Tableau for Healthcare Providers Dashboard Starter Revenue Cycle Management

V1 August 2019 – Compatible with Tableau Version 10.5 or greater

Summary

In the complex world of healthcare, providers and payers are in a constant push-pull that requires them to deliver superior services, while managing the revenue cycle proactively and efficiently. Dependencies are the norm, with numerous processes that rely on accurate information from multiple systems and sources. Issues must be identified quickly to avoid costly delays: claims denials, charge capture and coding, payment posting, appeals and collections are among the processes that are impacted by delayed or inaccurate information.

Market forces—including evolving regulations, increased consumerism, value-based care, and growing patient financial burden—are forcing healthcare organizations to transform their approach to revenue cycle management (RCM). And increasingly, the healthcare sector is turning to technology to address the challenges of RCM.

When it comes to leveraging technology and analytics today, healthcare revenue cycle workers are often left to uncover insights and opportunities by relying on stale, ad-hoc reporting from their costly RCM vendors-each with their own perspective and definitions around core revenue cycle functions. In order to put the "analytical power" back in the hands of these workers, we developed a Starter Kit: The Healthcare Provider Revenue Cycle Management Dashboard.

Tableau customers have asked for guidance in developing such a dashboard that follows analytics best-practices, is simple to use, and straightforward to deploy. They wanted a flexible and easily customizable Starter Kit that their staff can evolve with the needs of the organization.

This pre-designed dashboard was built by Healthcare and Tableau experts to provide a template for rapid deployment. This Starter Kit includes everything you need and can be deployed with your data in as little as a 1-2 weeks. This document details how to use the dashboard and instructions for deployment and maintenance.

Overview

The Healthcare Provider RCM Dashboard is designed to provide healthcare providers of all types and sizes with increased visibility and insight into three key areas of their revenue cycle: 1) Transactional Trending; 2) Accounts Receivables; 3) Denials Management.
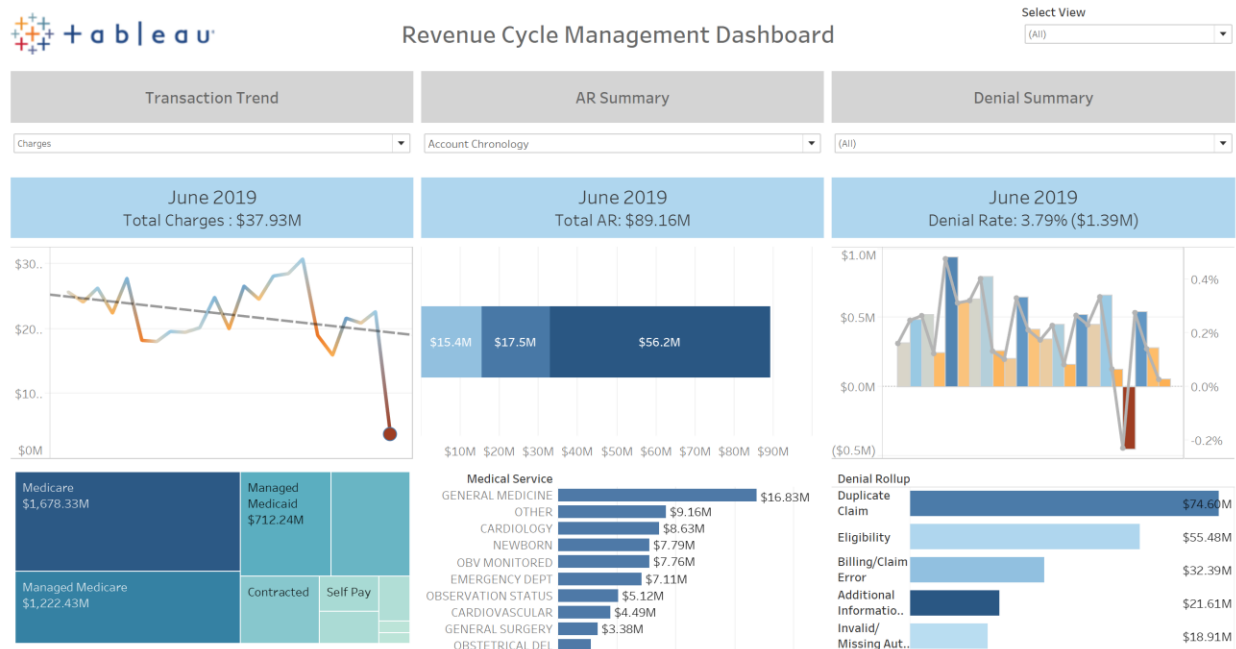
Access your KPIs wherever you are, on any device

You can view your RCM Dashboard in the Tableau Mobile App on iPhone or Android tablets and mobile phones.

