## SYNTELLIS

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# **AXIOM INSIGHTS webinar**

(Based upon Version 2020.1)

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## AGENDA

- Introductions & Webinar instructions
- Syntellis Overview
- Month End Budget Variance Reporting
- Best Practices Report Design
- Using QA Diagnostics
- Questions and Answers

## **Webinar Information**

#### Maximize your viewing window



#### **Submit questions**



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# Month End Budget Variance Reporting

## Month End Budget Variance Reporting

## Variance Comments Collection

- Rate per Unit vs Amount Variances
- Flexible budgeting

#### **Performance Reporting Task Pane**

- Main Menu | Open App Menus | Management Reporting
- Options for Variance Analysis
  - Variance Comments Collection
  - Month End Review\_\_\_\_
  - Department Manager package

PERFORMANCE REPORTING Variance Comments Collection Variance Comments Comment Input Dept Variance Dept Variance Alert MultiDept Variance Comment Review 12Month Comment Review 12Month Comment Review\_Demo Variance Review Performance Reporting ~ 😑 Month End Review Income Statement Viewer Balance Sheet Viewer Financial Analysis Financial Statements Payroll Analysis Executive Summary Department Manager AP Distribution Report AR Distribution Report Budget Variance By Dept Cover\_Manager Dept Monthly Package GL Distribution Report MM Distribution Report Pay By Employee ID 🔊 Pay By JobCode RU Report RU Report\_Budget Scorecard 🖾 🔊 Variance Alert

### Month End Review Dashboard – Operational Overview - KPI

- Focus on:
  - Volume Variance
  - Rate per Unit KPIs
- Break out tabs for each category
  - Patient Revenue
  - Other Revenue
  - Labor
  - Benefits
  - Other Expenses
- Variance Comments Collection

SUN	MMARY	EXECUT	IVE OVERVIEW		OPERATION	AL OVERVIEW				
PI	Patient Rev	enue Otl	her Revenue	Labor	Benefits	Other Expenses	Variance Com	ments Collection		
			trasound ending February		ummary	/			🗁 Dept	Period Monthly Package
		Revenue				Expe	ense		Labor	
	Key Statis	tics			Т	otal Operating E	xpense per Unit		Salaries per Unit	
	250				Ę	50.42			5.64	
	Actual: 514		CYB: 26		Ad	otual: 126.94	CYB: 177		Actual: 90.13	CYB: 95.76
	Inpatient F	Revenue pe	r Unit		S	upplies Expense	e per Unit		Average Hourly Rate	
	0.62					2.40			(4.41)	
	Actual: 258.3	2	CYB: 257.7		A	tual: 4.09	CYB: 6 <b>↑ 36.9</b>		Actual: 21.23	CYB: 16.82
	Outpatien	t Revenue p	oer Unit	1	0	ther Expense pe	er Unit		Paid Hours per Unit	
	(42.	76)			Z	15.70			1.45	
	Actual: 362.7	8	CYB: 405.54		A	stual: 26.13	CYB: 71		Actual: 4.25	CYB: 5.69

### Month End Review Dashboard – Operational Overview - Labor

- Break out tab for Labor
- Focus on components of Labor Variance
  - Salary Dollars
  - Average Hourly Rate
  - FTEs
  - Paid Hours per Unit
- Salary Trend Graph (13 months)
- Account Level Detail



