

Increasing the Efficiency and Accuracy of Procedure Tracking

**Presented at ACC.2016
April 2, 2016**

**Darla Fjerstad, Program Administrator
Cardiovascular Disease Fellowship Program
University of South Dakota Sanford School of Medicine
Sioux Falls, South Dakota**



**SANFORD
HEART**

- There is no financial relationship to disclose

OBJECTIVE:

- To present the efficiency, accuracy, confidentiality and veracity of utilizing an electronic record to tally procedures performed by fellows during their mentored training
 - It is often dependent upon the timely entry and accuracy of self-reporting using a data entry program.



- Accessing a facility's EMR can avoid recording errors and inadvertent omission of procedures, while providing accurate information in a timely and confidential manner.

**First... I would like to tell you about our
fellowship program.**

Sanford USD Medical Center Sioux Falls, South Dakota



Sanford Heart Hospital opened in March, 2013





Sanford Heart Hospital Lobby

University of South Dakota Sanford School of Medicine Cardiovascular Disease Fellowship Program

The Cardiovascular Disease Fellowship Program at the USD Sanford School of Medicine was established in July, 2012 with two fellows. Two more fellows were added to the program in July, 2013 and in July, 2014. In July, 2015, the first two fellows graduated and two more fellows were added.

Third Year Fellows



Shawn Kelly, MD



Amol Raizada, MD



Amornpol
Anuwatworn, MD



Shenjing Li, MD

First Year Fellows



Jimmy Yee, MD



Vishesh Kumar, MD

2015 Graduates

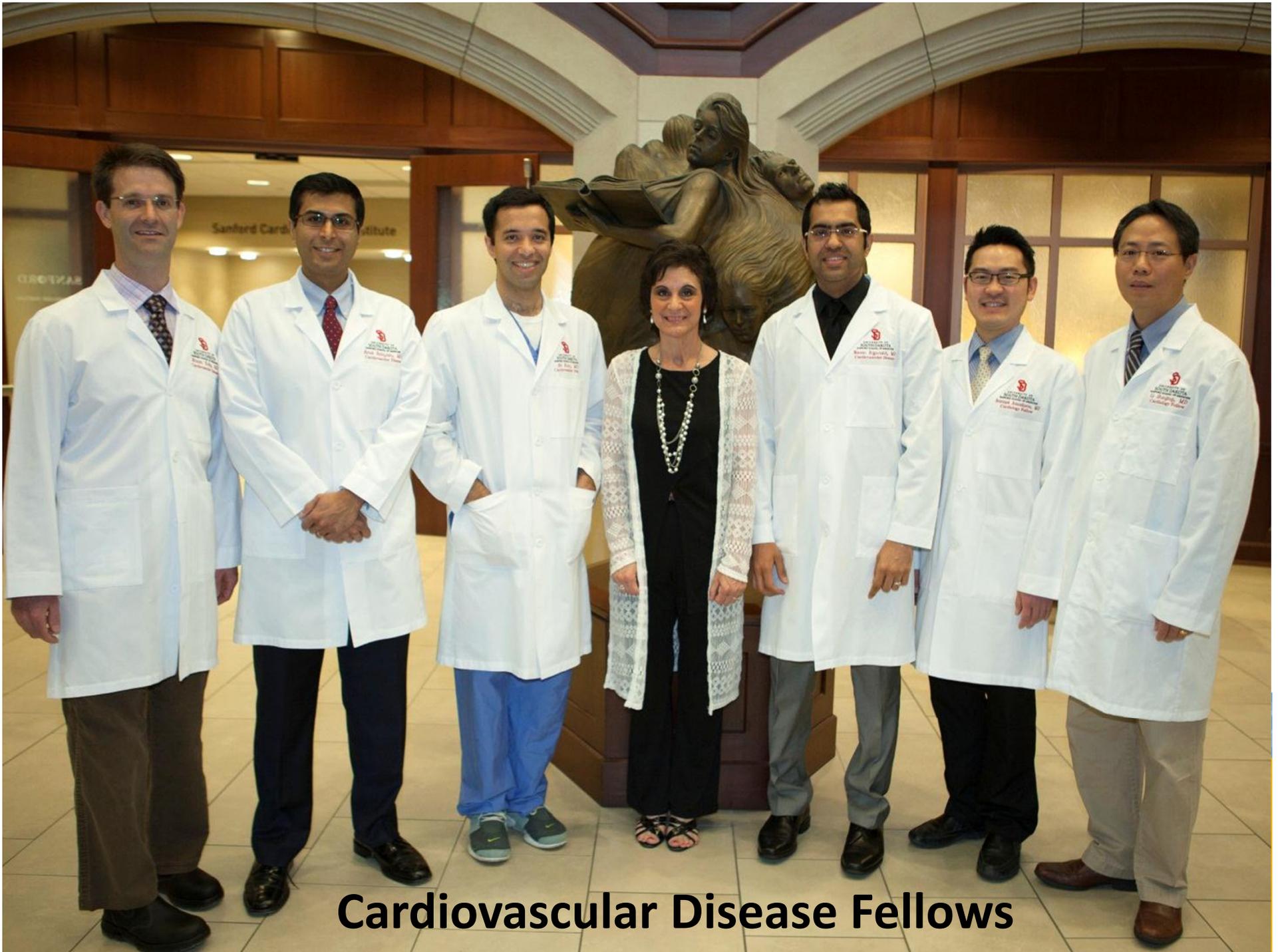


Naveen
Rajpurohit, MD



Mohammad
Khan, MD





Cardiovascular Disease Fellows

**Program Director Dr. Adam Stys
Program Administrator Darla Fjerstad**



PROCEDURE REQUIREMENTS:



Cardiovascular Disease Fellowship Program and ACGME Requirements (March 1, 2015)

*Performance of right & left heart cath, including coronary arteriography = 300
ACGME requires each fellow to participate in a minimum of 100

*Performance of stress ECG test = 200
ACGME requires 50

*Performance of echocardiography = 100
ACGME requires 75

*Interpretation of echocardiography = 600
ACGME requires 150

*Interpretation of electrocardiograms = 3500
ACGME requires 3500

*Performance of Direct Current Cardioversion = 20
ACGME requires 10

*Interpretation of nuclear cardiology (radionuclide studies to include SPECT myocardial perfusion imaging and ventriculograms) = 300
ACGME requires 100

*Observe the performance and interpretation of transesophageal echo studies = 100
ACGME does not indicate a number

*Conscious sedation = Need to certify at Sanford Health
ACGME does not indicate a number

*Placement & management of temporary transvenous pacemakers = 10
ACGME does not indicate a number

*Programming and follow-up surveillance of permanent pacemakers and ICDs = 50 all documented in New Innovations
ACGME does not indicate a number

*Holter Interpretation/Cardiac Event Recorder Interpretation = 20

*Cardiac MRI = 10

*Cardiac CT = 30

	Khan	Required	Still Needs to Do	Percentage Complete	Rajpurohit	Required	Still Needs to Do	Percentage Complete
Echo Lab (Interpretation)	252	1200	948	21.00%	210	1200	990	17.50%
Echo Adult (Perform)	79	100	21	79.00%	64	100	36	64.00%
Stress (Perform) ✕	32	700	668	4.57%	5	700	695	0.71%
TEE (Perform)	40	50	10	80.00%	57	50	-7	114.00%
TEE (Interpretation)	83	100	17	83.00%	108	100	-8	108.00%
diac Catheterization/Coronary Angiogram	591				454			
Coronay Stent/Balloon Angioplasty/Other	156				170			
Temporary Pacemaker	9				7			
Balloon Pump/LV Assist Device	5				6			
IVUS/FFR/OCT	17				22			
Valves	23				19			
EP Studies (Diagnostic)	11				14			
EP Studies (Ablation)	11				14			
Peripheral Angiogram	4				9			
Peripheral Intervention	3				4			
Cardioversion	14				9			
Pericardiocentesis	2				4			
Aortagram	3				4			
PPM (Permanent Pacemakers)/ICD/Other	35				40			
Unspecified	0	0	0		1	0	-1	
Nuc Med (interpretation)	-191	100	-91	191.00%	97	100	3	97.00%
EKG (interpretation)	1041	3500	1308	62.63%	1182	3500	1052	69.94%
Heart Screens	1151				1266			
Holter Monitors	6	50	44	12.00%	0	50	50	0.00%