Revenue Cycle Management Dashboard

Select View

(All) ▼

Transaction Trend

Insurance Payment ▼

June 2019
Total Insurance Payments: $9.24M

| Self Pay $402.43M | Commercial $294.92M |
| Medicare $365.27M | Managed Medicaid $153.70M |
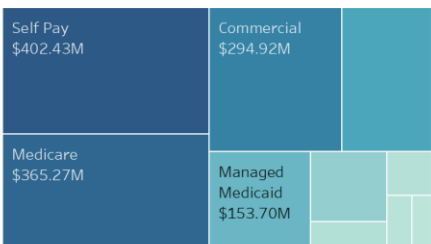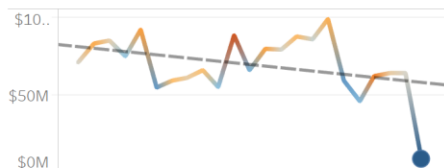
AR Summary

Account Chronology ▼

June 2019
Total AR: $89.16M

$15.4M | $17.5M | $56.2M

$0M $20M $40M $60M $80M $100M

Medical Service

GENERAL MEDICINE	$16.83M
OTHER	$9.16M
CARDIOLOGY	
NEWBORN	$7.79M
OBV MONITORED	
EMERGENCY DEPT	$7.11M
OBSERVATION STATUS	
CARDIOVASCULAR	
GENERAL SURGERY	
OBSTETRICAL DEL	
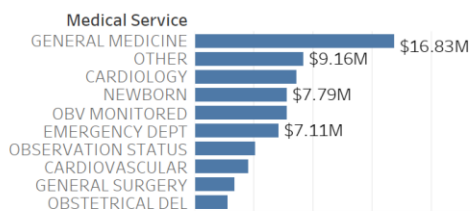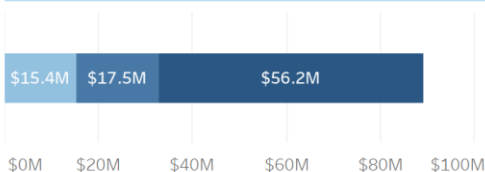
Denial Summary

(All) ▼

June 2019
Denial Rate: 3.79% ($1.39M)

How to Interpret Each KPI

Gain more visibility into your organization's revenue cycle at the health-system level or individual facility-level using the "Select View" drop-down filter contained in the upper right-hand corner.
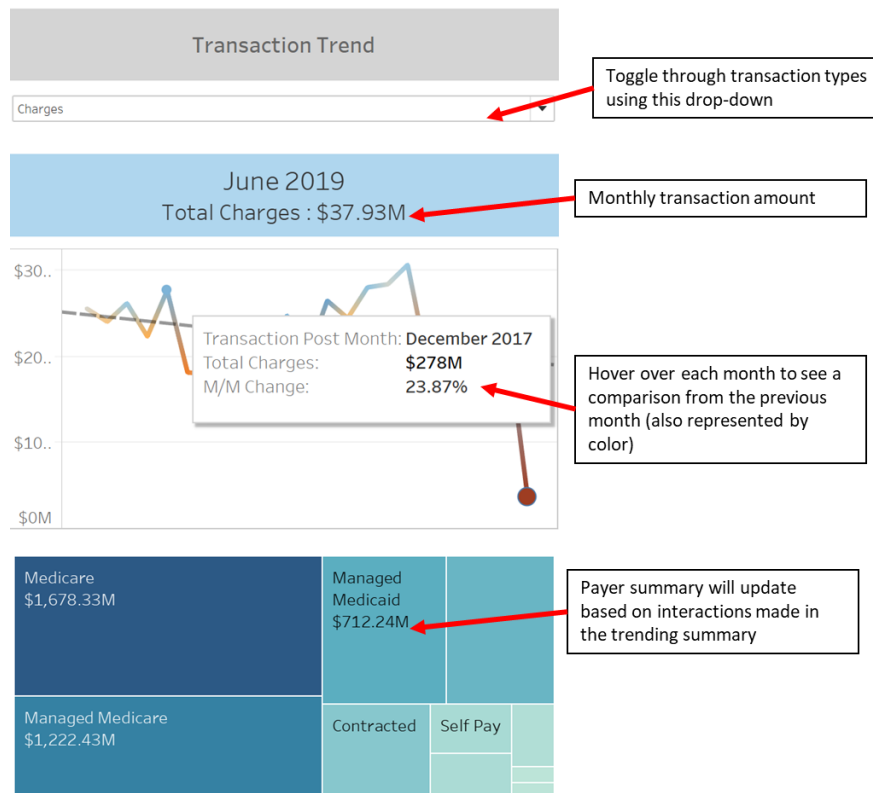
The "Transactional Trending" summary provides users with insight into the various financial transactions that are executed across their organization's revenue cycle. For this Starter Kit, the following transactions types are utilized: Adjustments, Allowances, Bad Debt, Charges, Charity Care, Insurance Payments, Patient Payments, and Write-Offs. A user can toggle through these transaction types using the drop-down provided and gain more insight into the following areas:

1. Current Month Performance
2. Monthly Trend
3. Month/Month Comparison
4. Payer Summary
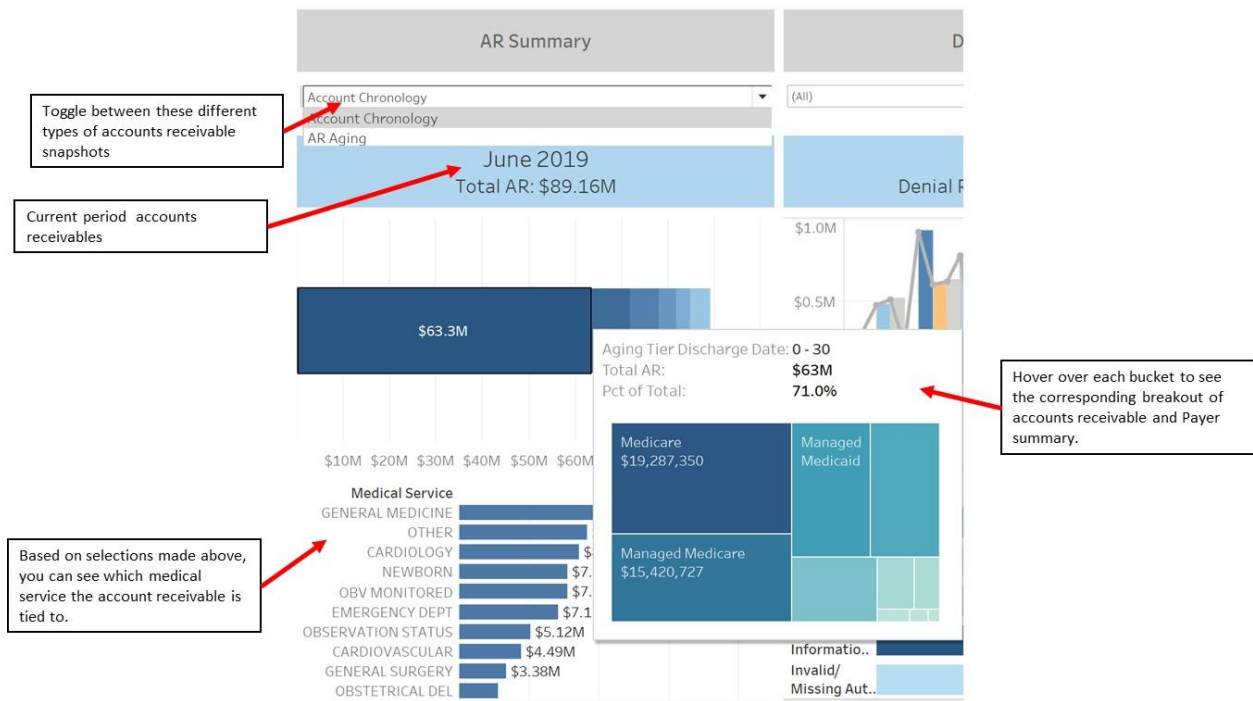
The "Accounts Receivable" summary provides users with a quick snapshot into their organization's accounts receivables (AR) using two perspectives:

1. Account Chronology – The billing stage for each account (eg: Discharged Not Final Billed in Suspense Period, Discharged Not Final Billed After Suspense Period, and Final Billed).
2. AR Aging – An aging categorization representing the number of days between now and the latest discharge date (or billed date, depending on how you model). The buckets modeled are segmented in 30 day increments.