#### **Month End Review Dashboard – Variance Comments Collection**

s	SUMI	MARY	EXECUTIVE OVERVIEW	OPERATIONA	L OVERVIEW					
KPI		Patient Rever	ue Other Revenue Lab	or Benefits	Other Expe	enses Va	ariance Comm	ents Collect	ion	
			mments Collection		<b>Sparks</b>   Perio	od ending <b>Feb</b>	oruary 29, 2020	I		
Mont		h-End Variance E	xplanation - Feb-2020							
				Feb-2020	Feb-2020			Flex	Variance Explanation	Action Plan
		Acct	Description	Actual	Flex	Variance	Variance %	Alert	(max char 500)	(max char 500)
	~		Volume & Revenue Summary							
		70000	0 Key Volume Statistics	514	514	0	0.00%	•		
		<b>Q</b> 73000	0 Patient Revenue	158,613	155,371	3,242	2.09%	0		
			Other Operating Revenue	0	0	0	0.00%	۲		
			Non-Operating Revenue	0	0	0	0.00%	0		
1	> (	Q 76000	0 Paid Hours	1,054	872	(182)	(20.88%)	▲		
	~		Salary & Benefit Expenses	49,715	40,334	(9,381)	(23.26%)	A		
	(	<b>Q</b> 6010	0 Salaries - Regular	14,524	14,287	(237)	(1.66%)	0	-	
		<b>Q</b> 6011	0 Salaries - Overtime	975	1,087	112	10.31%	۲	-	
	(	<b>Q</b> 6012	0 Salaries - Non-Productive	1,182	1,587	405	25.54%	۲	-	
		Q 6060	0 Salaries - Contract Labor	29,646	0	(29,646)	(100.00%)	A	Due to education for the new	

- Variance Explanations
- Action Plan for addressing variances
- Alert flags at summary category or account level
  Comments & Action Plans posted for all 12 months

### Month End Review Dashboard – Rate | Volume | Efficiency

#### Variance Comments Collection Summary

Vice President: Scott Johanson | Director: Dianne Parnell | Manager: Chris Sparks | Period ending February 29, 2020

Month-End Variance Explanation - Feb-2020								Rate Volume Variance			
			Feb-2020	Feb-2020			Flex				
	Acct	Description	Actual	Flex	Variance	Variance %	Alert	Rate	Volume	Efficiency	12 mo. Alert
~		Volume & Revenue Summary									
	700000	Key Volume Statistics	514	514	0	0.00%	0	0	0	0	A
	<b>Q</b> 730000	Patient Revenue	158,613	155,371	3,242	2.09%	۲	3,242	0	0	۲
		Other Operating Revenue	0	0	0	0.00%	0	0	0	0	•
		Non-Operating Revenue	0	0	0	0.00%	0	0	0	0	٥
>	Q 760000	Paid Hours	1,054	872	(182)	(20.88%)	A	(182)	0	0	A
~		Salary & Benefit Expenses	49,715	40,334	(9,381)	(23.26%)	A	(959)	0	(8,422)	٢
	<b>Q</b> 60100	Salaries - Regular	14,524	14,287	(237)	(1.66%)	•	2,746	0	(2,983)	٢
	<b>Q</b> 60110	Salaries Overtime	975	1,087	112	10.31%	0	339	0	(227)	A
	<b>Q</b> 60120	Salaries - Non-Productive	1,182	1,587	405	25.54%	0	737	0	(331)	A

Rate Impact

Volume
 Impact

Save

 Efficiency Impact

- Flex Budget No volume variance
- Tip Use the Labor PriceVolumeEfficiency report to help with understanding the 3 categories



### **Month End Review Dashboard – Transaction Detail**



#### ExpenseTransaction Detail available:

- Payroll Data
- Journal Entries
- Accounts Payable
- Materials Management
- PO Received Not Invoiced
- Link to document images
- Patient Revenue drill to:
  - Revenue & Usage
  - Provider Billing data



# Report Writing Best Practices

## **Report Writing Best Practices**

- GetData When to use
- Checking for Unmatched Data
- Space for building reports

#### Formula - GetData

- Always use an AQ when possible
- Only use GetData for small data sets for which an Axiom Query (AQ) is unnecessary
- Often used for header data and to return variables used for queries and AQ filters
- Avoid adding GetData to AQ Calc Method rows to dynamically return data for each row\cell of the query

#### **Performance Considerations**

- GetData by itself is non-volatile but use caution when linking to a volatile function. The GetData will then behave as a volatile function
  - Example: Referencing a cell that contains a volatile function
- Avoid embedding another GetData function within the parameters of a GetData function. This configuration triggers multiple server calls and recalculations to resolve the "parent" GetData function, which can impact performance
- Avoid embedding multiple GetData functions within another function, such as an IF function. This type of construction results in each GetData function being handled using separate server calls, which can impact performance.
- NOTE Each GetData is a single query of the database.

