



Automating Data Governance to Support Effective Analytics

Presenters: George Dealy & Amato Amarain

October 10, 2024

HFMA New Jersey and Metro Philly Institute

Presenters



George Dealy
Vice President, Healthcare Applications



Amato Amarain
Consultant



Learning Objectives

- ❑ Define the Purpose of Enterprise Decision Support Systems
- ❑ Describe How Financial Professionals Can Help Ensure Their Success
- ❑ Discuss the Role of Data Governance
- ❑ Recommend Best Practices in Applying Data Governance
- ❑ Reinforce Concepts with a Case Study

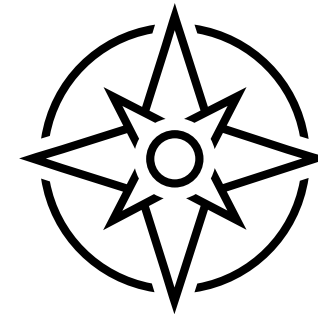
Agenda

-  Background on Decision Support
-  Formula for Success
-  The Role of Data Governance
-  Best Practices
-  Case Study

The Importance of Enterprise Decision Support



- ❑ Lifeblood of the Organization
- ❑ Meaningful Summarization
- ❑ Key Performance Indicators
- ❑ Precision & Accuracy
- ❑ Timely & Relevant
- ❑ Support Data Driven Decisions



Formula for Success



- ❑ Led by Stakeholders & Sponsors
- ❑ Involves Subject Matter Experts
- ❑ Institutes Data Governance
- ❑ Focuses on User Community Needs
- ❑ Facilitates & Monitors Adoption

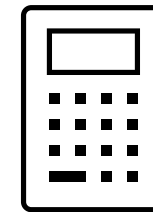


Financial Professionals: A Unique Opportunity



The Right Stuff!

- ☐ Quantitatively Oriented
- ☐ Finance: Precisely Defined Domain
- ☐ Disciplined Processes
- ☐ Broad Visibility across Organization
- ☐ Data Driven



The Role of Data Governance



- ❑ Identify Critical Measurements
- ❑ Build Consensus
- ❑ Determine Reliable Sources of Data
- ❑ Document Definitions & Decisions
- ❑ Respond to Change



Data Governance Best Practices



1. Engage **Key** Stakeholders
2. Start with KPIs, **First**
3. Identify the **Right** Data Sources
4. Create **Processes** for "Metadata"
5. **Validate**, Validate, Validate!



Best Practice #1: Engage Key Stakeholders



- ☐ Operational Responsibility
- ☐ Data Driven
- ☐ Drive Results via Metrics
- ☐ Lacking Good Options
- ☐ Invested in Outcome



Best Practice #2: Start with KPIs, First



- ❑ Align with Strategic Objectives
- ❑ Choose a Reasonable Number
- ❑ Assign Ownership
- ❑ Define Data & Logic - Precisely



Best Practice #3: Identify the Right Data Sources



- ☐ Is it **Accessible**?
- ☐ Is it **Reliable**?
- ☐ Is it **Timely**?
- ☐ How often does it **Change**?
- ☐ Is it the **Right** Data?



Best Practice #4: Create Processes for Managing Metadata



- ❑ Dictionary of KPIs & Descriptions
- ❑ Accessible to Info. Consumers
- ❑ Co-locate with Quantitative Data
- ❑ Manage with a Task Workflow
- ❑ Keep it Up-to-Date