For each perspective, a user can gain insight into the following areas:

1. Current period accounts receivables
2. Payer Summary
3. Percentage of total accounts receivable composition by bucket
4. Accounts receivable by Medical Service

Toggle through this filter to see the denials summary by root-cause department

Denied dollars and denial rate will update based on month selection in Trending summary.

Hover over each month to see the total denied dollars and a comparison from the previous month (also represented by color)

Hover over each Denial Rollup to see a Payer Summary and a distribution of the denied accounts within each bucket. This can be used to identify high-dollar, denied accounts.

The "Denials Management" summary provides users with insight into how well their organization is managing denials across several departments: Case Management, Coding, Patient Access, and Patient Financial Services (PFS).

For each perspective, a user can gain insight into the following areas:

1. Current period denied dollars
2. Current period denied charge rate (Total Denied Dollars/ Total Insurance Charges)
3. Trended denied dollars
4. Month/Month denied dollar comparison
5. Top 5 Denial Rollup Summary (Total Denied Dollars and # of Denied Claims)
6. Denied Account Distribution by Payer (Used to quickly identify high-dollar account denial outliers)

General Usability Tips

Use **Saved Views** to save your selections (filters, etc.) for repeat visits.
https://onlinehelp.tableau.com/current/pro/desktop/en-us/customview.htm

Subscribe to the Dashboard to view in Email
https://onlinehelp.tableau.com/current/pro/desktop/en-us/subscribe_user.htm

Use **Data-Driven Alerts** to be notified via Email when a given KPI crosses a threshold
https://onlinehelp.tableau.com/current/pro/desktop/en-us/data_alerts.htm

Download dashboard as Image, PDF or PPTX
https://onlinehelp.tableau.com/current/pro/desktop/en-us/export.htm

Comment on a dashboard to collaborate with other users
https://onlinehelp.tableau.com/current/pro/desktop/en-us/comment.htm

Deployment Instructions

Deploying the Revenue Cycle Management Dashboard Starter Kit requires working knowledge of Tableau Desktop, Tableau Prep Builder, Tableau Server and access to your RCM Datasets. For additional help deploying this Starter Kit and additional services, please visit https://www.tableau.com/services "

Familiarize yourself with the provided materials

- **Revenue Cycle Management Dashboard Starter Guide**
  This is your guide to successfully deploying the Revenue Cycle Management Dashboard.
- **RCM Starter.twbx**
  This is the actual Tableau Workbook (Dashboard) that you will deploy. This works out of the box.
- **Data Snapshots**
  This excel file will serve as your template to get you started quickly. It contains Sample data (in orange) and it is comprised of 4 main sheets:
  - **AR Snapshot** – This is a data staging example, broken out by facility if required, for tracking AR Aging. To utilize the provided Tableau Prep flow, data should be loaded from your financial system to this format/filesystem example or piped directly to HyPer extracts with these headers.
  - **Denials Data** – This is a data staging example, broken out by facility if required, for tracking denials. To utilize the provided Tableau Prep flow, data should be loaded from your claims system to this format/filesystem example or piped directly to HyPer extracts with these headers.
  - **Transaction Data** – This is a data staging example, broken out by facility if required, for tracking financial transactions. To utilize the provided Tableau Prep flow, data should be loaded from your financial system to this format/filesystem example or piped directly to HyPer extracts with these headers.
- **Healthcare Provider RCM Starter Flow.tfl**
  This is a Tableau Prep flow that builds the 3 datasources that your Dashboard will use.

