SUCCESS STORIES - SUMMARY

Project Name	Client	Brief Description	Services	Impact
Recovering Capitated* Payments (CAP)	Healthcare Provider	▪ Created a list of patients whose payment was missed (fallouts) and **Quantified the potential revenue** loss due to same ▪ **Created a KPI dashboard** to track the impact of both preventive and corrective actions taken	▪ Automated reconciliation of charges and payments ▪ Generated Monthly fallout lists ▪ Created CAP Recapture KPI Dashboard	▪ Recognized potential **revenue leakage opportunity of ~$10M** based an average of **2k (~5%) monthly fallouts**

*Capitation Payment (CAP Payment) is a healthcare provider payment method in which the provider receives a predetermined fee for specified services to each insured patient that is assigned to the facility for a specified period whether or not the insured seeks healthcare.

RECOVERING CAPITATED PAYMENTS FOR HEALTHCARE PROVIDER

ABOUT THE CLIENT

Client is a U.S.-based healthcare service provider focused on pediatric medical services

SITUATION

- Client was missing payments from payors for a subset of patients (fallouts) that they were providing services to. In addition to that, they lacked visibility into the possible revenue loss as well as the root causes behind the missing payments
- Merilytics partnered with the client to **create an automated model** to generate monthly fallouts and quantify the possible revenue loss as well as **create a KPI dashboard** to track the fallouts

VALUE ADDITION

- Created an **automated fallout generation model** by mapping charges and payments in a sequential Power BI model by following a **reiterative reduction approach** using fuzzy match logic to produce final fallouts list
- Generated an **automated quantification model** which calculates the total revenue loss for each month
- Designed a **decision tree to prioritize** various major causes and **identify the top root cause** for each fallout
- Built an automated self-serve KPI Dashboard on Power BI to track the movement of the fallouts across months and monitor **the impact of preventive and corrective actions** taken by client by tracking retro payment activities

IMPACT

- Identified the patients for whom payments were not received and generated a monthly fallout list with more than **2k fallouts per month** using the automated model
- Recognized potential **revenue leakage opportunity of ~$10M** based an average of **2k (~5%) monthly fallouts**
- **Root cause analysis** helped the client to focus on major **sources of leakage** and reduce fallouts by changing the system processes

APPROACH

Major Challenges

- **Mapping over a million charges with over ~2.5M payments** using patient related information
- Inconsistency in patient names and IDs for the same patients across various payor sources
- Getting **insurance eligibility details** from various payor sources to categorize the **root cause of leakage**
- Understanding the detailed **process workflow knowledge** to **identify the leakage source**

Value Add

- **Automated Power BI models** were created to consolidate and handle large dataset with keeping in mind the ease of use
- Followed **an iterative approach** to map patients in charges and payments files by first **eliminating the matches** found directly by mapping policy IDs and then **using fuzzy mapping approach** on the remaining charges to generate final list of fallouts
- Consolidated insurance eligibility details from third party vendor to **classify the root cause** for each fallout
- Derived different classification categories by studying the complete process flow of patient, and then building a **logical decision tree** to **classify the leakage source** based on priority assigned to different categories

METHODOLOGY – REITERATIVE ELIMINATION APPROACH

Data Inputs

- Monthly Payment
- Monthly Charges

Step 1 : Clean Data*

- Cases where family members have same policy number
- Cases where there is one policy number and payment for one patient
- Cases where multiple payments are received against one patient