Measure Master for Metadata

Hospital Ops Measure Master v3.1							
File Home Insert Draw Page Layout Formulas Data Review View Automate Help							
A1 Measure							
	A	B	C	D	E	F	G
1	Measure	Description	Definition	Calculation	Filter	Format	Favorable
2	Acute Admissions	The number of acute inpatient accounts including discharged and in-house patients, by admit date.	count of inpatient accounts excluding non-acute and normal newborn accounts by admit date	count()	value("Acute Admission")	#,##0	up
3	Acute Admit % ED	The percentage of acute inpatient admissions admitted from the ED, by admit date.	ED Admissions divided by Acute Admissions by admit date in percentage form	measure("ED Admissions") / measure("Acute Admissions")	value("Acute Admission")	#,##0.0%	up
4	Acute All Payer Case Mix	The average (mean) of CMS MS-DRG weights for discharged acute inpatient accounts with a valid MS-DRG that has a non-zero CMS MS-DRG weight, by discharge	average (mean) of CMS MS-DRG weights limited to discharged acute inpatient accounts with a CMS MS-DRG weight greater than zero by discharge	average(value("MS-DRG Case Mix"))	value("Acute Discharge") and value("Valid Case Mix account")	#,##0.00	up
5	Acute ALOS	The average length of stay (ALOS) in days for discharged acute inpatient accounts, by discharge date.	Acute Discharge Days divided by Acute Discharges by discharge date	measure("Acute Discharge Days") / measure("Acute Discharges")	value("Acute Discharge")	#,##0.00	down
7	Acute ALOS Variance	The difference between average length of stay and target average length of stay for discharged acute inpatient accounts, by discharge date.	Acute ALOS minus Acute ALOS Target by discharge date	measure("Acute ALOS") - measure("Acute ALOS Target")		#,##0.00	down
8	Acute Discharge Days	The total of length of stay days for discharged acute inpatient accounts, by discharge date.	sum of days from admission date to discharge date for discharged acute inpatient accounts (not counting day of discharge and counting same day discharges as one day) by discharge date	sum(value("Discharge Days"))	value("Acute Discharge")	#,##0	down
9	Acute Discharges	The number of discharged acute inpatient accounts, by discharge date.	count of inpatient accounts where discharge date is not null excluding non-acute and normal newborn accounts by discharge date	count()	value("Acute Discharge")	#,##0	up
10	Acute Hospital Mortality	The number of acute inpatient accounts discharged with a discharge status of expired, by discharge date. A discharge status of expired is used as an indication of hospital mortality.	count of discharged inpatient accounts where discharge date is not null limited to discharge status of Expired and excluding non-acute and normal newborn accounts by discharge date	count()	value("Acute Discharge") and value("Expired Account")	#,##0	down
11	Acute Hospital Mortality Rate	The percentage of acute inpatient accounts discharged with a discharge status of expired, by discharge date.	Acute Hospital Mortality divided by Acute Discharges by discharge date in percentage form	measure("Acute Hospital Mortality") / measure("Acute Discharges")	value("Acute Discharge")	#,##0.0%	down
12	Acute Patient Days	The total of hospitalization days for acute inpatient accounts including discharged and in-house accounts by the census date of individual hospital days. Day of discharge is not included except when admit date and discharge date are the same.	sum of days from admission date to discharge date, excluding the day of discharge except where admit date equals discharge date, for discharged and in-house acute inpatient accounts (where the current date is substituted for discharge date for in-	sum(value("Patient Days"))	value("Acute Admission")	#,##0	down
13	AMI Population	The number of patients, counting unique medical record numbers (MRNs), with at least one account with an acute	count (dimcount) of medical record numbers (MRNs) with one or more accounts with an AMI	dimcount(value("MRN"))	value("CMS AMI Population Account")	#,##0	down

