missing encounters)
- Noah Lee (**52** missing encounters)
- Sebastian Miller (**37** missing encounters)

CPT Code Trends

- 97140 (**67** instances)
manual therapy techniques
- 97110 (**59** instances)
therapeutic exercise
- 7010 (**31** instances)
Diagnostic Radiology

Invalid CPT Codes

- NORCM (**47** instances)
- TOS115 (**5** instances)
- SP90/sp90/SP\$90 (**7** instances)
- SP (**3** instance)

283 Total Missing Encounters

FeedBack & Resolution

Feedback

- Number of missing encounters.
- Probable issue in duplication removal process.

Patient Name	Provider Name	Date of Service	CPT Code
Ava Johnson	Liam Young	9/24/2024	97010
Ava Johnson	Liam Young	9/24/2024	97140
Olivia Johnson	Aiden King	8/9/2024	97110
Olivia Johnson	Aiden King	8/9/2024	97140
Lucas Williams	Aiden King	7/22/2024	97110
Lucas Williams	Aiden King	7/22/2024	97112
Lucas Williams	Aiden King	7/22/2024	97140

Provider-Specific Trends

- Aiden King (**480** missing encounters)
- Noah Lee (**218** missing encounters)
- Sebastian Miller (**205** missing encounters)

CPT Code Trends

- 97140 (**258** instances)
manual therapy techniques
- 97110 (**225** instances)
therapeutic exercise
- 97112 (**200** instances)
Diagnostic Radiology

Invalid CPT Codes

- NORCM (**206** instances)
- TOS115 (**27** instances)
- SP90/sp90/SP\$90 (**36** instances)
- SP (**27** instance)

1356 Total Missing Encounters

Causes and Solutions for Missing Data

Data Formatting Issues – Invalid CPT codes or inconsistent naming conventions.

Cause #1

Provider-Specific Errors – Certain providers may have workflow or data entry issues

Cause #2

System Integration Gaps – Issues with how the system imports encounters.

Cause #3

Documentation Issues - Inconsistent formatting of the same codes indicates a lack of standardization in data entry

Cause #4

Probable Issues

Standardization of Data Entry – consistent naming conventions for CPT codes.

Solution #1

Provider Training & Awareness – providers with high missing encounters

Solution #2

System Integration Gaps – Issues with how the system imports encounters.

Solution #3

Operational Process Improvements - Conduct audits and optimize resources

Solution #4

Solutions & Recommendations

Business Impact of Solutions

Business Impact

- **Reduced Revenue Loss** – Ensuring all billable encounters are captured.
- **Improved Compliance** – Avoid errors that lead to regulatory risks.
- **Operational Efficiency** – Automated validation and provider training minimize manual rework.
- **Better Decision-Making** – Clear reporting on missing encounters for proactive actions.

Thank you