STONY BROOK UNIVERSITY MEDICAL CENTER

Electronic Patient Record (EPR) and Public Reporting

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Stony Brook University Medical Center

MIT Information Quality Industry Symposium

July, 2010

OVERVIEW

Overview

- About Stony Brook University Medical Center (SBUMC)
- EPR Implementation at SBUMC
- Public Reporting
- EPR and Public Reporting

ABOUT US

Stony Brook University Medical Center

- Long Island, New York
- Region's only tertiary care center
  - 540 Acute Inpatient Beds
    - 31,600 discharges in 2008
  - Adult / Pediatric Emergency Dept.
    - 76,565 visits (FY 07-08)
  - 33 Hospital Based Clinics/Tests
  - Level 1 Trauma Center
  - Level 3 NICU, Regional Perinatal Center
  - Burn Center
  - Renal Transplant Program
  - Autologous/Allogenic Bone Marrow Transplant Program/Unit

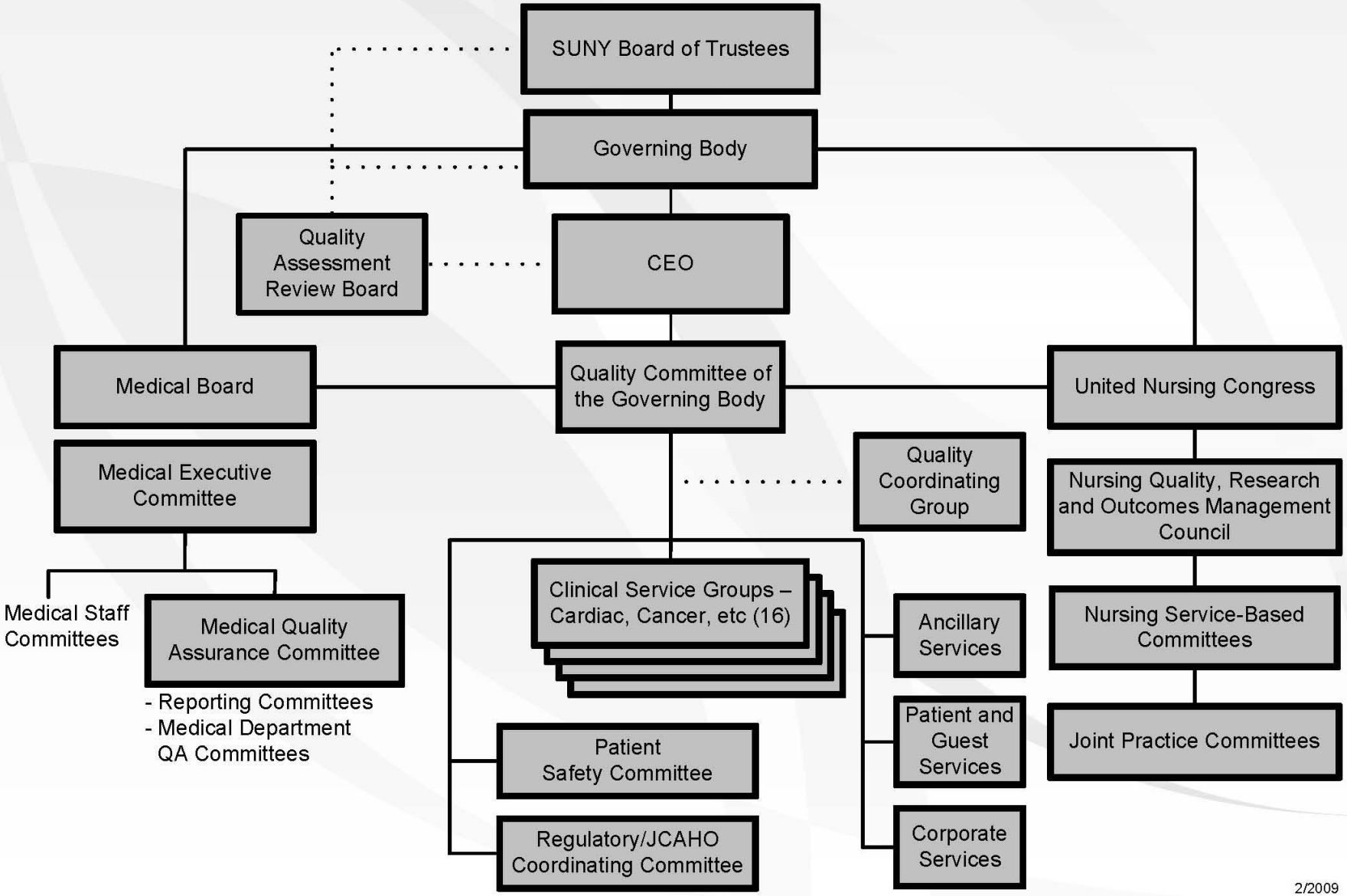
Stony Brook University Medical Center

- Hospital is part of the State University of New York at Stony Brook
- Affiliated with a major academic medical center, including medical, nursing, and health technology management schools
  - 50 accredited training programs with 447 residents
- 465 Full time, 506 Voluntary Physicians
- >4,800 Full-time Employees

