

## Paper 169-2010

# Using SAS BI to Deliver Ongoing Professional Practice Evaluation (OPPE) At Maine Medical Center

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### **ABSTRACT**

Maine Medical Center (MMC) is leveraging the power of the SAS® Business Intelligence (BI) platform in delivering customized physician evaluation reports 24/7 via MMC's intranet and the internet. The reports are used by our medical staff office, department chiefs and individual physicians to meet The Joint Commission regulatory requirement for Ongoing Professional Practice Evaluation (OPPE). OPPE reports are used to monitor department and physician performance on key quality and safety goals. These reports are accessed by logging into the SAS Information portal and selecting the OPPE report link. The reports will then be generated with the most current information available. This paper is a review of the Business Intelligence (BI) infrastructure which MMC has developed to deliver secure OPPE reports to the departments of Medicine, Surgery, Cardiac Services and Pathology.

### **INTRODUCTION**

MMC is using SAS BI to build an infrastructure for information delivery. Our goal is to have the best information delivery system for health care in the United States. This paper will review how we integrate data from disparate sources and also describes the SAS tools which are used to deliver OPPE reports. If possible, this presentation of the paper will include a real-time demonstration of the OPPE reports.

### **ABOUT MAINE MEDICAL CENTER – THE NEED FOR A BI INFRASTRUCTURE**

MMC is Maine's largest tertiary care hospital with 638 beds. The volume of data generated as a result of treating patients over the course of a year is staggering. MMC has 31K inpatient discharges encompassing 60K patient days and has 300K outpatient visits. These patients have 890K ICD9 diagnoses codes and 230K ICD9 procedure codes. 4 million orders are entered into our computerized order entry system by 1.2K physicians with medical staff privileges. These include attending physicians, residents, physician assistants and nurse practitioners. 6.3M lab and diagnostic results and 5.4 Million charges items are generated. Each system in the hospital involved in the patient's care is a source of data that can be leveraged to monitor performance. The SAS Business Intelligence infrastructure allows MMC to access and integrate data sources in one central location and offers a variety of tools for analyzing and delivering data efficiently.

### **ABOUT THE JOINT COMMISSION & OPPE**

MMC participates in The Joint Commission's hospital accreditation program to certify that it meets the highest standards of quality. The Joint Commission accredits and certifies more than 16,000 health care organizations and programs in the United States.

One of The Joint Commission's standards requires that organizations look at performance data for all practitioners with privileges on an ongoing basis rather than at the two-year reappointment process. This allows us to identify and correct potential problematic performance early and take steps to improve on a timelier basis. MMC has over 1.2K professional physicians with privileges on the medical staff which is organized into 12 clinical departments. Each department chief selects their respective performance measures in consultation with their staff.

## BUSINESS RULE DEVELOPMENT

The OPPE requirement came about from a change in the regulatory requirement. From this change, it became apparent that there was a need for more data that was more current and more clinical. The process to formulize a business requirement took about nine months.

The process was initiated by the Director of Regulatory Affairs. The Director organized meetings with each department chief, the institution's Patient Safety Officer, and our Manager of Data Analysis to provide education about the regulatory requirements. Each chief then met with their physicians to define measures. The Manager of Data Analysis researched and tested each measure for feasibility. Once measures were finalized and verified by these stakeholders, prototypes were developed and presented to each department chief to test and build their respective reports. Examples of the reports for four departments: Pathology, Medicine, Surgery, and Cardiac Services are below.

Additional MMC requirements for the reports were that the reports should be available anywhere and at any-time; should be secure; and should contain the latest data for each measure. Additionally, department chiefs should have a department report and a report for each of their physicians who would also receive their respective reports.

Emails were also sent to credentialing and chiefs requesting their requirements.

A couple of examples of the business requirements for the reports are listed:

- "The OPPE reports will reflect an individual surgeon's results to drive improvement. These reports will also be used to identify problem areas; show surgeons their results relative to colleagues; and work with surgeons & task groups to address problem areas. The reports will show change over time and will be used for the credentialing process. It is a requirement to use them for re-credentialing." - Chief of Surgery
- "Reports will assist the chiefs in determining current clinical competence for medical staff members at biennial reappointment which is a regulatory requirement. The reports will be used as a tool for the evaluation process for reappointment (and possibly in between) to assess practitioner competence." - Medical Staff Coordinator - Medical Affairs

Pathology department summary:

<b>Chief Pathology Report</b>			
<b>01APR2009 - 30SEP2009</b>			
<b>measure</b>	<b>numerator</b>	<b>denominator</b>	<b>score</b>
360 Peer Review	41.5	11	3.77
Autopsy turnaround time	0.0	45	0.0000
Completion of CME	10.0	10	1
External Retrospective Cases	3.0	128	0.0234375
Frozen Section (Intraoperative) Cases	0.0	1261	0.0000
Prospective Case Review	4.0	1623	0.0025
Reported Incidents			0

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Medicine department summary:

**Chief OPPE Medicine Report**

Evaluation Category	Month	Criteria	Den	Last 1-12 Months	Den	Last 13-24 Months	Target
Patient Care	JAN10	PN2_Pneumococcal_Vaccination	229	93.01	246	83.74	85.00
		PN5c_AB_wi_6_hours	226	95.13	197	98.48	85.00
		PN7_Influenza_vaccination	161	96.89	173	81.50	85.00
	SEP09	Actual to Expected Mortality	6,740	0.87	6,346	1.06	1.00
		Deaths		337.00		372.00	
Practice Based Learning	DEC09	CPOE Rate (provider entered own orders in SCM)	317,265	96.32	499,009	96.36	95.00
Professionalism	NOV09	Percent Discharge Summaries completed within 15 days	2,753	100.00	1,892	92.07	
System Based	DEC09	Inpatient Discharges (in which provider was attending)		7,196.00		7,011.00	
	JAN10	Consults (as identified in SCM as consulting provider)		6,216.00		6,650.00	

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Surgery department:

**Chief OPPE Surgery Report**

Evaluation Category	Month	Criteria	Den	Last 1-12 Months	Den	Last 13-24 Months	Target
Patient Care	JAN10	SCIP All Measures All or None Bundle	1,091	92.21	1,053	87.75	91.00
		SCIPSIP 1 - Prophylactic antibiotic received within 1 hour prior to surgical incision - Overall	1,091	97.53	1,053	97.06	93.00
		SCIPSIP 2 - Prophylactic antibiotic selection for surgical patients - Overall	1,091	99.54	1,053	99.62	93.00
		SCIPSIP 3 - Antibiotic discontinued within 24 hours after surgery end time - Overall	1,091	94.41	1,053	89.46	96.00
	SEP09	Actual to Expected Mortality	7,147	0.67	7,189	0.64	1.00
		Deaths		88.00		96.00	
Practice Based Learning	DEC09	CPOE Rate (provider entered own orders in SCM)	308,361	96.12	482,889	94.63	95.00
Professionalism	NOV09	Percent Discharge Summaries completed within 15 days	2,281	100.00	1,475	93.69	
System Based	DEC09	Inpatient Discharges (in which provider was attending)		7,515.00		7,282.00	
	JAN10	Consults (as identified in SCM as consulting provider)		3,965.00		3,710.00	

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Cardiac Services department

**Chief OPPE Cardiac Services Report**

Focus Category	Objective Category	Beg Month	End Month	Criteria	Number
Practitioner Volume	Electrophysiology (Invasive Monthly Report)	JUL09	DEC09	Ablation	224
				EPS	232
				ICD	210
				Permanent Pacemaker	241
	Invasive (Invasive Monthly Report)	JUL09	DEC09	Cath	1,979
				PCI	826