Measure Master for Metadata

Hospital Ops Measure Master v3.1							
File Home Insert Draw Page Layout Formulas Data Review View Automate Help							
A1 Measure							
	A	B	C	D	E	F	G
1	Measure	Description	Definition	Calculation	Filter	Format	Favorable
2	Acute Admissions	The number of acute inpatient accounts including discharged and in-house patients, by admit date.	count of inpatient accounts excluding non-acute and normal newborn accounts by admit date	count()	value("Acute Admission")	#,##0	up
3	Acute Admit % ED	The percentage of acute inpatient admissions admitted from the ED, by admit date.	ED Admissions divided by Acute Admissions by admit date in percentage form	measure("ED Admissions") / measure("Acute Admissions")	value("Acute Admission")	#,##0.0%	up
4	Acute All Payer Case Mix	The average (mean) of CMS MS-DRG weights for discharged acute inpatient accounts with a valid MS-DRG that has a non-zero CMS MS-DRG weight, by discharge date.	average (mean) of CMS MS-DRG weights limited to discharged acute inpatient accounts with a CMS MS-DRG weight greater than zero by discharge date	average(value("MS-DRG Case Mix"))	value("Acute Discharge") and value("Valid Case Mix account")	#,##0.00	up
5	Acute ALOS	The average length of stay (ALOS) in days for discharged acute inpatient accounts, by discharge date.	Acute Discharge Days divided by Acute Discharges by discharge date	measure("Acute Discharge Days") / measure("Acute Discharges")	value("Acute Discharge")	#,##0.00	down
6	Acute ALOS Variance	The difference between average length of stay and target average length of stay for discharged acute inpatient accounts, by discharge date.	Acute ALOS minus Acute ALOS Target by discharge date	measure("Acute ALOS") - measure("Acute ALOS Target")		#,##0.00	down
7	Acute Discharge Days	The total of length of stay days for discharged acute inpatient accounts, by discharge date.	sum of days from admission date to discharge date for discharged acute inpatient accounts (not counting day of discharge and counting same day discharges as one day) by discharge date	sum(value("Discharge Days"))	value("Acute Discharge")	#,##0	down
8	Acute Discharges	The number of discharged acute inpatient accounts, by discharge date.	count of inpatient accounts where discharge date is not null excluding non-acute and normal newborn accounts by discharge date	count()	value("Acute Discharge")	#,##0	up
9	Acute Hospital Mortality	The number of acute inpatient accounts discharged with a discharge status of expired, by discharge date. A discharge status of expired is used as an indication of hospital mortality.	count of discharged inpatient accounts where discharge date is not null limited to discharge status of Expired and excluding non-acute and normal newborn accounts by discharge date	count()	value("Acute Discharge") and value("Expired Account")	#,##0	down
10	Acute Hospital Mortality Rate	The percentage of acute inpatient accounts discharged with a discharge status of expired, by discharge date.	Acute Hospital Mortality divided by Acute Discharges by discharge date in percentage form	measure("Acute Hospital Mortality") / measure("Acute Discharges")	value("Acute Discharge")	#,##0.0%	down
11	Acute Patient Days	The total of hospitalization days for acute inpatient accounts including discharged and in-house accounts by the census date of individual hospital days. Day of discharge is not included except when admit date and discharge date are the same.	sum of days from admission date to discharge date, excluding the day of discharge except where admit date equals discharge date, for discharged and in-house acute inpatient accounts (where the current date is substituted for discharge date for in-	sum(value("Patient Days"))	value("Acute Admission")	#,##0	down
12	AMI Population	The number of patients, counting unique medical record numbers (MRNs), with at least one account with an acute	count (dimcount) of medical record numbers (MRNs) with one or more accounts with an AMI	dimcount(value("MRN"))	value("CMS AMI Population Account")	#,##0	down

Measure Master for Metadata

Measure 	Description 	Definition 	Format 	Favorable
Acute ALOS	The average length of stay (ALOS) in days for discharged acute inpatient accounts, by discharge date.	Acute Discharge Days divided by Acute Discharges by discharge date	#,##0.00	down

Best Practice #4: Create Processes for Managing Metadata

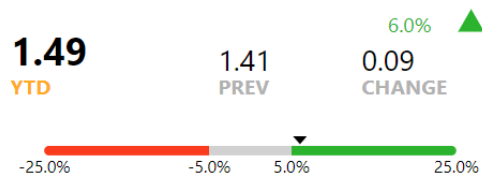


- ❑ Dictionary of KPIs & Descriptions
- ❑ Accessible to Info. Consumers
- ❑ Co-locate with Quantitative Data
- ❑ Manage with a Task Workflow
- ❑ Keep it Up-to-Date