75% or Higher

25%-74%

24% and Below

	Khan	Required	Still Needs to Do	Percentage Complete	Rajpurohit	Required	Still Needs to Do	Percentage Complete
Echo Lab (Interpretation)	252	1200	948	21.00%	210	1200	990	17.50%
Echo Adult (Perform)	79	100	21	79.00%	64	100	36	64.00%
Stress (Perform) ✕	32	700	668	4.57%	5	700	695	0.71%
TEE (Perform)	40	50	10	80.00%	57	50	-7	114.00%
TEE (Interpretation)	83	100	17	83.00%	108	100	-8	108.00%
diac Catheterization/Coronary Angiogram	591				454			
Coronay Stent/Balloon Angioplasty/Other	156				170			
Temporary Pacemaker	9				7			
Balloon Pump/LV Assist Device	5				6			
IVUS/FFR/OCT	17				22			
Valves	23				19			
EP Studies (Diagnostic)	11				14			
EP Studies (Ablation)	11				14			
Peripheral Angiogram	4				9			
Peripheral Intervention	3				4			
Cardioversion	14				9			
Pericardiocentesis	2				4			
Aortagram	3				4			
PPM (Permanent Pacemakers)/ICD/Other	35				40			
Unspecified	0	0	0		1	0	-1	
Nuc Med (interpretation)	-191	100	-91	191.00%	97	100	3	97.00%
EKG (interpretation)	1041	3500	1308	62.63%	1182	3500	1052	69.94%
Heart Screens	1151				1266			
Holter Monitors	6	50	44	12.00%	0	50	50	0.00%

75% or Higher
25%-74%
24% and Below

	Khan	Required	Still Needs to Do	Percentage Complete	Rajpurohit	Required	Still Needs to Do	Percentage Complete
Echo Lab (Interpretation)	252	1200	948	21.00%	210	1200	990	17.50%
Echo Adult (Perform)	79	100	21	79.00%	64	100	36	64.00%
Stress (Perform) ✕	32	700	668	4.57%	5	700	695	0.71%
TEE (Perform)	40	50	10	80.00%	57	50	-7	114.00%
TEE (Interpretation)	83	100	17	83.00%	108	100	-8	108.00%
diac Catheterization/Coronary Angiogram	591				454			
Coronay Stent/Balloon Angioplasty/Other	156				170			
Temporary Pacemaker	9				7			
Balloon Pump/LV Assist Device	5				6			
IVUS/FFR/OCT	17				22			
Valves	23				19			
EP Studies (Diagnostic)	11				14			
EP Studies (Ablation)	11				14			
Peripheral Angiogram	4				9			
Peripheral Intervention	3				4			
Cardioversion	14				9			
Pericardiocentesis	2				4			
Aortagram	3				4			
PPM (Permanent Pacemakers)/ICD/Other	35				40			
Unspecified	0	0	0		1	0	-1	
Nuc Med (interpretation)	-191	100	-91	191.00%	97	100	3	97.00%
EKG (interpretation)	1041	3500	1308	62.63%	1182	3500	1052	69.94%
Heart Screens	1151				1266			
Holter Monitors	6	50	44	12.00%	0	50	50	0.00%

75% or Higher
25%-74%
24% and Below

	Khan	Required	Still Needs to Do	Percentage Complete	Rajpurohit	Required	Still Needs to Do	Percentage Complete
Echo Lab (Interpretation)	252	1200	948	21.00%	210	1200	990	17.50%
Echo Adult (Perform)	79	100	21	79.00%	64	100	36	64.00%
Stress (Perform) ✕	32	700	668	4.57%	5	700	695	0.71%
TEE (Perform)	40	50	10	80.00%	57	50	-7	114.00%
TEE (Interpretation)	83	100	17	83.00%	108	100	-8	108.00%
diac Catheterization/Coronary Angiogram	591				454			
Coronay Stent/Balloon Angioplasty/Other	156				170			
Temporary Pacemaker	9				7			
Balloon Pump/LV Assist Device	5				6			
IVUS/FFR/OCT	17				22			
Valves	23				19			
EP Studies (Diagnostic)	11				14			
EP Studies (Ablation)	11				14			
Peripheral Angiogram	4				9			
Peripheral Intervention	3				4			
Cardioversion	14				9			
Pericardiocentesis	2				4			
Aortagram	3				4			
PPM (Permanent Pacemakers)/ICD/Other	35				40			
Unspecified	0	0	0		1	0	-1	
Nuc Med (interpretation)	-191	100	-91	191.00%	97	100	3	97.00%
EKG (interpretation)	1041	3500	1308	62.63%	1182	3500	1052	69.94%
Heart Screens	1151				1266			
Holter Monitors	6	50	44	12.00%	0	50	50	0.00%

75% or Higher
25%-74%
24% and Below

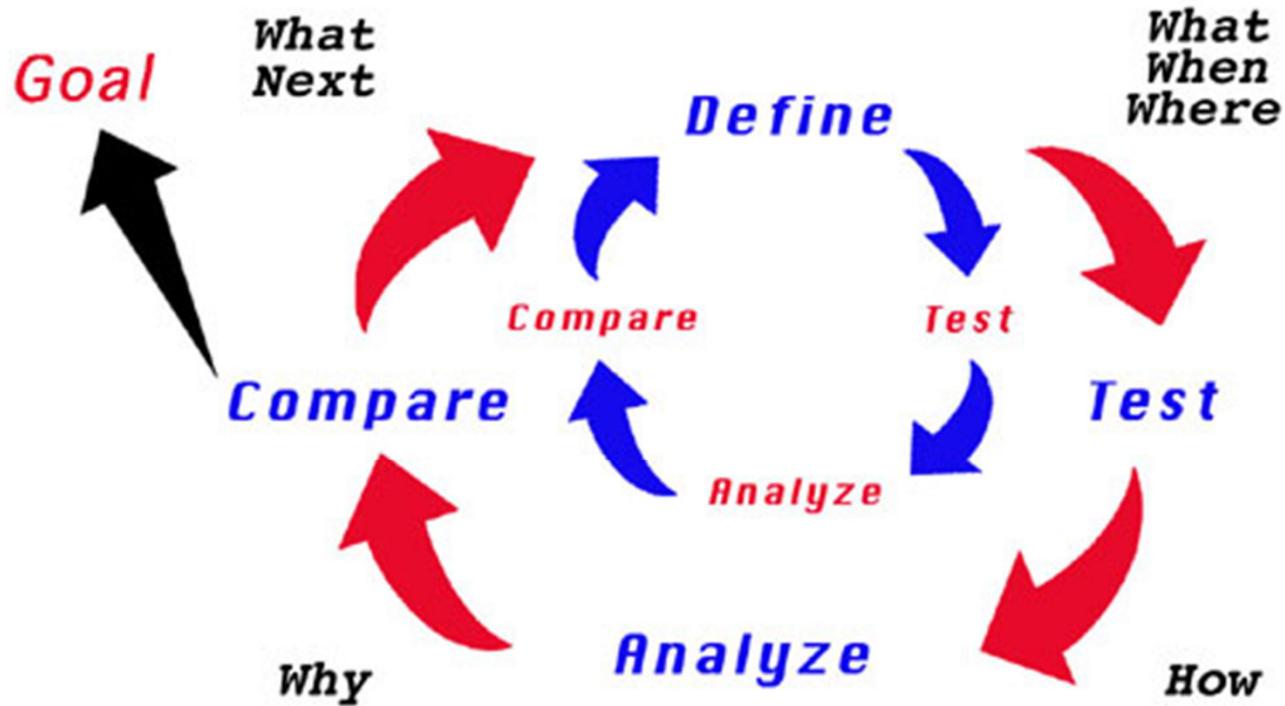




IS THERE A MORE TIME-EFFICIENT AND ACCURATE METHOD?