Getting Started

Prepare your data pipeline

The Revenue Cycle Management Dashboard Starter Kit is designed to take data feeds from 3 areas, detailed above in the Data Snapshots section. Each of these folders contain sample excel files that should be regarded as a data staging area for customers that wish to leverage the included Tableau Prep Builder flow; otherwise these documents are examples only and customers should refer to them as well as the data dictionary below and output their data in this format either to HyPer (directly from the source via Prep) or an alternate live connection for live reporting.

Folder Structure for Flows

To support the 3 separate KPIs that this RCM Dashboard Starter covers, the data for each has been separated into different folders.
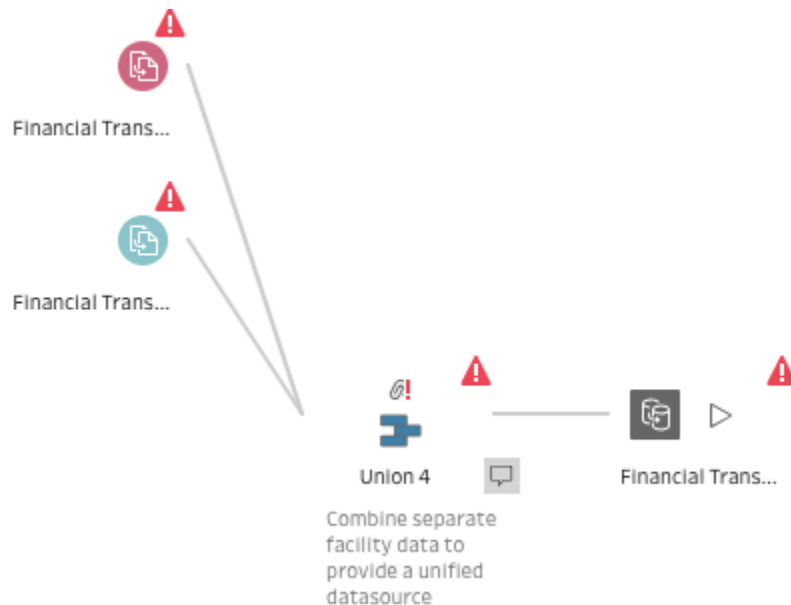
1. AR Snapshot
   a. This folder contains an excel file for each facility that you'd like to break your AR down by (optional).
   b. Refer to the sections on interpreting the KPIs for how this data is used, and the data dictionary for any derived metrics.
2. Denials Data
   a. This folder contains an excel file for each facility that you'd like to break your denials down by (optional).
   b. Refer to the sections on interpreting the KPIs for how this data is used, and the data dictionary for any derived metrics.
3. Transaction Data
   a. This folder contains a folder for each facility that you'd like to break your transactional data down by (optional).
      i. Within each facility's folder, financial data is captured in excel documents for each month-end.
   b. Refer to the sections on interpreting the KPIs for how this data is used, and the data dictionary for any derived metrics.
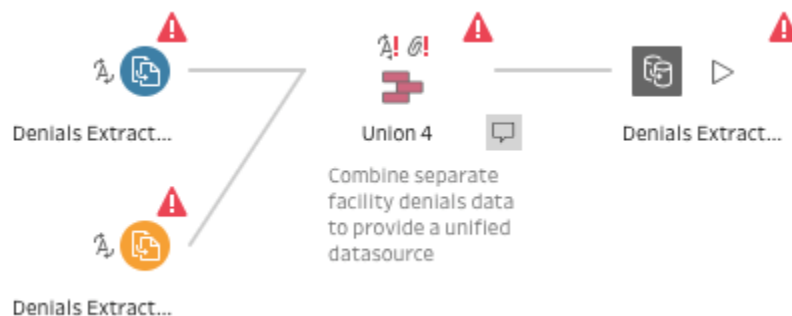
Tying it all together with Prep Builder