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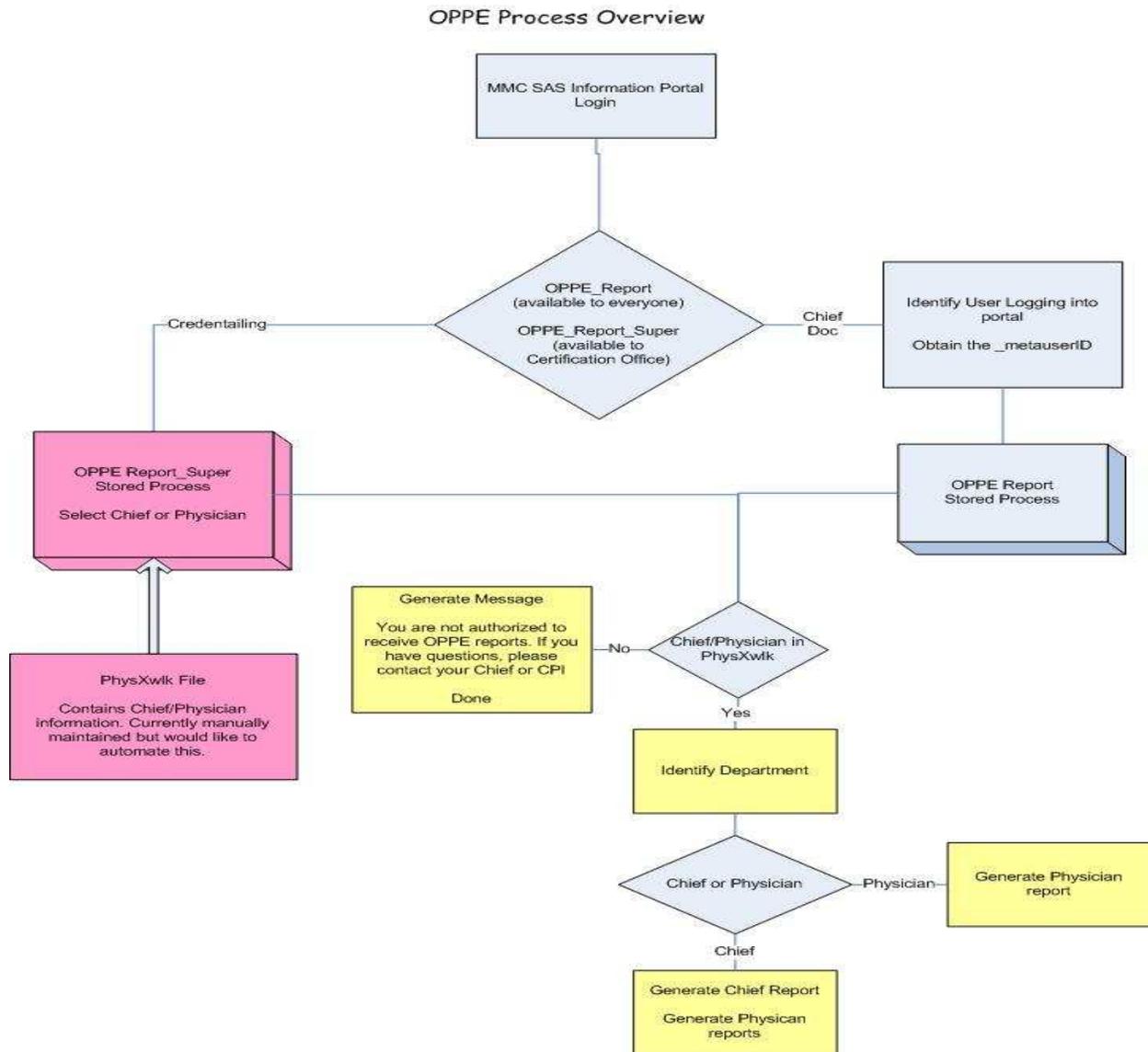
**PROCESS OVERVIEW**

To access OPPE reporting, the user logs into the SAS Information portal. There are two types of processing. Refer to Figure 1:

The first type of report processing is for the Credentialing Department. Credentialing needs to be able to select which department chief or physician is to be reported on. This requirement involved maintaining a list of department chiefs and physicians to be selected. Credentialing logs on to their portal and selects the chief or physician and the report is generated.

The second type of processing is when a department chief or physician logs on to their portal and requests their report. Department chief or physician reports will be generated using their respective login IDs to determine which reports and data are to be used. The portal recognizes who is logging in and processes the appropriate report. Department chief reports contain department level and physician specific information for their departments and a report on each of the physicians in the department. Each physician receives their individual report.