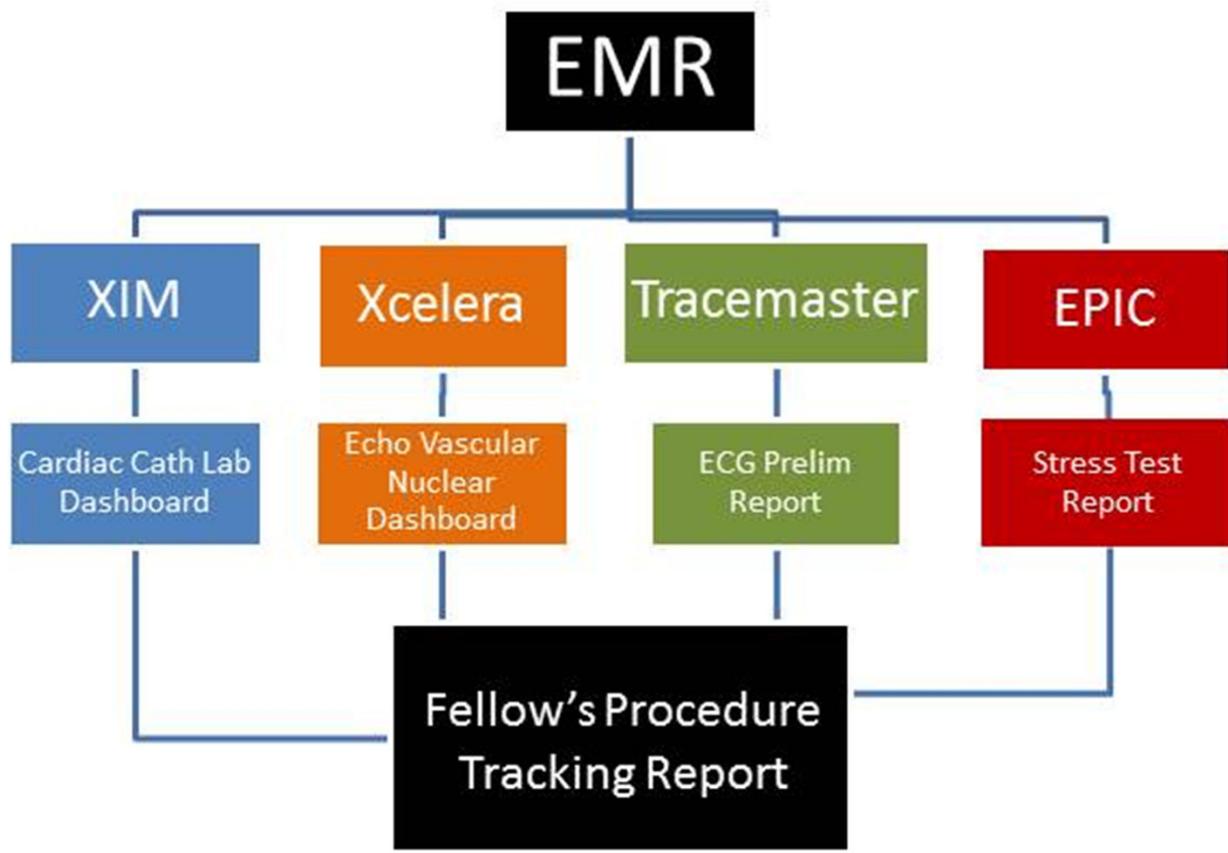
SANFORD
HEART

Problem Solving Process



OUR SYSTEM OF TRACKING PROCEDURES:

- We utilize the Epic EMR system that interfaces with imaging, ECG, and cath lab databases.
 - Reports are generated showing the total tally of performed procedures on a monthly basis into a physician specific procedural log called a “dashboard”
 - The dashboard data is transferred to an Excel data sheet called the Procedure Tracking Report
 - This report records the cardiovascular procedures to be performed by each fellow as required by the ACGME during his/her three years of training.



COMMUNICATION:

- There needs to be clear communication with the fellows, fellowship coordinator and the Cardiology PACS Administrator.



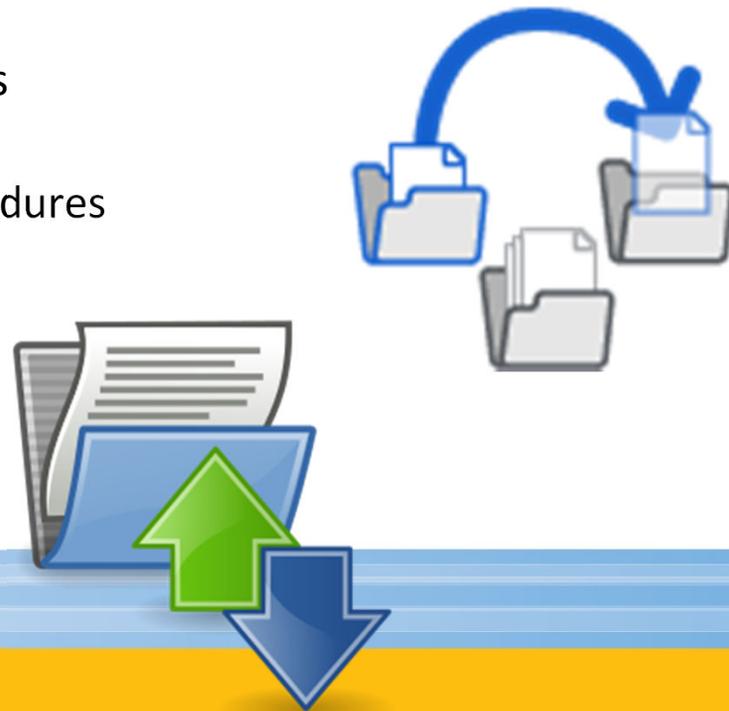
CARDIOLOGY PACS ADMINISTRATOR:

- It is essential that the Cardiology PACS Administrator becomes well versed in writing code that can search each of the procedural based data programs that are interfaced with the EMR record.
- Our program is fortunate that our PACS administrator worked in the Cath Lab for years and also has a Computer Science background.
- If you don't have a PACS Administrator, be specific to the vendor as to exactly what your program needs and what you want to see on your reports.



CREATING THE DASHBOARD TEMPLATE:

- In conjunction with the program director, program administrator and the Cardiology PACS Administrator determines the data set parameters:
 - Name of the fellows
 - Procedure “buckets”
 - Specific cath procedures
 - Echo procedures
 - Nuclear medicine procedures
 - ECG procedures
 - Date of Service
 - Patient ID#



REPORT STRUCTURE:

- Utilizing the SAP Crystal Reports®, the Cardiology PACS Administrator designs the fields and report structure.

Crystal Reports - [Report2]

File Edit View Insert Format Database Report Window Help

Start Page Report2 x

Design Preview x

Groups

Report2

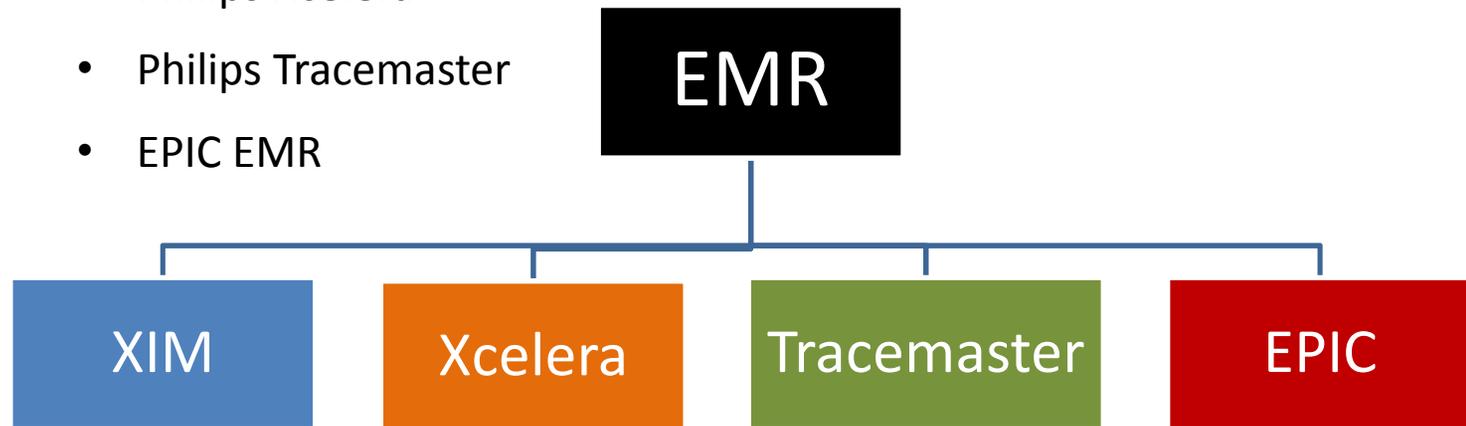
RH
PH

1/19/2011

<u>number</u>	<u>short description</u>	<u>dv assigned to</u>	<u>dv state</u>
D INC000009	Reset my password		Open
D INC000010	Need Oracle 10GR2 installer		Open
D INC000011	Need new Blackberry setup		Open
D INC000012	eFax is not working		Open
D INC000013	EMAIL is slow when an attac		Open
D INC000014	missing my home directory		Open
D INC000015	I can't launch my game anyrr		Open
D INC000016	Rain is looking on main DNS		Open

EMR SYSTEM:

- The fellowship program at the Sanford University of South Dakota Medical Center utilizes four applications within the EMR system:
 - Philips XIM
 - Philips Xcelera
 - Philips Tracemaster
 - EPIC EMR