**Removing duplicates by calculating net payment received for one patient*

Step 2 : Match Records

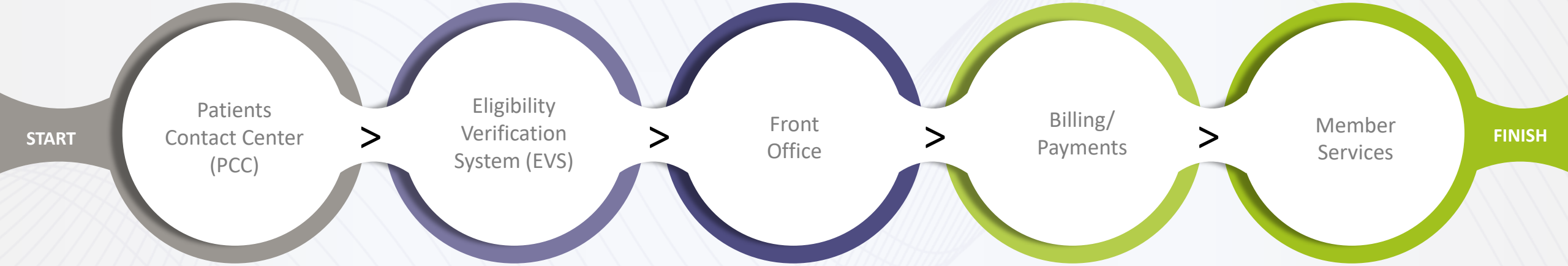
- Direct Mapping
- Fuzzy Mapping

Output

- Final List of Fallouts

PROCESS WORKFLOW AND POSSIBLE SOURCES OF LEAKAGE

Journey of a patient appointment and claim. Insurance verification is done at various sources depending on the type of visit which could lead to possible leakage/failure



Patients first point of contact to schedule an appointment with provider.

Once appointment is scheduled, insurance eligibility is verified by EVS team

Final verification check is done just before the service, if any flag is there from PCC or EVS

After the service, Revenue cycle starts for FFS claims and billing is not required for CAP claims

RCA is done for non payments and patients/payors are called on requirement basis as corrective action

EXHIBIT #1 – DECISION TREE TO CLASSIFY A FALLOUT INTO VARIOUS ROOT CAUSE CATEGORIES

CRITERIA	CATEGORY
Is Payor Info available in eligibility	Payor info not available/Failed at Payor
Is Payor Info Matching b/w eligibility and claim	Payor Not Matching (Wrong Insurance in EHR system on Date of Service)
Is Payor under Cap Plan	Payor is non-Cap
Is Insurance Active On Date of Service (DOS)	No Insurance on DOS
Is PCP/Physician Assigned to Firm	Registration or Not Assigned
Is Physician MD	PCP not a Physician
Others (Manual) (Payor Set Up/ Provider Setup)	

Logical decision tree based on the priorities and assignment of different classification categories

EXHIBIT #2 – CAP RECAPTURE KPI DASHBOARD

Status Month
Month - 1

Source
All

Payor
All

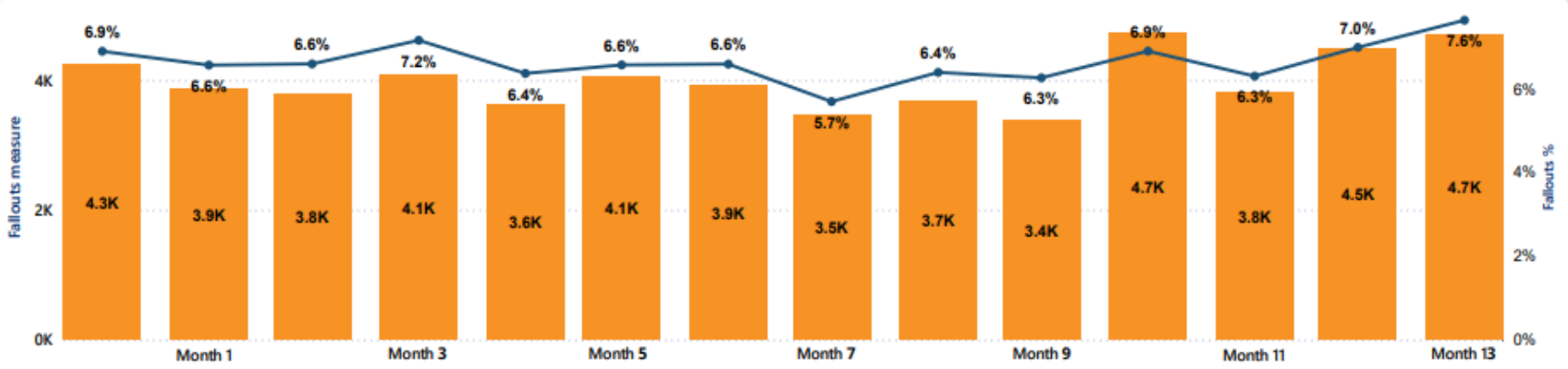
New/Existing
All

Sick/Well
All

New Born
All

CPT Codes
All

1. **Status Month slicer will show fallouts as of that month**
2. **The fallouts are unique to payor and month of service.**



Summary of leakage fallouts across months by payors and departments.