The Prep flow that generates the .hyper files consumed by the RCM Dashboard is the 'Healthcare Provider RCM Starter Flow' flow, which includes the following 3 components:
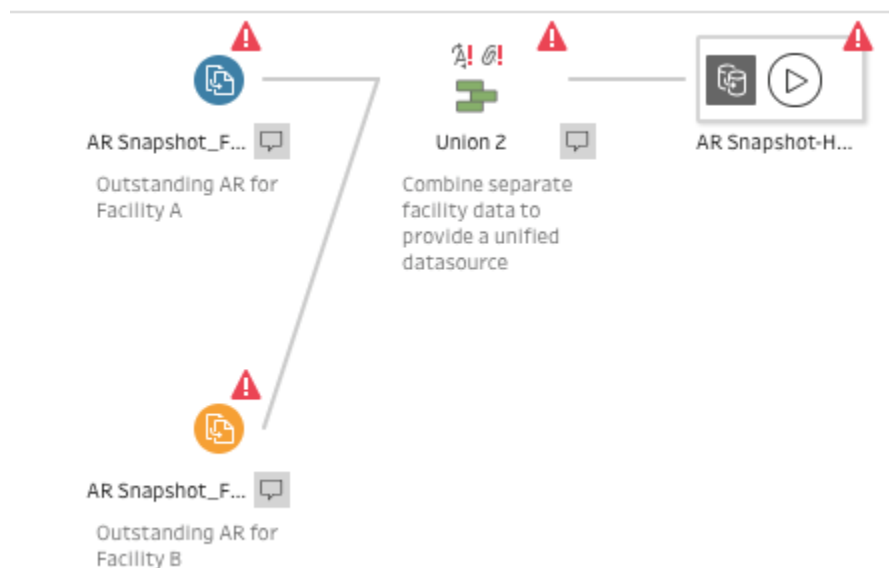
This portion of the script merges AR Snapshot data, per facility, into a single extract and appends the facility name for each. Adding additional facilities is done by adding more files ahead of the union.

Financial Trans...

Financial Trans...

Union 4

Combine separate
facility data to
provide a unified
datasource

Financial Trans...

This portion of the script merges Financial Transaction data, per facility, into a single extract and appends the facility name for each. For Financial Transactions, we are utilizing a wildcard union as each facility contains monthly rollups.

Denials Extract...

Union 4

Combine separate
facility denials data
to provide a unified
datasource

Denials Extract...

Denials Extract...

This portion of the script merges Denials data, per facility, into a single extract and appends the facility name for each. Adding additional facilities is done by adding more files ahead of the union.

You can run the final flow manually, via the Tableau Prep Builder command line interface, or using Tableau Prep Conductor.

System Data from an existing ETL process (optional)

1. As an alternative to the Tableau Prep Builder flow, customers that have an existing data pipeline can output their existing ETL processes following the data dictionary that is used for the RCM starter and connect live to their data staging/warehouse platform.

Reference: Data Dictionary – AR Snapshot (1 file, per facility)

File	Column / Field	Data type	Required	Purpose
Aging_FacilityA.xlsx	Account number	Text	Yes	Patient account number
Aging_FacilityA.xlsx	Snapshot Date	Datetime	Yes	Date used for filtering and tracking AR Aging progression
Aging_FacilityA.xlsx	Source	Text	Yes	Source system (EMR, Financial record, etc)
Aging_FacilityA.xlsx	Facility	Text	Yes	Facility name; optional if not breaking out by facility
Aging_FacilityA.xlsx	Patient Name	Text	Yes	Patient name from medical records/billing account of record
Aging_FacilityA.xlsx	Patient ID	Int	No	Patient ID
Aging_FacilityA.xlsx	Admit Date	Datetime	Yes	Admit date associated to the balance
Aging_FacilityA.xlsx	Discharge Date	Datetime	Yes	Discharge date associated to the balance
Aging_FacilityA.xlsx	Original Bill Date	Datetime	Yes	Date the bill was originally issued
Aging_FacilityA.xlsx	Admit Location	Text	Yes	Department/facility where patient was admitted
Aging_FacilityA.xlsx	Patient Class	Text	Yes	Classification of patient (Inpatient, Outpatient, Emergency, etc)
Aging_FacilityA.xlsx	Patient Type	Text	Yes	Classification of patient
Aging_FacilityA.xlsx	Medical Service	Text	Yes	Primary service department
Aging_FacilityA.xlsx	Financial Class Primary	Text	Yes	Financial classification of patient
Aging_FacilityA.xlsx	Insurance Rollup Primary	Text	Yes	Primary insurance for patient
Aging_FacilityA.xlsx	Insurance Primary	Text	Yes	Primary insurance code for patient
Aging_FacilityA.xlsx	Account Chronology	Text	Yes	Account Billing Status Bucket
Aging_FacilityA.xlsx	Age from Discharge	Int	Yes	Days outstanding from discharge
Aging_FacilityA.xlsx	Aging Tier Discharge Date	Text	Yes	Aging buckets of AR Balance