### **GetData Alternative**

- Column and Range Filters can often be used to filter a query block and/or column by certain constraints, eliminating the need for a GetData on each row returned
- In this Example column G and column I return the same data set.
  - Colum G uses a Range Filter to only return P1 data for Entity 10.
  - Column I uses a GetData filter on Entity 10 and the current Dept for each row



### **Checking For Unmatched Data**

- In some cases, an Axiom query may return data records from the database that are not placed anywhere on the sheet. This "orphan" data is known as unmatched data (or non-matched data).
- Unmatched data may occur in the following circumstances:
  - The data ranges for the Axiom query have filters defined, and the record does not match any of the filters.
  - The Axiom query is set to update only, and there are no matching keys for the record in any
    of the data ranges.
- Too much unmatched data can affect query performance
  - Example: if the query settings return 5,000 records from the database, but only 200 of those records are brought into the sheet. Assuming that you really only want those 200 records, it is recommended to define a data filter on the query (or as a sheet filter)

#### **Unmatched Data Example**



- Query is set to Update Only. It will only return data for the 10 departments defined in the Control Column
- With no Data Filter, the report will return every record in the ACT2018 table but will only insert 10 of those records into the worksheet
- Recommend adding a Data or Sheet Filter that matches the expected data returned by the update only query

#### How to check for unmatched data

- Run QA Diagnostics to check for unmatched data
  - Can run the Find Unmatched AQ Data test
  - This is also included in the Refresh All Active AQs test
- Can also build a secondary AQ range to return just unmatched data
  - To use the UnmatchedData tag, create a data range tag as follows:
    - [AQ#;UnmatchedData]
    - [Stop]
    - Where # is the number of the Axiom query.
- More information found in the Help file article AX2087: Checking for unmatched data in an Axiom query

## Working (Attic) Space

- Attic space are the rows and columns above and to the left of the report area viewed by end users
- This space is used to build the report logic and store data used to build the structure and content of the report
- This area is often hidden to end users via Freeze Panes

A Home	Dept Variance X									
	<u>с                                     </u>		C			J	К	M	-	N
								[HideColumn]	_	
								[Copy;CF;1;FormulasOnly]	[Copy;CG;1	Formulas
	Acct.RPTMAP	Acct.RPTMAP.Description	ACT2019.P5 E	BUD2019.P5						
	0;0				0	0.00%		-		
		Reporting Timeseries =>		CYB5			1	CY		
		Reporting Period=>	5			1		Comments		
	[E	Column Reference=>	G	н	I.	J				
		Detail Tolerance Levels	Min	Max	<u>Threshold</u>		Budget	Summary Tolerance Levels		
	Reverse	Key Statistic	0%	2%		Detail		S_KeyStat		
		Paid Hours	0%	2%		Detail		H_Hours	-	
	Reverse	Patient Revenue	1%	5%	5,000	Detail		R_PatientRev		
	Reverse	Other Operating Revenue	0%	5%	1,000	Detail		R_OtherRev		
	Reverse	Non-Operating Revenue	0%	5%	1,000	Detail		R_NonOpRev		
		Salaries	1%	5%		Detail		E_Salaries		
1		Supplies	1%	5%		Detail		E_Supplies	_	
1		Other Expense	1%	5%	10,000	Detail		E_OtherExp		
		FTE Factor =>	171	171						
		Key Statistic:	0	30	(30)			Max Comment Length		
		Patient Revenue	0	0	0			Entity		
		Other Operating Revenue	0	0	0			Comparison Timeseries		
		Non-Operating Revenue	0	0	0			Comparison Label		
		Hours	0	0	0		<b>A</b>	STATUS(5)		
		FTEs	0.0	0.0	0.0		<b></b>	STATUS(4)		
		Avg Rate Per Hour	0.0	0.0	0.0			Filter Check:		
		Paid Hours / UOS	0.0	20.0	20.0			Comment Type Selected:		
		Salaries / UOS	0.0	0.0	0.0		<b>A</b>	FALSE		TR
		Supplies / UOS	0.0	0.0	0.0		<b>A</b>	Entity Exception Check		
		Other Exp / UOS	0.0	0.0	0.0		<b>A</b>	Post Non-Red Comments?		
		Total Exp / UOS	0.0	0.0	0.0			Reporting Period:		
		Salaries - no benefits	0	0	0			Dummy Sum formula (Required)		
		Calendar Days:	30	30	0.0			Proper Filter ?		
	Month-	End Variance Expla	anation							
		1		Nev. 2010			_	Negetine Veringen B. C. Ch.		
			Report Period:	Nov-2019			•	Negative Variance; Required Comment		
	Refresh to select a	a Dept to analyze	Vice President:					Positive Variance; Required Comment		
			Director:				•	Negative Variance; Exceeds \$ Threshold		
			Manager:				•	Negative Variance; Not Exceed \$ Threshold		
			Report Date: 0	07/27/20			<b>A</b>	Positive Variance		
									_	
		For the Month of November			Better/(Worse)		Budget	= Required Comment	=	Required
	Account	Description	Actual	Budget	Variance	Percent	Alert	Variance Explanation		Action
14021										