Quality Management Structure

- Hospital strategic goals are designed to achieve the outcome of becoming a high reliability organization (HRO)
- The Quality Committee of the Governing Body sets quality improvement (QI) priorities aligned with strategic goals
  - High level oversight of quality priorities of the Medical Board, Patient Safety, Operating Room Committee, United Nursing Congress, and Clinical Service Groups
- The Quality Coordinating Group oversees QI efforts of Clinical Service Groups
- The Quality division facilitates QI activities for Clinical Service Groups and QI teams, and is also responsible for most public reporting requirements

Oversight of Quality
Quality Management/Governance Structure



2/2009

Strategic Plan

STONY BROOK UNIVERSITY HOSPITAL
STRATEGIC GOAL: HRO

INPUTS

- Mission
- Vision
- Values:

- Simple Rules of Work
- Patient & Family Centered Care

Organizational Drivers

QUALITY	RELATIONSHIPS	GREAT PLACE TO WORK	LONG TERM SUCCESS
UHC 5 Star Quality & Accountability	Thompson/Solucients's Top 100 Hospitals for Programs of Distinction	MAGNET AWARD Modern Healthcare's Best Place to Work in Healthcare Award	BALDRIGE AWARD Top 100 Hospitals for 5 consecutive years

OUTPUTS

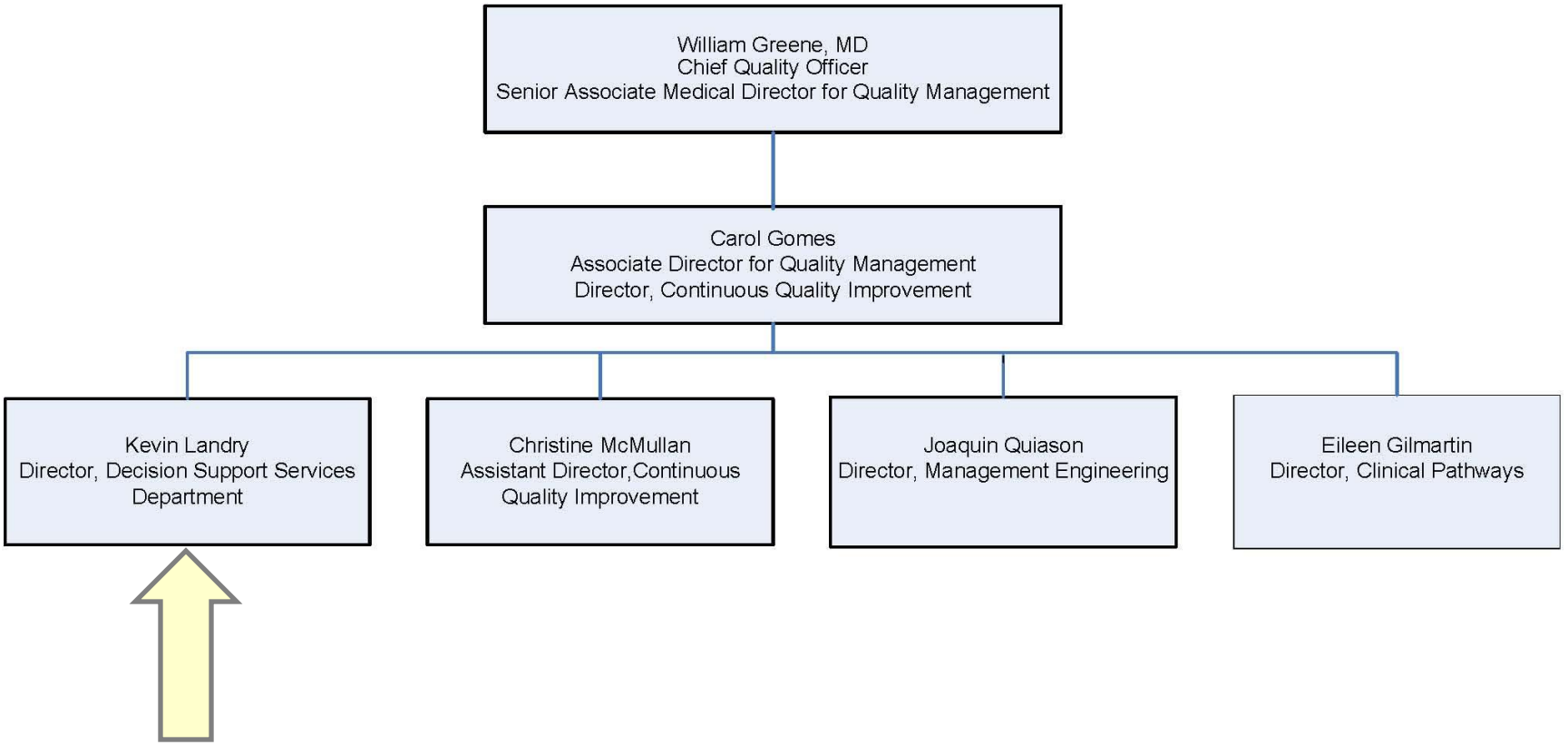
High Reliability Organization (Failure Free Operation) → World Class Organization