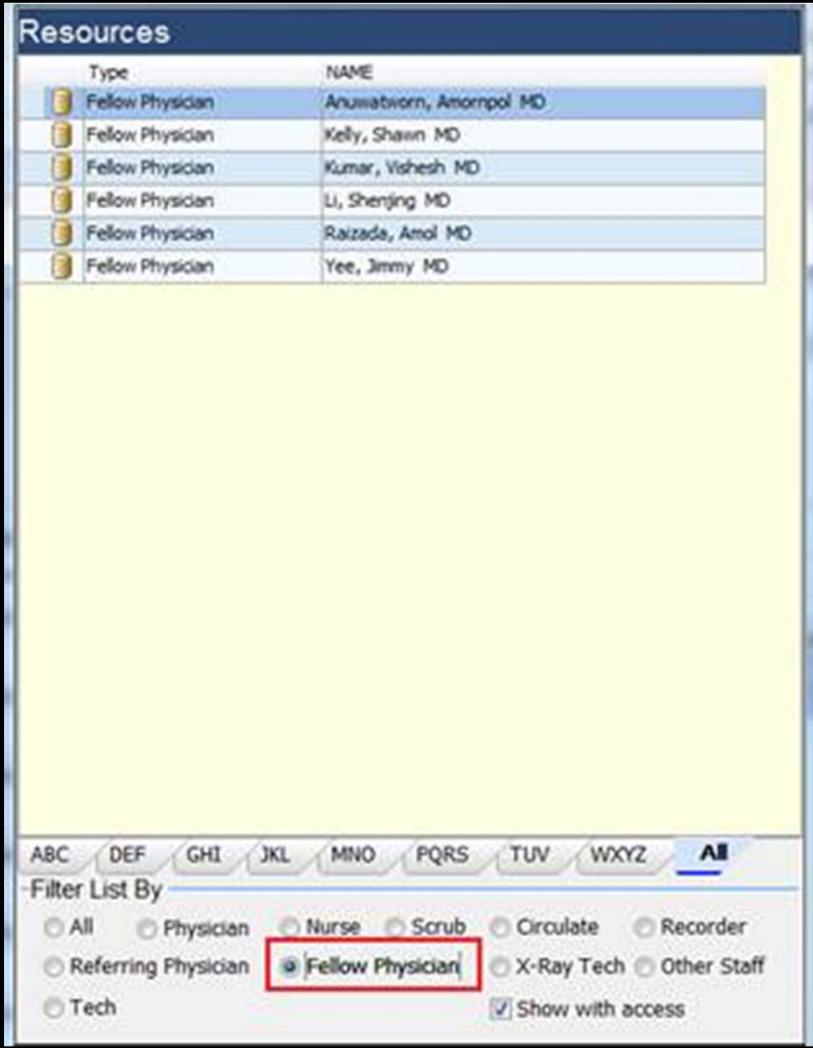


XIM = XPER INFORMATION MANAGEMENT:

- XIM is the source for the cardiac cath lab and cardioversion information.
- Within XIM, there is a “fellow” role field that is utilized for the fellows.

XIM = XPER INFORMATION MANAGEMENT:

- A fellow is assigned to each cath lab procedure.



The screenshot displays the 'Resources' section of the XIM system. It features a table with two columns: 'Type' and 'NAME'. The table lists six 'Fellow Physician' entries with their respective names. Below the table is a large yellow area, likely for additional details or a map. At the bottom, there are navigation tabs (ABC, DEF, GHI, JKL, MNO, PQRS, TUV, WXYZ, All) and a 'Filter List By' section with radio buttons for various roles. The 'Fellow Physician' option is selected and highlighted with a red box. A 'Show with access' checkbox is also present.

Type	NAME
Fellow Physician	Anuwatvorn, Anornpol MD
Fellow Physician	Kelly, Shawn MD
Fellow Physician	Kumar, Vishesh MD
Fellow Physician	Li, Shenzjing MD
Fellow Physician	Raizada, Amol MD
Fellow Physician	Yee, Jimmy MD

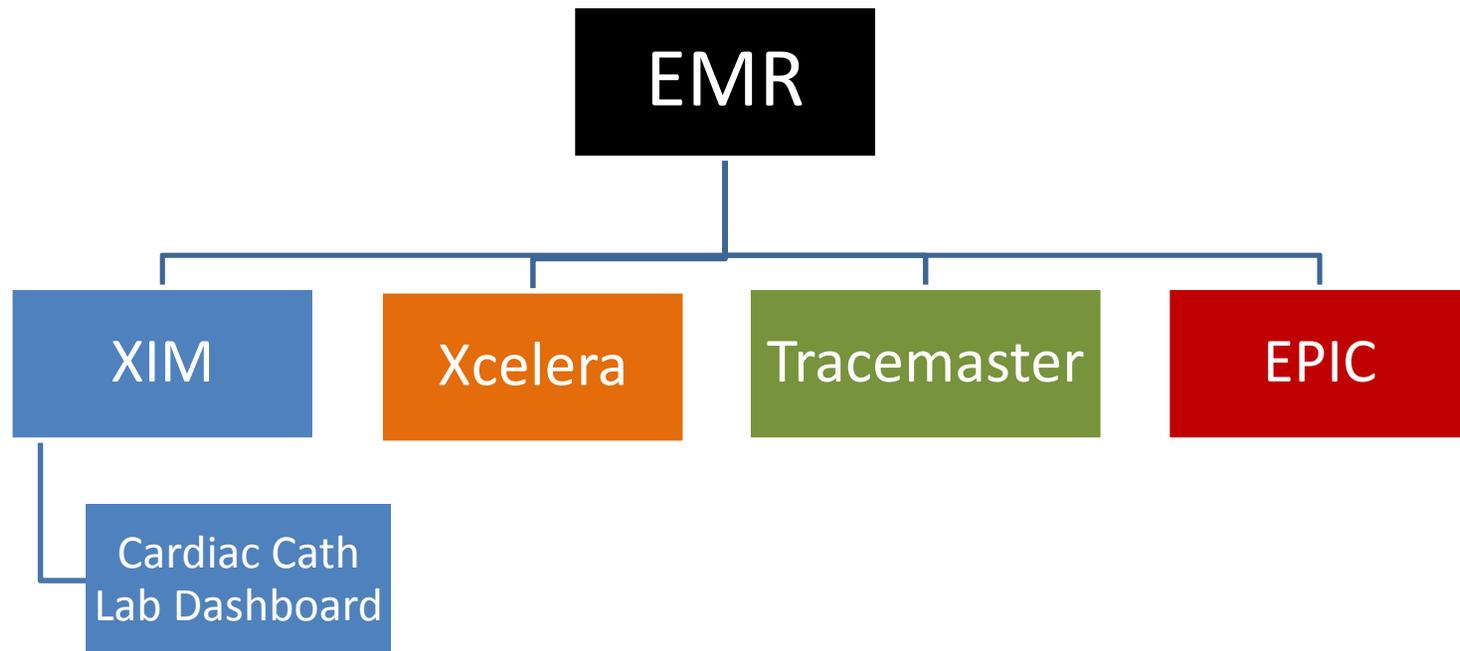
ABC DEF GHI JKL MNO PQRS TUV WXYZ **All**

Filter List By

All Physician Nurse Scrub Circulate Recorder

Referring Physician Fellow Physician X-Ray Tech Other Staff

Tech Show with access



CARDIAC CATH LAB DASHBOARD:

- The Cardiac Cath Lab Dashboard shows the monthly tally of 25 types of procedures.

SANFORD HEALTH		Fellow CCL Dashboard																		James Jones, MD						
December 2015																										
Cardiac Diagnostic			Cardiac Intervention							Devices				IVUS/FFR		Peripheral		EP/Cardioversion			Peds/Congenital					
Cardiac Angio	Left Heart Cath	Right Heart Cath	PCI	PFO	Lariat	TAVR	Valvuloplasty	Robotics	Pericardiocentesis	PPM	ICD	TPM	IABP	IVUS	FFR	Diag	Intervention	EP	Ablation	CV	Cardiac Angio	Left Heart Cath	Right Heart Cath	PFO	PDA	
5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

XCELERA – Echo, Stress Echo, Nuclear Medicine

- Xcelera is the cardiology PACS application that is utilized for cath lab and cardiac imaging.
- A customized fellow tab was created in which a fellow can be assigned that has interpreted or/and performed a study.

XCELERA – Echo, Stress Echo, Nuclear Medicine

- This becomes the data source for non-invasive imaging. This includes all echoes, vascular and nuclear med procedures.

The screenshot displays the Xcelera software interface. The main window shows a 'Preliminary Adult Echocardiogram' report for a patient named 'TEST IMAGE'. The report includes patient information such as MRN, account number, DOB, age, and gender. It also features an 'Interpretation Summary' section and a list of 'Measurements with Normals'. A red box highlights a list of procedures on the right side of the interface, including TTE, TEE, Stress Interp, and Nuc Interp for various patients like KELL, RAIZ, ANUW, LI, and KUMA. The 'SONOGRAPHER COMMENTS' field contains the text 'Fellow'.