File	Column / Field	Data type	Required	Purpose
Aging_FacilityA.xlsx	Age from Original Bill Date	Float	Yes	Time difference from discharge & bill issuance
Aging_FacilityA.xlsx	Account Balance	Int	Yes	Outstanding balance on the account
Aging_FacilityA.xlsx	Total Charges	Int	Yes	Charges on the account

Reference: Data Dictionary – Denials Data (1 file, per facility)

File	Column / Field	Data type	Required	Purpose
DenialsExtract_FacilityA.xlsx	Account number	Text	Yes	Patient account number
DenialsExtract_FacilityA.xlsx	Source	Text	Yes	Source System (EMR, Financial Record, etc)
DenialsExtract_FacilityA.xlsx	Facility	Text	Yes	Facility name; optional if not breaking out by facility
DenialsExtract_FacilityA.xlsx	Claim Number	Text	Yes	Claim ID for the patient
DenialsExtract_FacilityA.xlsx	Patient Name	Text	Yes	Patient name from medical records/billing account of record
DenialsExtract_FacilityA.xlsx	Patient ID	Int	Yes	Patient ID
DenialsExtract_FacilityA.xlsx	Period	Datetime	Yes	Reporting period for the KPIs
DenialsExtract_FacilityA.xlsx	Admit Date	Datetime	Yes	Admit date associated to the balance
DenialsExtract_FacilityA.xlsx	Discharge Date	Datetime	Yes	Discharge date associated to the balance
DenialsExtract_FacilityA.xlsx	Original Bill Date	Datetime	Yes	Date the bill was originally issued
DenialsExtract_FacilityA.xlsx	Denial Date	Datetime	Yes	Date of denial from insurance
DenialsExtract_FacilityA.xlsx	Denial Code	Text	Yes	Code & reason for denial
DenialsExtract_FacilityA.xlsx	Denial Root Cause	Text	Yes	Details behind claim denial

File	Column / Field	Data type	Required	Purpose
DenialsExtract_FacilityA.xlsx	Denial Rollup	Text	Yes	Classification for denial
DenialsExtract_FacilityA.xlsx	Denial Root Cause Department	Text	Yes	Department where denial originated from
DenialsExtract_FacilityA.xlsx	Impactable Denial Flag	Boolean	Yes	Preventable vs non-preventable
DenialsExtract_FacilityA.xlsx	Denial Type	Text	Yes	Denial code classification (clinical, technical, or utilization management)
DenialsExtract_FacilityA.xlsx	Claim Amount	Int	Yes	Total Claim Amount
DenialsExtract_FacilityA.xlsx	Denial Amount	Int	Yes	Total Denial Amount
DenialsExtract_FacilityA.xlsx	Admit Location	Text	Yes	Department/facility in which the patient was admitted
DenialsExtract_FacilityA.xlsx	Patient Class	Text	Yes	Patient classification
DenialsExtract_FacilityA.xlsx	Medical Service	Text	Yes	Primary service department
DenialsExtract_FacilityA.xlsx	Denying Financial Class	Text	Yes	Financial class associated with denying insurance
DenialsExtract_FacilityA.xlsx	Denying Insurance Rollup	Test	Yes	Primary Insurance rollup for denied account
DenialsExtract_FacilityA.xlsx	Denying Insurance Code	Text	Yes	Primary Insurance code for denied account

Reference: Data Dictionary – Financial Transactions (1 file, per facility, per month)

File	Column / Field	Data type	Required	Purpose
Financial Transactions_08-01-16.xlsx	Post Date	Datetime	Yes	Month end reporting period
Financial Transactions_08-01-16.xlsx	Transaction Rollup	Text	Yes	Transaction Type
Financial Transactions_08-01-16.xlsx	Financial Class	Text	Yes	Aggregated financial classes

File	Column / Field	Data type	Required	Purpose
Financial Transactions_08-01-16.xlsx	Sum Transaction Amount	Int	Yes	Total aggregate transaction amount

Security

This Starter kit can be secured via access controls or row level security principles.

16