Integrating Quantitative & Meta Data

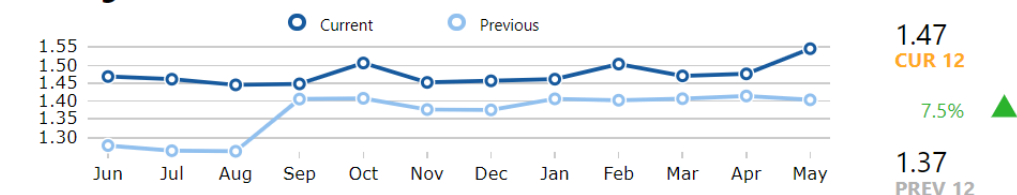
Overall All Payer Case Mix



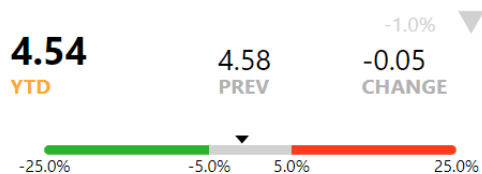
Previous 7 Day Summary



Trailing 24 Month Trend



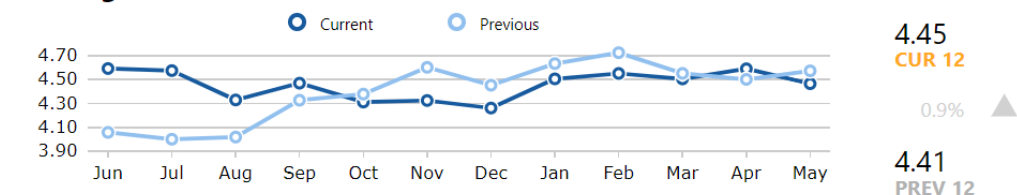
Acute ALOS



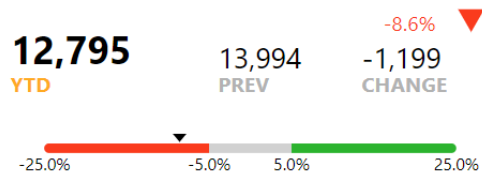
Previous 7 Day Summary



Trailing 24 Month Trend



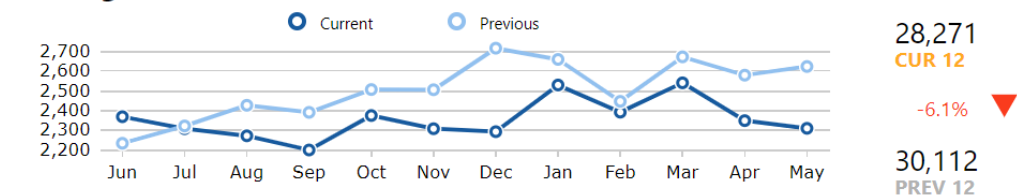
ED Visits Admitted



Previous 7 Day Summary

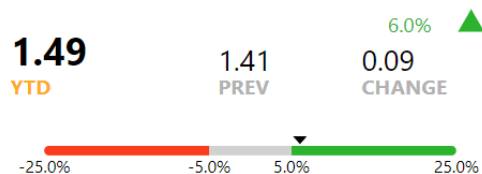


Trailing 24 Month Trend



Integrating Quantitative & Meta Data

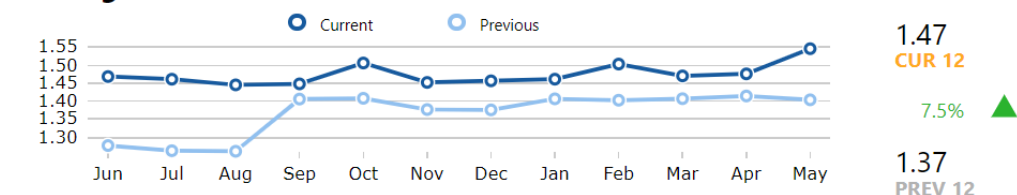
Overall All Payer Case Mix



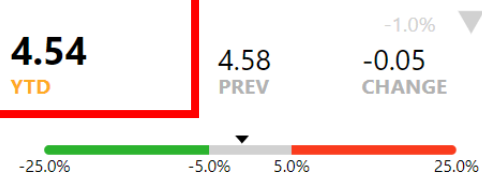
Previous 7 Day Summary



Trailing 24 Month Trend



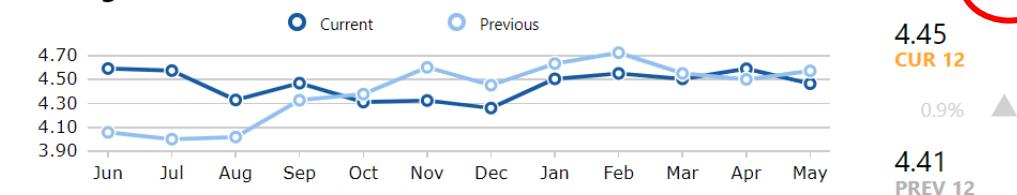
Acute ALOS



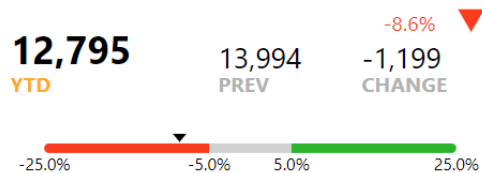
Previous 7 Day Summary



Trailing 24 Month Trend



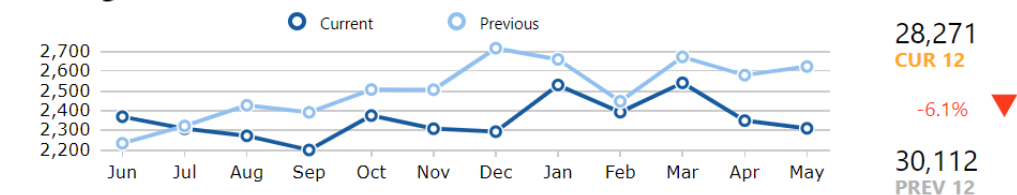
ED Visits Admitted



Previous 7 Day Summary



Trailing 24 Month Trend



Integrating Quantitative & Meta Data



Acute ALOS

Category: **Hospital Throughput**

Overview

Analysis

Composition

Facility [All Values \(5\)](#)