### Working (Attic) Space

- Recommend 30 rows above the report area and 7 to the left (depending on the number of queries)
- Provides room to troubleshoot functions and formulas and test output
- In addition, this can make modifying and adding additional features easier as you will have left room to add new components
- If you do not allocate enough attic space, you may have to insert additional columns or rows which can break cell references, wreaking havoc on your report setup



# **QA** Diagnostics

#### What does QA Diagnostics do?

- Checks reports for potential issues
- Runs a suite of tests to ensure reports are set up correctly and optimized

#### Why should you use it?

- Recommend running as part of the initial report creation process and on an ongoing basis when changes are made to a report
- When a report is opening or running slowly, or is returning an error, running diagnostics can often help diagnose the issue and point you in the direction of a solution
- Should be used in conjunction with manual testing to ensure the report runs as expected

### **How To Run QA Diagnostics**

• QA Diagnostics can be found in:

#### Axiom | Task Panes Library | Suite

- If you open QA Diagnostics *without a report open*, you can run QA Diagnostics in bulk for an entire folder
  - This will run the utility for all spreadsheet files in the folder and all subfolders.
  - All tests will be run except for tests that require saving the file or performing a save-to-database
- If you open the QA Diagnostics task pane while a report is open, you can either run the full suite of diagnostics or various categories, and even individual tests
- Once complete, the results will open in your default web browser
- Can be run in either the Windows or Excel Client



#### **QA** Diagnostics

- **Run All Diagnostics**: This will run the entire suite of diagnostics, including save-to-database and save file.
  - Do not recommend if the file is set up to save data to the database and you'd prefer it not
- Run All Diagnostics (No Save): This will run all diagnostic tests except the save data and save file checks.
- Axiom Queries: Will run all AQ diagnostics including:
  - Unmatched AQ data
  - Missing AQ tags
  - Validate refresh settings
- Workbook Level Diagnostics:
  - Checks file size
  - Check for any VBA
  - Validates sheet names
  - Total worksheets

	P
	Composite Tests
	🔤 Run All Diagnostics
	🔤 Run All Diagnostics (No Save)
	Diagnostic Categories
- /-	🚱 Axiom Queries
	🚳 Workbook Level Diagnostics
	Sheet Range Checks
	Control Sheet Checks
1.1	Sormulas and Axiom UDFs
	🚳 Save to Database Check
	🚳 Critical Diagnostics Only
	Individual Tests
	A Choose
	Utilities
	\delta Analyze Table and Column Usage
	& Clear Invalid Named Ranges
	& Remove Invalid Sheet Controls
	Remove Old Control Sheets
	💰 Run Bulk QA Diagnostics
	& Search Documents
	& Validate Security Filters
	Developer Diagnostics
	Axiom Explorer