US Reporting (Xcelera) - TEST IMAGE (MRN TEST IMAGE) Default Institution

Study Patient Measure Report View Window Help

Adult (Tomasz Stys Adult Profil-)

9/24/2015 02:01 PM 3/18/2015 10:58 AM 3/13/2015 08:24 AM 3/12/2015 01:42 PM 3/10/2015 12:28 PM 3/10/2015 08:30 AM 3/5/2015 12:47 PM 3/5/2015 10:46 AM 2/19/2015 08:30 AM

Preliminary

Study location field not populated with appropriate location.

Adult Echocardiogram

Name: TEST IMAGE, MRN: TEST IMAGE Study Date: 09/24/2015 02:01 PM
 Account #: DOB: 02/25/1950 Gender: Female
 Age: 65 yrs

Interpretation Summary

The following measurements and calculations are modality derived values. These values are provided for interpreting physician reference. Please refer to the summary

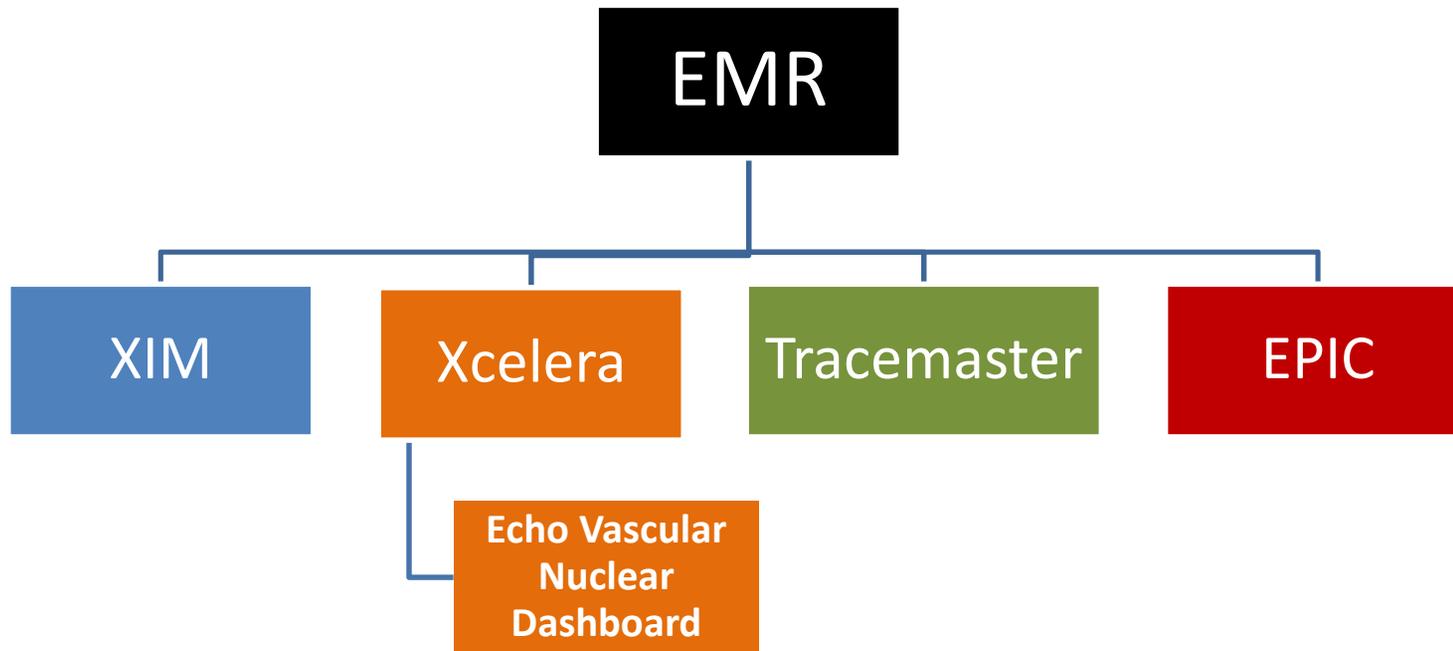
Measurements with Normals

Reading Physician: Electronically signed by: on 02/15/2016 06:37 PM

KELL-33 Dr Kelly TTE Performed
 KELL-36 Dr Kelly TTE Interp
 KELL-31-1 Dr Kelly TEE Performed
 KELL-30-1 Dr Kelly TEE Interp
 KELL-37 Dr Kelly Stress Interp
 KELL-38 Dr Kelly Nuc Interp
 RAIZ-33 Dr Raizada TTE Performed
 RAIZ-36 Dr Raizada TTE Interp
 RAIZ-31-1 Dr Raizada TEE Performed
 RAIZ-30-1 Dr Raizada TEE Interp
 RAIZ-37 Dr Raizada Stress Interp
 RAIZ-38 Dr Raizada Nuc Interp
 ANUW-73 Dr Anuwatworn TTE Performed
 ANUW-76 Dr Anuwatworn TTE Interp
 ANUW-71-1 Dr Anuwatworn TEE Performed
 ANUW-70-1 Dr Anuwatworn TEE Interp
 ANUW-77 Dr Anuwatworn Stress Interp
 ANUW-78 Dr Anuwatworn Nuc Interp
 LI-63 Dr Li TTE Performed
 LI-66 Dr Li TTE Interp
 LI-61-1 Dr Li TEE Performed
 LI-60-1 Dr Li TEE Interp
 LI-67 Dr Li Stress Interp
 LI-68 Dr Li Nuc Interp
 KUMA-10 Dr Kumar TTE Performed
 KUMA-15 Dr Kumar TTE Interp
 KUMA-20 Dr Kumar TEE Performed
 KUMA-25 Dr Kumar TEE Interp
 KUMA-30 Dr Kumar Stress Interp

Information | Measure | Score | Interpret | Comments |
 LV | RV | Abia | AV | MV | TV
 PV | Aorta and PA | FE | IVC
 Procedures | Technical Comments
 SONOGRAPHER COMMENTS | Fellow

Finding Code:
 Fellow



ECHO, VASCULAR, NUCLEAR LAB DASHBOARD:

- The Echo Vascular Nuclear Dashboard shows the monthly tally of 11 types of procedures.

James Jones, MD

SANFORD
HEALTH

Fellow Echo/Vas/Nuc Dashboard

1/1/2016 7:35:18AM December 2015

TTE		TEE		SE	Nuc Med	Renal	Venous	Arterial	ABI	Carotid
Performed	Prelim Interpreted	Performed	Prelim Interpreted							
2	5	0	0	7	6	8	5	6	4	20

TRACEMASTER:

- Tracemaster is the data source of the ECG report.
- Customized criteria codes were created for each fellow. Example: Dr. Kelly = KELL
- Upon interpreting a study, a fellow inserts his criteria code to be assigned to the ECG procedure.

TRACEMASTER - ECGs

Philips ECGVue Universal Edition

File View Tools Help

Search Save Print Assign Verify Edit Compare Confirm Summary Stmt Waveform Report Help Logout

ID: E242399 Name: ZAT..., A...

15-Feb-2016 8:56:44 AM

HR: 75	P: 81
RR: 800	QRS: 91
PR: 148	T: 69
QRSD: 106	
QT: 364	Gender: Male
QTc: 407	Age: 40 Years