MTD
4.78 ▲

YTD
4.52 ▼

Organization

Category Hospital Throughput

Scope Discharges

Description

The average length of stay (ALOS) in days for discharged acute inpatient accounts, by discharge date.

Definition

Acute Discharge Days divided by Acute Discharges by discharge date

Display

Favorable Direction down

Format #,##0.00

References

UB-04 Specifications Manual & Essentials of Statistics in Health Information Technology

▼ Technical Details

Expression

Calculation

measure("Acute Discharge Days") / measure("Acute Discharges")

Filter

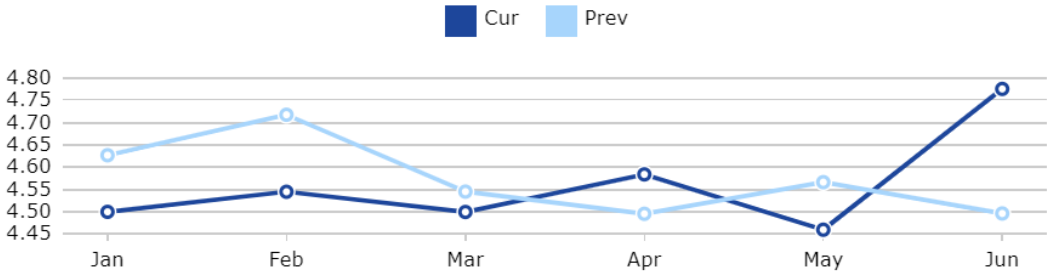
value("Acute Discharge")

YTD

Rolling 12 Months

Current Month

CALENDAR [Standard](#)



MONTHS	CUR YTD	PREV YTD	%+/-
Totals	4.54	4.58	-1.0%
Jan	4.50	4.63	-2.7%
Feb	4.55	4.72	-3.7%
Mar	4.50	4.55	-1.0%
Apr	4.58	4.50	2.0%
May	4.46	4.57	-2.3%
Jun	4.78	4.50	6.2%

Best Practice #4: Create Processes for Managing Metadata



- ❑ Dictionary of KPIs & Descriptions
- ❑ Accessible to Info. Consumers
- ❑ Co-locate with Quantitative Data
- ❑ Manage with a Task Workflow
- ❑ Keep it Up-to-Date



Best Practice #5: Validate!