### **QA Diagnostics (continued)**

- Sheet Range Checks: Check for data validation incompatible with Windows Client, checks named ranges, column and row number, and for merged cells (which can cause issues with file processing)
- **Control Sheet Checks**: Checks for old control sheet, invalid sheet controls, and invalid sheet filters
- Formulas and Axiom UDFs: This runs a suite of checks against all formulas in the workbook, including checking total number of formulas, formula length, circular reference, GetData Diagnostics (very important test!), formula error count, hidden formulas, etc.
- Save to Database Check: Check for any save errors
- Critical Diagnostics Only: This checks key areas of workbook for any major issues, including VBA checks, save errors, invalid sheet filters, merged cells, and formula error count



### **QA Diagnostics - Utilities**

- Clear Invalid Named Ranges: Removes any invalid named ranges from the file
- Remove Invalid Sheet Controls: Removes any columns in the Control Sheet that do not correspond to a sheet name in the file
- Remove Old Control Sheets: Removes archived Control Sheets. These usually start with the prefix "Old\_"
- Validate Security filters: This performs a general validate routine against security in the database and is not unique to the file opened. Most often used after making changes to security via Savetype-4 or Open Security in Spreadsheet

Com	posite Tests						
🔤 Run All Diagnostics							
🛄 Run All Diagnostics (No Save)							
Diagnostic Categories							
	Axiom Queries						
	Workbook Level Diagnostics						
	Sheet Range Checks						
	Control Sheet Checks						
-	Formulas and Axiom UDFs						
	Save to Database Check						
🚳 Critical Diagnostics Only							
Indi	vidual Tests						
Indi							
Indi	vidual Tests Choose						
Indiv A Utili	vidual Tests Choose						
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Indiv A Utili	vidual Tests Choose ties Analyze Table and Column Usage						
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Indiv A Utili C C C C C C C C C C C C C	vidual Tests Choose III ties Analyze Table and Column Usage Clear Invalid Named Ranges Remove Invalid Sheet Controls Remove Old Control Sheets Run Bulk QA Diagnostics Search Documents						

### **Interpreting QA Diagnostics**

#### Document Test Results (07/27/2020 11:25:40)

Back	to	Summary

Document Info:								
Document Tested:       QA Test.xlsx         Path:       Vaxiom\SystemFolderName_ReportsLibrary\SUPPORT\WHC\QA Test.xlsx         File Size (bytes):       100327         Last Modified By:       khasupport         Last Modified Date:       7/27/2020 11:11 AM								
Result Summary:								
Diagnostics Run	Errors		Warnings	Skipped	Status			
26	4 5	3	5	8	Critical Failure			
Result Details:								
how Errors and Warnings Only								

- 4 critical (red), 5 major (orange), and 3 minor (blue) test failures
- Overall status of report: Critical Failure
- Recommend drilling into failures by scrolling down and expanding test sections

#### **Interpreting QA Diagnostics**

#### Merged Cell S

- + Outcome: FAII
- Click '+' to view details of test
- Merged cell scan found columns with merged cells, which can cause issues when processing a snapshot. Can also return errors in the Window Client
  - Alternative: Center Across Selection found in Format Cells | Alignment
- Large used range Columns are extending far out beyond content. Recommend resetting used range. Can reduce file size and improve performance
- Max Row Number May be caused by large used range or AQ returning a large amount of records. Can impact file size and performance as well

#### Merged Cell Scan Description: Merged cells should be avoided if possible. Workbooks with action codes, Axiom Queries or other features using cut and paste (snapshot workbook for 1 sheet(s) contained merged cells mixed with AQs, action codes and/or view tags. Result: = 0Expected: Outcome FAILED (Critical) (1 critical, 0 major, 0 minor) Time: $< 1 \, \text{sec}$ Errors and Warnings (Show All) \*\*Sheet Report contains merged cells mixed with active Axiom Queries. \*\*Merged cells were detected in the following rows and columns in sheet 'Report' - Rows: 27 Columns: G,H,I Max Column Number Description: Worksheets with a large number of columns may not perform as expected. Result: 16136 < 200 Expected: Outcome FAILED (Major) (0 critical, 1 major, 0 minor) Time: < 1 sec Errors and Warnings (Show All) \*\*The result was not less than 200. Actual value: 16136. - (used range: \$A\$3:\$WVP\$9367), worksheet: Report. Max Row Number Worksheets with a large number of rows may not perform as expected. Description: Result 9367

Expected: < 15000

Outcome: WARNING

ne: < 1 se

#### Errors and Warnings (Show All)

\*\*The result was less than 15000, but was within warning range. Actual value: 9367. - (used range: \$A\$3:\$WVP\$9367), worksheet: Report.