Fallouts Count Movement across Subsequent Months

Payor	Mon - 1	Mon - 2	Mon - 3	Mon - 4	Mon - 5	Mon - 6
Payor 1	245	185	188	168	159	168
Payor 2	435	385	393	395	432	449
Payor 3	440	475	471	489	395	338
Payor 4	102	75	94	101	93	94
Payor 5	198	188	170	170	153	176
Payor 6	1,313	1,254	1,239	1,336	1,147	1,437
Payor 7	1,184	1,032	972	1,197	999	1,117
Total	**4,260**	**3,869**	**3,781**	**4,083**	**3,617**	**4,070**

Fallouts % Movement across Subsequent Months

Payor	Mon - 1	Mon - 2	Mon - 3	Mon - 4	Mon - 5
Payor 1	9.5%	7.7%	8.0%	7.2%	6.9%
Payor 2	12.7%	11.7%	12.2%	12.7%	14.1%
Payor 3	3.1%	3.4%	3.3%	3.7%	3.0%
Payor 4	4.8%	3.8%	4.9%	5.2%	4.9%
Payor 5	5.9%	5.9%	5.6%	5.6%	5.1%
Payor 6	12.9%	12.9%	13.5%	14.0%	12.0%
Payor 7	5.6%	5.2%	5.1%	6.2%	5.1%
Total	**6.9%**	**6.6%**	**6.6%**	**7.2%**	**6.4%**

EXHIBIT #3 – DASHBOARD WITH WATERFALL CHART

MOS
Month - 1

Source
All

Payor
All

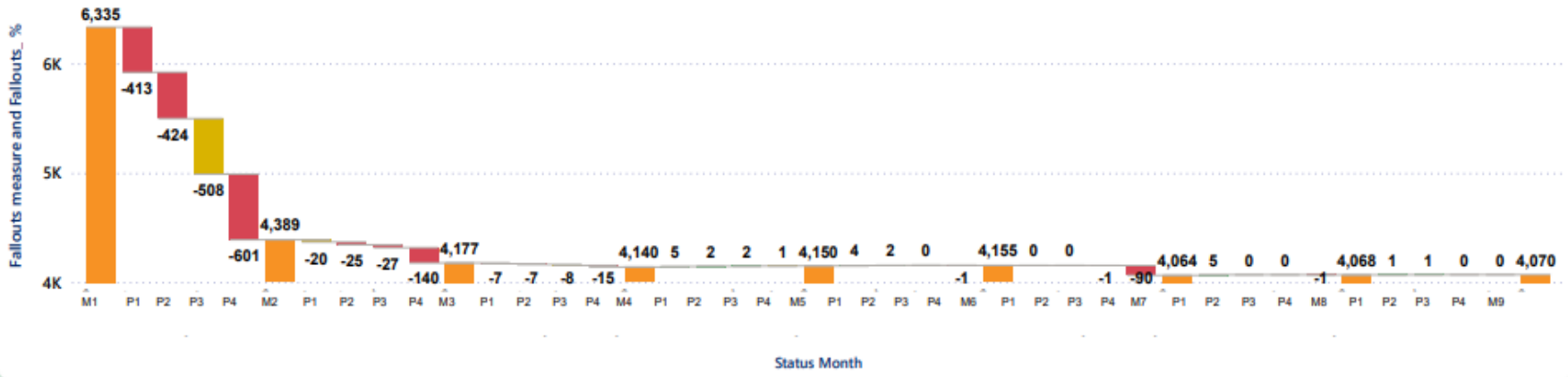
New/Existing
All

Sick/Well
All

New Born
All

CPT Codes
All

1. MOS slicer interact with only chart visual. Select a month to see the movement of fallouts across subsequent month for selected month
2. This tab shows the fallout movement across months considering retro activities. Fallouts reduction in subsequent months should be an impact of corrective action resulting in retro payment.
3. The fallouts are unique to payor and month of service.