- ❑ Subject Matter Expert Perspective
- ❑ Tie KPI Values to Source System Data
"Counts & Amounts"
- ❑ Automate Ongoing Integrity Checks
- ❑ Monitor Use & Respond to Feedback



Case Study: Physician Incentive Compensation

Problem:

As physician practices scale up, managing complex incentive compensation programs becomes increasingly challenging as manual processes are no longer practical.

Solution:

-  Align KPIs & Contract Terms
-  Automate the Process
-  Integrate Data across Sources
-  Provide Self-Service Reporting for Providers w/ Detailed Information
-  Give Administrators Tools for Validation & Analysis

Physician Compensation Self Service Reports



REPORT MONTH Jun-2023

CONTRACT PROVIDER Jarvis, Y (PHY_002482)

Physician Monthly Incentive Compensation Summary

	Jun-2023	YTD
Contract Daily Visits	9	10
Total Visits	215	1,494
Location:		
Downtown Cardiology	\$374.72	\$2,170.34
Jamestown		\$184.00
Longwood Hospital	\$21,498.75	\$149,783.59
Maplewood Hospital		\$212.00
Medical Plaza	\$77.34	\$1,204.09
Oceanway Ambulatory	\$500.79	\$1,688.78
Reliable Wound Care	\$167.41	\$1,530.46
Sanctuary OP	\$99.51	\$1,495.23
South Clinic	\$3,390.86	\$26,979.98
Springfield Hospital		\$146.95
Physician Total Receipts	\$26,109.38	\$185,395.42
Physician Payment Percentage	75.00%	76.67%
Physician Gross Pay	\$19,582.03	\$141,777.38

APP Profit Share

Arnold, J (PHY_000583)		\$0.00
Hendricks, K (PHY_019435)	\$0.00	\$3,914.96
Hobbs, D (PHY_014532)		\$0.00
Levine, S (PHY_002934)		\$0.00
Mcdowell, G (PHY_019409)	\$1,212.73	\$9,372.78
Pope, Z (PHY_019653)	\$0.00	\$1,986.13
Sims, U (PHY_002397)		\$0.00
Contract APP Profit Share Payment	\$1,212.73	\$15,273.87
travel reimbursement	\$430.00	\$430.00
Physician Total Pay	\$21,224.76	\$157,481.25
Malpractice Expense	\$451.50	\$2,643.90
double ordered xyz	\$1,100.00	\$1,100.00
Physician Net Pay	\$19,673.26	\$153,737.35

Payment Reporting & Validation

Physician Payment Summary

 REPORT MONTH Jun-2023
 PRACTICE All Values (2)
 FACILITY All Values (25)
 CONTRACT PROVIDER All Values (22)