Figure 1: Process Overview

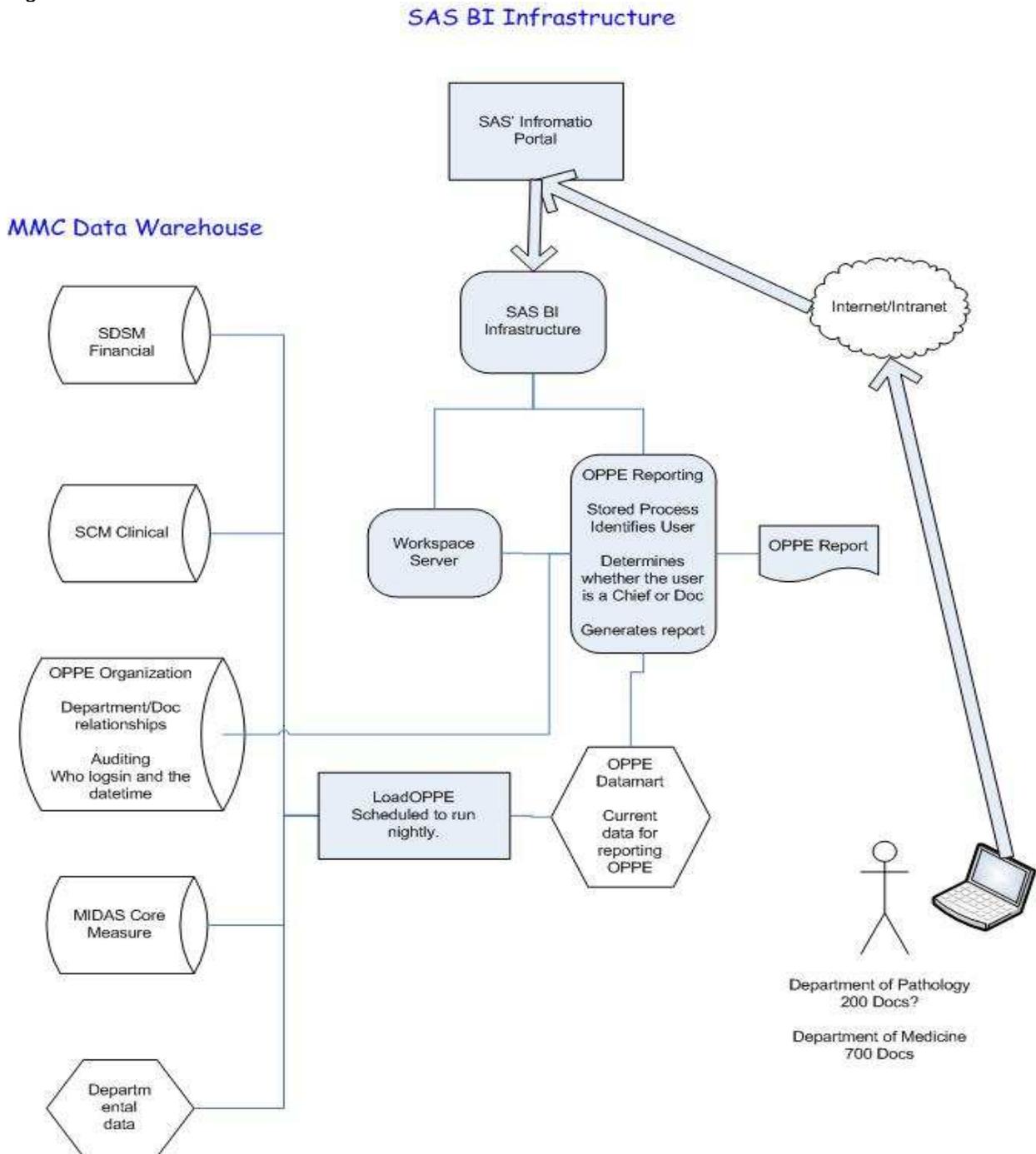


**BI INFRASTRUCTURE**

MMC's BI infrastructure is comprised of a metadata warehouse and different information delivery options. Figure 2 depicts this infrastructure and how it relates to OPPE reporting. The metadata warehouse is built and maintained using SAS Management Console. Primarily using SAS ACCESS/OLEDB, we access data from a variety of databases (mySQL, DB2, CACHE, MS Access/Excel) and data sets.

The OPPE solution involved building a batch process that runs nightly to build a data mart for reporting. This allows the data to be current and decreases the amount of time to generate reports. The reports are generated using a stored process and are delivered through the information portal.

Figure 2: BI Infrastructure



## DEMO OPPE SUPER

We will now give a live demonstration of MMC OPPE reporting on the internet.

<http://sasportal.mmc.org/Portal/displayLogon.do>

## CONCLUSION

This paper is presented to demonstrate how MMC is effectively using its BI Infrastructure to meet the Joint Commission's Standard for Ongoing Professional Practice Evaluation (OPPE), while also meeting the needs of the MMC's medical staff. This includes their requirement that their quality reports are available 24X7; are secure, current, and flexible in content and data; and are easily accessible.

## ACKNOWLEDGMENTS

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