### **Cell Formula Errors**

Cell Form	Cell Formula Error Count							
Description: Result: Expected:								
Outcome:	Outcome: FAILED (Critical) (1 critical, 0 major, 0 minor)							
Time:	< 1 sec							
Additional Info	<u>D:</u>							
	Nome	Desute						
	Name	Result						
Sheet Name	Sheet Name: Report 1							
	Errors and Warnings (Show All) **Error found in cell Report!I4: #ERR returned by Axiom formula =GetData("ACT2018.P1","Dept.Dept="&E4).							

- Found #ERR in a cell
- Can sometimes be ignored if expected
  - Ex. Formula referencing empty cell in Calc Method Row
- Provides location of each formula error in the report

## **User Defined Functions (UDFs)**

	Analyze Axiom UDFs								
	Description: Result: Expected:	escription: Using a large number of Axiom UDFs may significantly impact performance. 9328 AxiomEPM UDFs found in entire workbook.							
	Outcome:	e: FAILED (Major) (0 critical, 1 major, 0 minor)							
	Time:								
	Additional Info	Additional Info:							
				-					
•		Name		Result					
	GetPeriod(vo	latile in Windows client only)	2						
	GetSystemIn client only)	fo(volatile in Windows	1						
	GetData(vola	tile in Windows client only)	9325						

- Checks for user defined functions. Provides a count of all functions
- Also includes a count of volatile function
  - Volatile functions trigger recalculation on every worksheet change, so they can have a drastic impact on worksheet performance
    - Some functions are volatile in only one client or the other
    - Most are volatile in both

#### **GetData Diagnostics**

#### GetData Diagnostics

 Description:
 No GetData diagnostic results should be out of expected ranges.

 Result:
 Test aborted - see error below

 Expected:
 No GetData tests fail.

 Outcome:
 FAILED (Critical) (1 critical, 0 major, 0 minor)

 Time:
 2.12 min.

 Errors and Warnings (Show All)

 \*\*Formula count for GetDatas was 9325, which is above threshold of 5000. Aborting GetDataDiagnostics...

- Very common cause of performance issues and report errors
  - Find large GetData error message
- Recommend no more than 1500 GetDatas
- Above 1500 you will start to receive errors and experience significant performance issues
- GetData Diagnostic will quit with an error if there are more than 5000 GetDatas

#### **Performance Analysis**

Performance Analysis

Μ

Description: AQ and GetData performance is affected by many factors, and expected refresh times may vary from implementation to implementation. If you find that your AQs are taking too long to refresh, you can use the Log Analyzer too Result: Expected: Refresh times are within expected range Outcome: FAILED (Major) (0 critical, 3 major, 0 minor) Time: <1 sec Additional Info: Details

Action	Time in Seconds	Details
Total time spent refreshing AQs	123.476	The result was not less than 15. Actual value: 123.476.
Total time spent to calc the workbook	0.891	
Refresh AQs for sheet 'Report' in workbook 'QA Test.xlsx'	121.459	The result was not less than 10. Actual value: 121.459.
>Refreshing Axiom Query Axiom Query #1	120.718	The result was not less than 10. Actual value: 120.718.
>Process AQ '1'	120.715	
Grouping/Ungrouping	0.041	

- Provides time for each component Axiom Query to complete it's refresh
- Can provide quantified real world performance metrics
- Can use the results to consider filtering data returned, reducing GetDatas, and other methods to reduce time to refresh

# **Questions and Answers**

Please send suggestions for future webinars to

ClientRelations@kaufmanhall.com



# **SYNTELLIS** Elevating performance