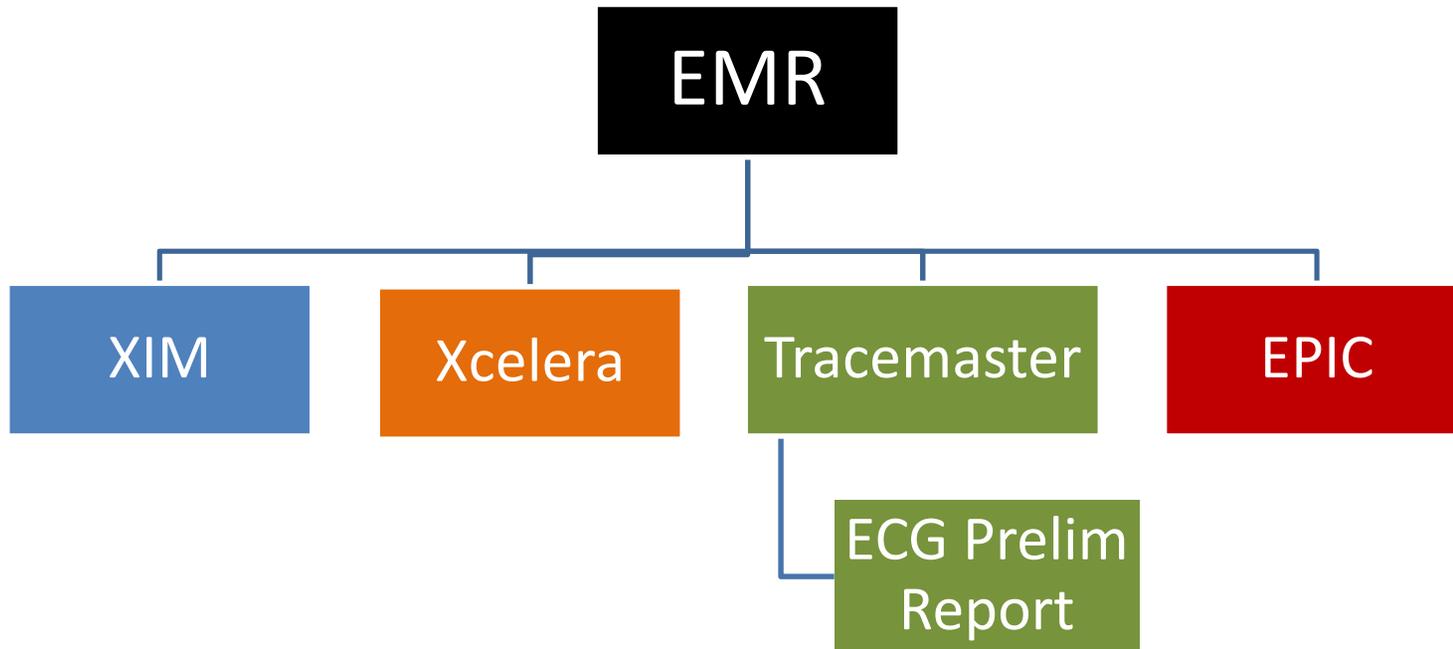
Dx... Reason:

INTERPRETATION (CRITERIA: 0A)

BORDERLINE INTRAVENTRICULAR CONDUCTION DELAY
CONSIDER RIGHT VENTRICULAR HYPERTROPHY

Code: or Text:

JT	JUNCTIONAL TACHYCARDIA
JTRI	JUNCTIONAL RHYTHM WITH VPC'S IN A TRIGEMINY PATTERN
\$BAS KELL	Preliminary interpretation was completed by Dr Shawn Kelly
<end> KHAN	Preliminary interpretation was completed by Dr Muhammad Khan
KUMA	Preliminary interpretation was completed by Dr Vishesh Kumar
LAA	LEFT ATRIAL ABNORMALITY
LAACB	LAA, CONSIDER BIATRIAL ABNORMALITIES
LAD	LEFT AXIS DEVIATION
LAE	LEFT ATRIAL ENLARGEMENT



ECG PRELIM REPORT:



James Jones, MD

Fellow ECG Prelim

December 2015

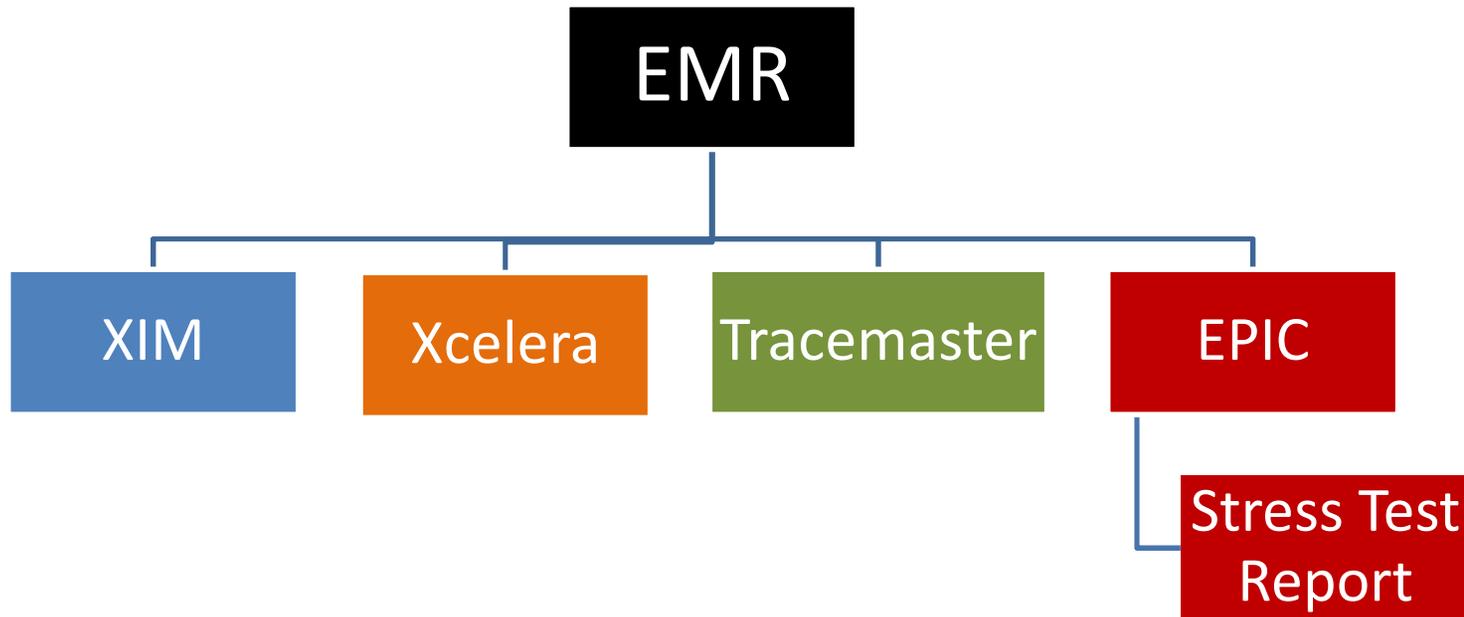
1/1/2016

62



EPIC EMR:

- EPIC is the database that contains the patient medical records.
- A stress test template was created that records the events of the stress test including the performing physician.
- This becomes the searchable data source for stress tests.



STRESS TEST REPORT:

STRESS LAB PROCEDURES

October, 2015

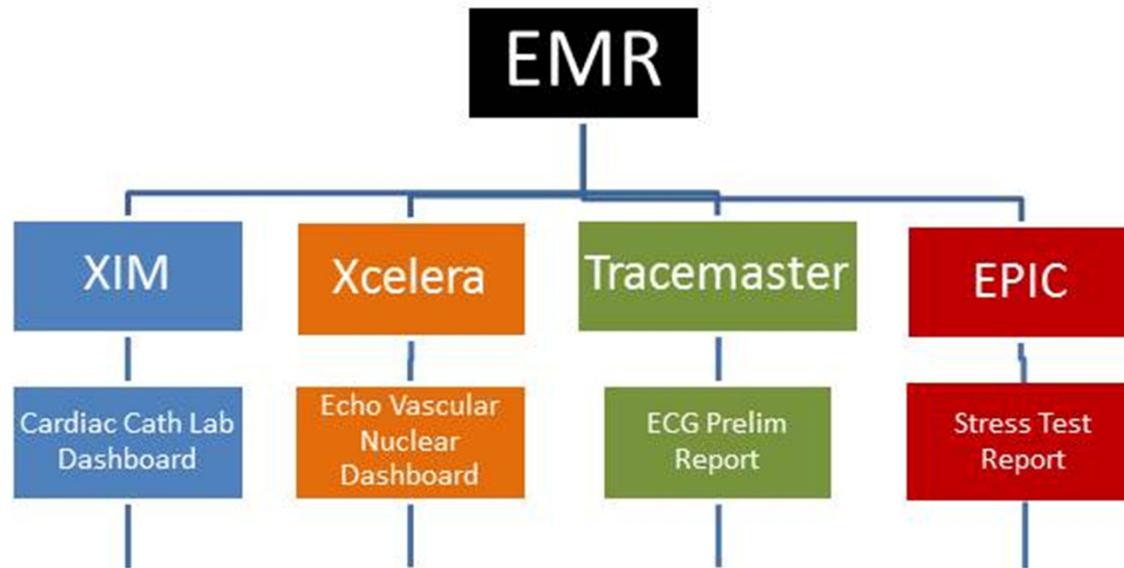
Patient	Patient#	Date	Fellow
	E999999	04/01/2015	James Jones, MD

STRESS LAB PROCEDURES

February, 2016

47768689	02/09/2016	Li, Shenjing
47980814	02/16/2016	Li, Shenjing
48162392	02/22/2016	Li, Shenjing
48228549	02/02/2016	Li, Shenjing
48230680	02/02/2016	Li, Shenjing
48232959	02/01/2016	Li, Shenjing
48233840	02/15/2016	Li, Shenjing
48248093	02/12/2016	Li, Shenjing
48248469	02/02/2016	Li, Shenjing
48273684	02/11/2016	Li, Shenjing
48275370	02/01/2016	Li, Shenjing
48275639	02/01/2016	Li, Shenjing
48284260	02/01/2016	Li, Shenjing
48292622	02/01/2016	Li, Shenjing