A **waterfall chart** showing the reduction in fallouts because of retro payments breakdown by top 4 payors contributing to the reduction

Fallouts Count Movement across Subsequent Months

Month	Mon-1	Mon-2	Mon-3	Mon-4	Mon-5	Mon-6
Mon - 1	6,408	5,015	4,815	4,793	4,792	4,791
Mon - 2		5,840	4,539	4,371	4,327	4,324
Mon - 3			6,016	4,487	4,262	3,944
Mon - 4				5,951	4,742	4,322
Mon - 5					5,430	3,991
Mon - 6						6,335
Mon - 7						
Total	6,408	10,855	15,370	19,602	23,553	27,707

Fallouts % Movement across Subsequent Months

Month	Mon- 1	Mon-2	Mon-3	Mon-4	Mon-5	Mon-6
Mon - 1	10.4%	8.1%	7.8%	7.8%	7.8%	7.8%
Mon - 2		9.9%	7.7%	7.4%	7.3%	7.3%
Mon - 3			10.5%	7.8%	7.4%	6.9%
Mon - 4				10.4%	8.3%	7.6%
Mon - 5					9.6%	7.0%
Mon - 6						10.2%
Mon - 7						
Mon - 8						

Impact of corrective actions in form of retro payments in subsequent months reducing the fallouts

EXHIBITS #4 – AVERAGE MONTH MISSED AND QUANTIFICATION

Average Month Missed Calculation by Unique Fallout Movement										
	Mon1	**Mon2**	**Mon3**	**Mon4**	**Mon5**	**Mon6**	**Mon7**	**Mon8**	**Mon9**	**Mon10**
Mon1	5,015	4,461	4,282	3,794	3,551	3,098	2,876	2,693	2,594	2,530
Mon2	3,400	3,052	2,931	2,582	2,290	2,121	1,995	1,925	1,858	
Mon3	3,037	2,719	2,580	2,100	1,920	1,817	1,802	1,689		
Mon4	2,980	2,425	2,226	1,884	1,734	1,647	1,600			
Mon5	2,262	2,019	1,867	1,581	1,447	1,396				
Mon6	1,558	1,329	1,239	1,150	1,119					
Mon7	2,686	2,331	1,865	1,760						
Mon8	2,412	2,047	1,778							
Mon9	2,325	2,013								

Calculating **average month missed** where a unique patient will be a fallout for that timeframe

	100%	87%	80%	71%	66%	60%	57%	55%	53%	50%
Months Missed		1	2	3	4	5	6	7	8	9
% Total Members		13%	7%	9%	5%	6%	3%	2%	2%	2%

Avg. Month Missed	9.13

Table below highlights the $ opportunity excluding the Non-CAP fallouts category												
Payor	**CAP**	**Avg Months Lost**	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**	**9-Months Total**
Payor-1	$41.00	9.1	$612,518	$401,354	$338,787	$350,162	$223,962	$177,392	$364,738	$265,199	$230,005	$2,964,116
Payor-2	$29.00	9.1	$337,694	$240,887	$207,947	$207,947	$158,161	$130,250	$145,085	$146,091	$143,828	$1,717,890
Payor-3	$55.00	9.1	$279,930	$224,135	$226,996	$214,121	$171,678	$58,657	$128,758	$186,938	$177,401	$1,668,615
Payor-4	$38.00	9.1	$143,325	$89,619	$84,677	$73,804	$71,827	$62,602	$90,278	$82,041	$81,712	$779,886
Payor-5	$39.00	9.1	$70,674	$49,032	$40,578	$41,931	$34,492	$13,864	$45,313	$41,931	$40,240	$378,056
Payor-6	$25.00	9.1	$79,986	$47,255	$45,521	$39,018	$38,584	$26,229	$50,073	$30,564	$45,521	$402,750
Payor-7	$66.00	9.1	$141,348	$82,405	$71,532	$69,816	$51,503	$25,179	$57,798	$64,093	$49,787	$613,463
Payor-8	$20.00	9.1	$17,688	$11,098	$11,965	$11,965	$9,538	$3,815	$12,659	$11,619	$12,139	$102,487
Total			**$1,683,164**	**$1,145,786**	**$1,028,004**	**$1,008,764**	**$759,744**	**$497,988**	**$894,702**	**$828,476**	**$780,632**	**$8,627,260**

Quantifying **total missed opportunity**

LEARNINGS

- The project provided an opportunity to the entire team to learn about the capitation payment method
- The project created in-depth knowledge of different fuzzy mapping logics and name mapping especially in the Power Query which uses Jaccard similarity index
- The Jaccard Index, also known as the Jaccard similarity coefficient, is a statistic used in understanding the similarities between sample sets. The measurement emphasizes similarity between finite sample sets and is formally defined as the size of the intersection divided by the size of the union of the sample sets.