CONTRACT PROVIDER	PHYSICIAN NET PAY	COLLECTIONS						PROFIT SHARE	ONETIME PAYMENTS
		COLLECTIONS PAYMENT	TOTAL VISITS	AVG DAILY VISITS	TOTAL PATIENTS	COLLECTIONS	PAYMENT % OF COLLECTIONS	APP PROFIT SHARE	ONETIME
Giles, J (PHY_026545)	\$94,476.21	\$64,049.81	417	26	397	\$85,399.75	75.00%	\$31,301.40	
Burgess, Z (PHY_000999)	\$32,739.20	\$32,739.20	321	17	299	\$43,652.27	75.00%		
Hanson, M (PHY_004071)	\$30,784.73	\$30,784.73	266	16	262	\$43,978.19	70.00%		
Gamble, Q (PHY_014330)	\$29,813.74		228	14	218			\$29,813.74	
Rich, L (PHY_001502)	\$27,712.83	\$27,712.83	361	14	323	\$39,589.76	70.00%		
Bush, I (PHY_001028)	\$26,108.77	\$26,108.77	271	15	287	\$37,298.25	70.00%		
Daugherty, P (PHY_018189)	\$25,140.13	\$10,199.68	137	10	135	\$16,999.47	60.00%	\$15,595.95	
Cole, F (PHY_000413)	\$23,680.97	\$7,517.35	101	11	78	\$10,739.07	70.00%	\$16,163.62	
Beach, T (PHY_000613)	\$23,545.12	\$22,394.39	179	14	182	\$31,991.98	70.00%	\$1,150.74	
Hart, S (PHY_000569)	\$23,142.12	\$16,943.42	148	10	137	\$24,204.88	70.00%	\$6,198.70	
Holloway, R (PHY_004214)	\$22,983.86	\$16,226.10	311	15	137	\$23,180.14	70.00%	\$6,757.77	
Crawford, T (PHY_000659)	\$21,675.87	\$21,675.87	240	14	227	\$30,965.53	70.00%		
Hahn, G (PHY_000439)	\$21,468.15	\$21,468.15	207	12	202	\$30,668.79	70.00%	\$0.00	
Sims, H (PHY_016723)	\$20,974.39	\$10,867.98	165	9	165	\$14,490.64	75.00%	\$10,106.41	
Mcbride, G (PHY_002140)	\$20,876.22	\$20,876.22	138	11	120	\$29,823.17	70.00%		
Cantrell, A (PHY_002378)	\$20,230.96	\$15,085.91	166	12	168	\$25,143.19	60.00%	\$7,720.05	
McLean, D (PHY_025244)	\$20,189.23	\$20,189.23	305	14	140	\$28,841.75	70.00%		
Jarvis, Y (PHY_002482)	\$19,673.26	\$19,582.03	215	9	85	\$26,109.38	75.00%	\$1,212.73	\$430.00
Munoz, Q (PHY_001193)	\$17,697.34		216	15	215	\$26,485.25		\$17,697.34	

 Excel

Contract Management

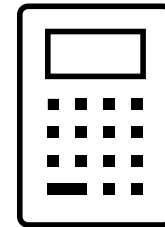
CONTRACT ID <u>6</u>		NPI <u>PHY_000999</u>	
NPI	PHY_000999		
Kareo Doctor Name	Burgess, Z		
Start Year	2024	Month	05
End Year		Month	
Contract Type	Collections		
Frequency	Monthly	Units	A
Pay After Term?	☐	Months	
State		W2 or 1099	1099
Malpr Type	Standard	W2 or 1099	
Profit Share	☒	W2 or 1099	1099
Consulting Hours	☒	W2 or 1099	1099
Medical Directorship	☐	W2 or 1099	
APP Stipend	☐	W2 or 1099	
Scribe Cost	☒	W2 or 1099	1099
Advance Payment	☒		
Notes	3-tier A		
Contract Notes			
Submit Reset			

Applying the Success Formula



- ☐ Stakeholders
- ☐ Subject Matter Experts
- ☐ Data Governance
- ☐ User Community Needs
- ☐ Facilitate & Monitor Adoption

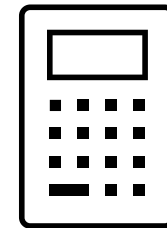
\$



Active Data Governance



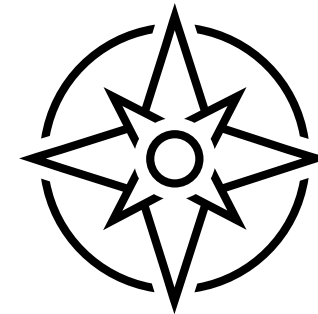
1. Engage Key Stakeholders
2. Start with KPIs, First
3. Identify the Right Data Sources
4. Create Processes for “Metadata”
5. Validate, Validate, Validate!



Summary



- ❑ Decision Support is Critical
- ❑ There's a Way to Ensure Success
- ❑ Data Governance will Help
- ❑ Financial Professionals are Key



Thank You!

Questions?



George Dealy: gdealy@dimins.com