Fellow CCL Dashboard

December 2015

Cardiac Diagnostic			Cardiac Intervention							Devices				IVUS/FFR		Peripheral		EP/Cardioversion			Peds/Congenital				
Cardiac Angio	Left Heart Cath	Right Heart Cath	PCI	PFO	Lariat	TAVR	Valvuloplasty	Robotics	Percardiocentesis	PPM	ICD	TPM	IABP	IVUS	FFR	Diag	Intervention	EP	Ablation	CV	Cardiac Angio	Left Heart Cath	Right Heart Cath	PFO PDA	
5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Fellow Echo/Vas/Nuc Dashboard

1/1/2016 7:35:18AM

December 2015

TTE		TEE		SE	Nuc Med	Renal	Venous	Arterial	ABI	Carotid
Performed	Prelim Interpreted	Performed	Prelim Interpreted							
2	5	0	0	7	6	8	5	6	4	20



Fellow ECG Prelim

James Jones, MD

December 2015

1/1/2016

62

STRESS LAB PROCEDURES

October, 2015

Patient	Patient#	Date	Fellow
	E999999	04/01/2015	James Jones, MD

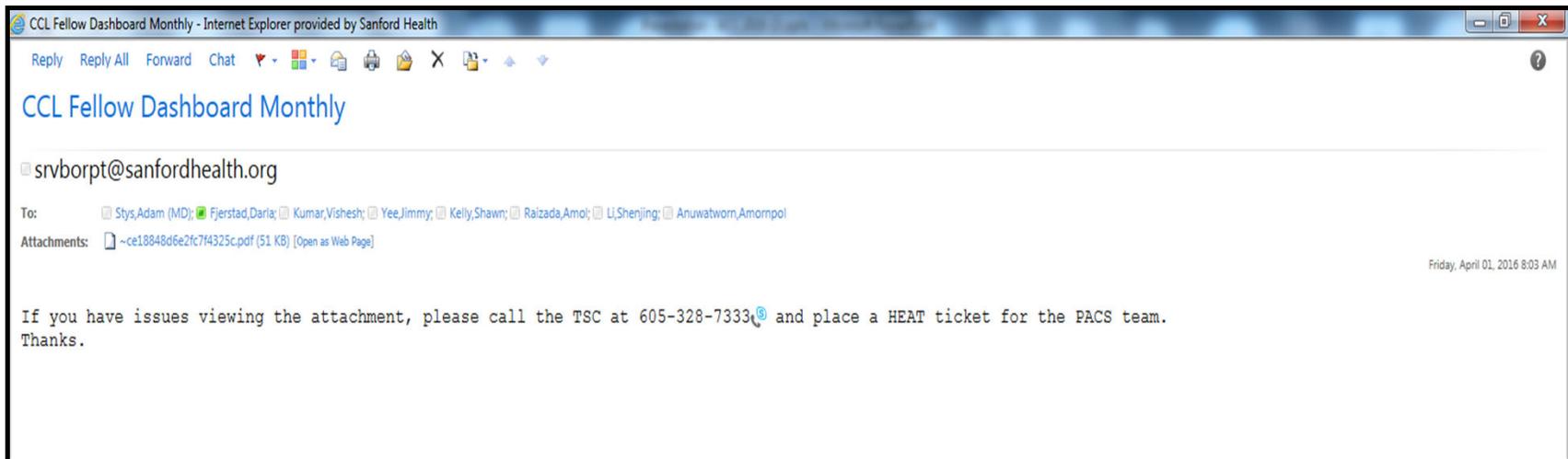


DASHBOARDS:

- Utilizing Business Objects, the Cardiology PACS Administrator schedules the report to email the monthly dashboards.
 - Dashboards are automatically generated and emailed on the first day of the month.
 - Dashboards are emailed to the recipients
 - the Program Director
 - the Program Administrator
 - the fellows
 - the applicable clinical managers



EMAIL OF MONTHLY DASHBOARD:



DASHBOARDS:

- It is important to note that the monthly dashboard does not contain any patient information, only the total number of procedures completed by the fellow during that month
- If patient information is needed, those reports can easily be generated by the PACS Administrator on a as-needed basis.

CONFIDENTIAL

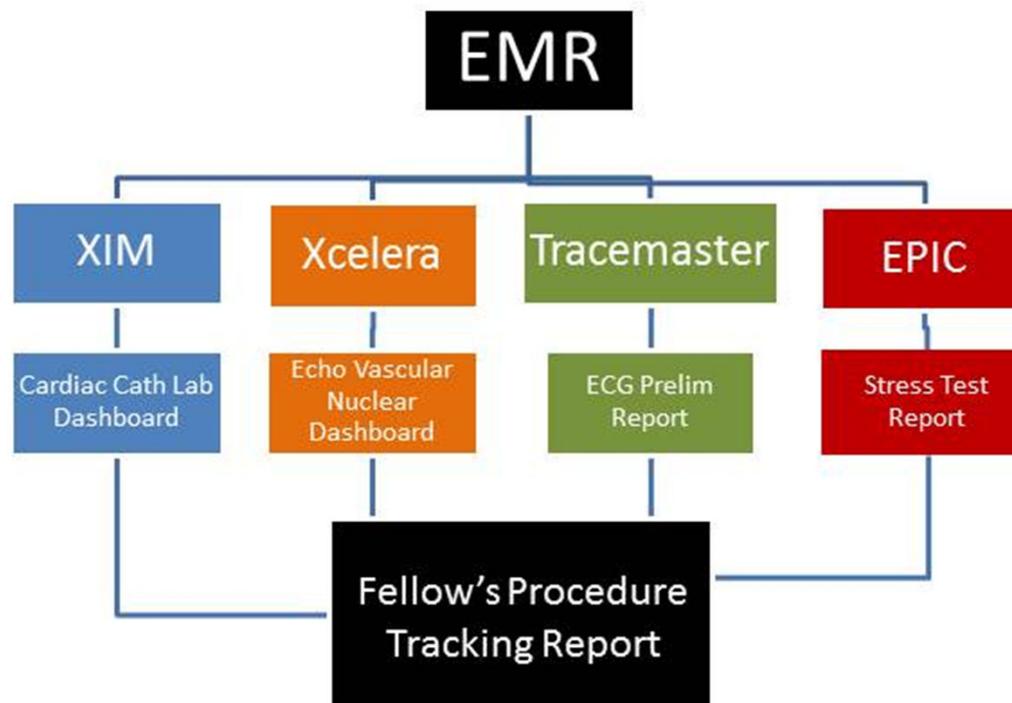
DATA INTERGRITY:

- The Program Administrator and the fellows review the number of procedures for data integrity.
- Some troubleshooting examples are:
 - Misspelled fellows last name
 - PACS corrected the last name
 - Fellow entering poor data
 - PACS defined the field choices
 - Cath lab entering poor data
 - Staff education was provided
 - Formula errors in the buckets
 - PACS defined the field choices
- The PACS Administrator can regenerate the monthly dashboard reports since the beginning of the fellowship program in July, 2012.



UTILIZING DATA FROM THE DASHBOARDS:

- The Program Administrator saves the monthly dashboard reports electronically.
- Then the Program Administrator inputs the totals of procedures shown on the monthly dashboard reports into a single Excel worksheet designated for each fellow named the Procedure Tracking Report.



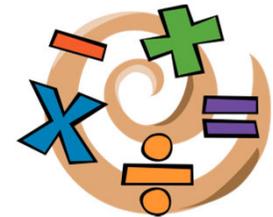
PROCEDURE TRACKING REPORT for an individual fellow

CARDIOVASCULAR DISEASE FELLOWSHIP PROGRAM - PROCEDURE TRACKING REPORT for Individual Fellow

FELLOW: James Jones, MD		TOTAL	TOTAL	TOTAL	TOTAL	ACGME	To Fulfill	Percentage	CVDFP
		2013-2014	2014-2015	2015-2016	2013-2016	REQUIRED	ACGME	Complete	GOALS
Stress Test (Sanford ONE REPORT)			736	93	829	50	-779	1658%	200 ***
Echo/Vascular/Nuclear	TTE Performed	104	31	7	142	75	-67	189%	100
	TTE Prelim Interpreted	475	440	88	1003	150	-853	669%	600
	TEE Performed	70	93	21	184				100
	TEE Prelim Interpreted	59	111	40	210				100
	Stress Echo Prelim Interpreted	6	28	24	58				30
	Nuclear Med Prelim Interpreted	194	287	72	553	100	-453	553%	300
	Vascular - Renal Prelim Interpreted	0	0	12	12				
	Vascular - Venous Prelim Interpreted	0	0	19	19				
	Vascular- Arterial Prelim Interpreted	0	0	11	11				
	Vascular - ABI Prelim Interpreted	0	0	5	5				
	Vascular - Carotid Prelim Interpreted	0	0	30	30				
	New Innovations	Stress ECHO (NI)	0	17	29	46			
Stress Test Perform (NI)		72	306	0	378				***
Holter Monitor (NI)		8	1	0	9	20	10	50%	20
Cardiac Event Recording (NI)		1	0	0	1				
Cardioversion (NI)		8	12	0	20	10	-10	200%	20 ***
Coronary CT Angiogram (NI)		7	36	9	52	30	-22	173%	30
Coronary CT Angiogram Performed (NI)									50
Cardiac MRI (NI)		1	0	0	1				10
MUGA (NI)		0	0	0	0				
Vascular - Renal Artery Doppler (NI)		0	3	0	3				
Vascular - Lower Extremity Venous Doppler (NI)		0	5	0	5				
Vascular - Upper Extremity Arterial Ultrasound (NI)		0	0	0	0				
Vascular- Lower Extremity Arterial Ultrasound (NI)		0	5	0	5				
Vascular - ABI (NI)		0	2	0	2				
Vascular - Carotid Ultrasound (NI)	0	18	0	18					
EKGs	EKG (Preliminary Interpretation) Clinic and Hospital	183	534	551	1268	3500	-6	100%	3500
	EKG Heart Screening Interpretations-SHH (sheets)	1094	409	735	2238				
Cardiac Diagnostic	Coronary Angiogram	313	460	334	1107	300	-807	369%	300
	Left Heart Cath	144	149	118	411				300
	Right Heart Cath	18	12	11	41				50
Cardiac Intervention	PCI	106	157	119	382				
	PFO	3	2	1	6				
	Larlet	0	0	0	0				
	TAVR	4	9	5	18				
	Valvuloplasty	1	0	0	1				
	Robotics	5	11	1	17				
	Pericardiocentesis	8	2	1	11				
Devices	PPM (programming and follow-up surveillance)	2	1	1	4				50
	ICD	2	0	0	2				
	TPM	12	13	7	32				10
	IABP	3	0	2	5				
IVUS /FFR	IVUS	5	12	7	24				
	FFR	7	11	16	34				
Peri-Pheral	Peripheral Diagnostic	1	5	6	12				
	Peripheral Intervention	2	2	3	7				
EP/Cardi-Overseion	EP Studies	8	19	3	30				
	Ablation	2	5	1	8				
	Cardioversion	14	6	0	20	10	-10	200%	20 ***
Peds/ Congenital	Cardio Angiogram	5	7	5	17				
	Left Heart Cath	0	0	1	1				
	Right Heart Cath	0	0	1	1				
	PFO PDA	1	0	1	2				

FORMULATION OF THE WORKSHEET:

- The worksheet is formulated so monthly figures are calculated to academic yearly totals and academic yearly totals are calculated to a grand total.
- The formulas tally the number of procedures needed to fulfill the ACGME requirements.
- The formulas tally the number of procedures needed to fulfill the program's goals.



CARDIOVASCULAR DISEASE FELLOWSHIP PROGRAM - PROCEDURE TRACKING REPORT for Individual Fellow									
FELLOW: James Jones, MD		TOTAL 2013-2014	TOTAL 2014-2015	TOTAL 2015-2016	TOTAL 2013-2016	ACGME REQUIRED	To Fulfill ACGME	Percentage Complete	CVDFP GOALS
Stress Test (Sanford ONE REPORT)			736	93	829	50	-779	1658%	200
Echo/Vascular/Nuclear	TTE Performed	104	31	7	142	75	-67	189%	100
	TTE Prelim Interpreted	475	440	88	1003	150	-853	669%	600
	TEE Performed	70	93	21	184				100
	TEE Prelim Interpreted	59	111	40	210				100
	Stress Echo Prelim Interpreted	6	28	24	58				30
	Nuclear Med Prelim Interpreted	194	287	72	553	100	-453	553%	300
	Vascular -Renal Prelim Interpreted	0	0	12	12				
	Vascular - Venous Prelim Interpreted	0	0	19	19				
	Vascular- Arterial Prelim Interpreted	0	0	11	11				
	Vascular - ABI Prelim Interpreted	0	0	5	5				

UTILIZATION OF THE PROCEDURE TRACKING REPORT:

- The Procedure Tracking Report is available to the Program Director and each fellow at any time to review and measure their progress in timely achieving their ACGME requirements and their program goals.
- The Procedure Tracking Report may be presented and reviewed:
 - by the Clinical Competency Committee at their semi-annual meeting, assuring their progress based on Milestones,
 - by the Program Director and fellow at their semi-annual review,
 - by the USD Sanford School of Medicine when a fellow is considered for Clinical Instructor Faculty appointment,
 - utilized by the fellow when applying for certification of a board exam
 - utilized by the fellow when applying for Interventional Cardiology position and/or future employment,
 - accompanied with the Summative Evaluation of a graduating fellow.



BENEFITS OF THE PROCEDURE TRACKING REPORT:

- The benefits of this Procedure Tracking Report are:
 - the information of the procedures is attainable, measurable and documented within each respective application
 - the information of the procedures is accurate and concise
 - The data entered needs to be accurate and concise in order for the reported data to be accurate
 - “Garbage in – garbage out”
 - there is compliance of HIPPA patient confidentiality
 - the patient information is available upon request
 - there is a considerable amount of time saved by the fellows in recording and tracking their procedures



FUTURE DIRECTION:

- It would be beneficial if the number of procedures shown in the Monthly Dashboards could be electronically transferred to the fellow's Procedure Tracking Report
 - This would eliminate the opportunity of any error in manual entry by the Program Administrator.
 - This would also alleviate the time consumed by the Program Administrator recording the number of procedures in the fellow's Procedure Tracking Report



FUTURE DIRECTION:

- There is no reporting available for some procedures so the fellows log the following procedures in New Innovations:
 - Cardiac Event Recording
 - Cardiac MRI
 - Cardioversion
 - CT Angiogram Performed
 - Holter Monitor
 - MUGA
 - Temporary Pacemaker
- In the near future, that data should be automated.



PROCEDURES LOGGED IN NEW INNOVATIONS

July 1, 2013 - Nov 11, 2015

Date	Fellow	Procedure
7/9/2014	Anuwatworn, Amornpol	Cardiac Event Recording
9/8/2015	Anuwatworn, Amornpol	Cardiac Event Recording
Cardiac Event Recording Count		2
7/29/2014	Anuwatworn, Amornpol	Cardioversion
7/29/2014	Anuwatworn, Amornpol	Cardioversion
9/2/2014	Anuwatworn, Amornpol	Cardioversion
9/16/2014	Anuwatworn, Amornpol	Cardioversion
9/19/2014	Anuwatworn, Amornpol	Cardioversion
10/23/2014	Anuwatworn, Amornpol	Cardioversion
9/10/2015	Anuwatworn, Amornpol	Cardioversion
9/10/2015	Anuwatworn, Amornpol	Cardioversion
9/21/2015	Anuwatworn, Amornpol	Cardioversion
9/28/2015	Anuwatworn, Amornpol	Cardioversion
9/30/2015	Anuwatworn, Amornpol	Cardioversion
10/2/2015	Anuwatworn, Amornpol	Cardioversion
10/16/2015	Anuwatworn, Amornpol	Cardioversion
Cardioversion Count		13
11/5/2015	Anuwatworn, Amornpol	CT Angiogram
7/9/2014	Anuwatworn, Amornpol	Holter Monitor
6/17/2015	Anuwatworn, Amornpol	Holter Monitor
6/18/2015	Anuwatworn, Amornpol	Holter Monitor
6/19/2015	Anuwatworn, Amornpol	Holter Monitor
6/19/2015	Anuwatworn, Amornpol	Holter Monitor
6/19/2015	Anuwatworn, Amornpol	Holter Monitor
6/19/2015	Anuwatworn, Amornpol	Holter Monitor
6/19/2015	Anuwatworn, Amornpol	Holter Monitor
6/19/2015	Anuwatworn, Amornpol	Holter Monitor
6/19/2015	Anuwatworn, Amornpol	Holter Monitor
6/22/2015	Anuwatworn, Amornpol	Holter Monitor
6/22/2015	Anuwatworn, Amornpol	Holter Monitor
6/24/2015	Anuwatworn, Amornpol	Holter Monitor
Holter Monitor Count		12



Thank you for your time and attention.