100% DEPLOYMENT

Decision Support Services

- Part of Quality division
- Holds much of the responsibility for public reporting
- Staff includes analysts and nursing staff working closely together
- Collaborates with Continuous Quality Improvement (CQI) department, participating in Clinical Service Group (CSG) meetings and CQI teams (e.g., door-to-balloon, heart failure)

Stony Brook University Hospital
Division of Quality Management
Organizational Chart



2/3/2009

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EPR IMPLEMENTATION AT SBUMC

EPR Implementation at SBUMC

- During the past few years we have implemented
  - Nursing documentation
  - Laboratory results and flowsheets
  - Medication administration documentation
  - Medication reconciliation
  - Intraoperative reporting
  - Emergency Department documentation
  - Computerized Physician Order Entry

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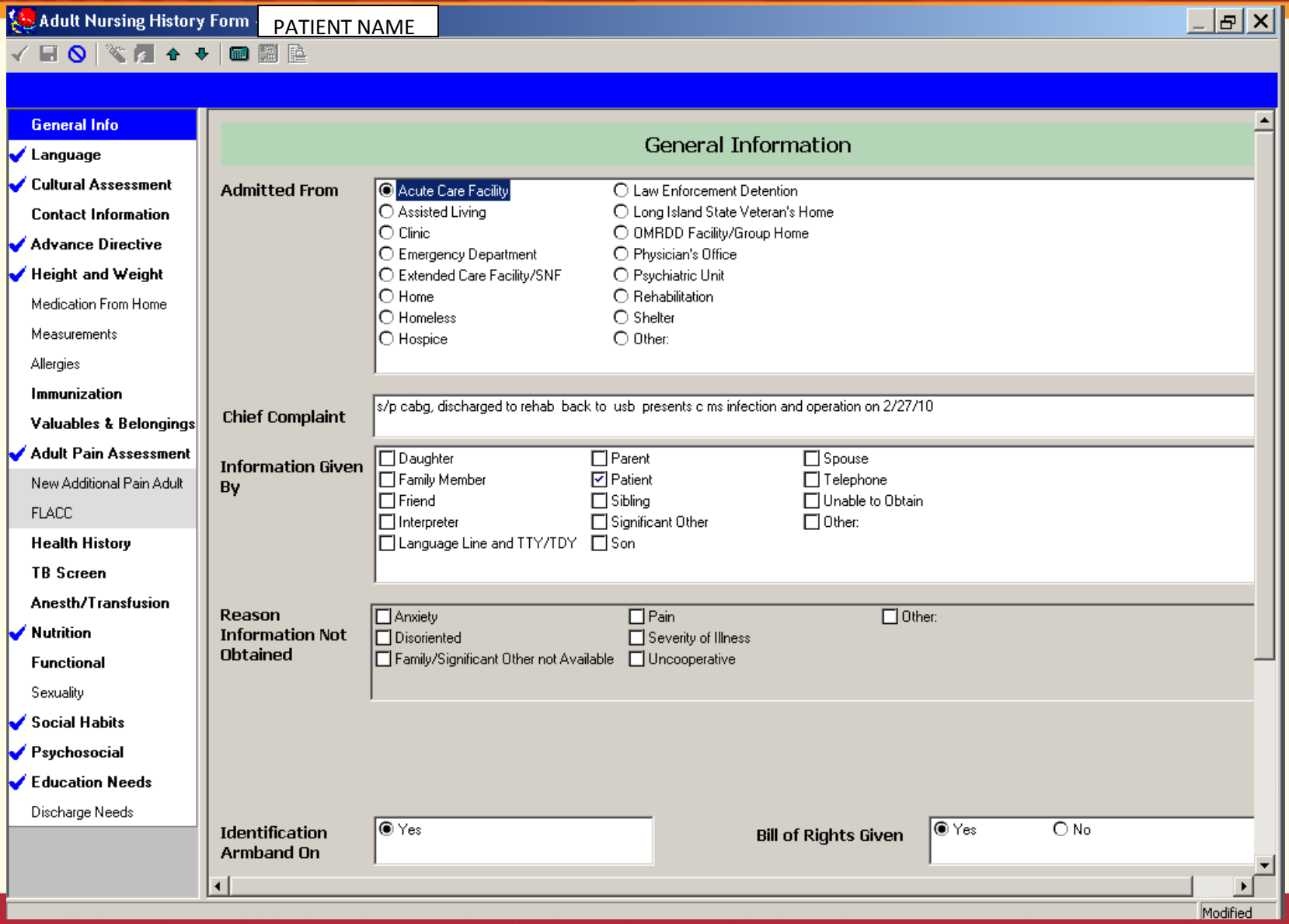
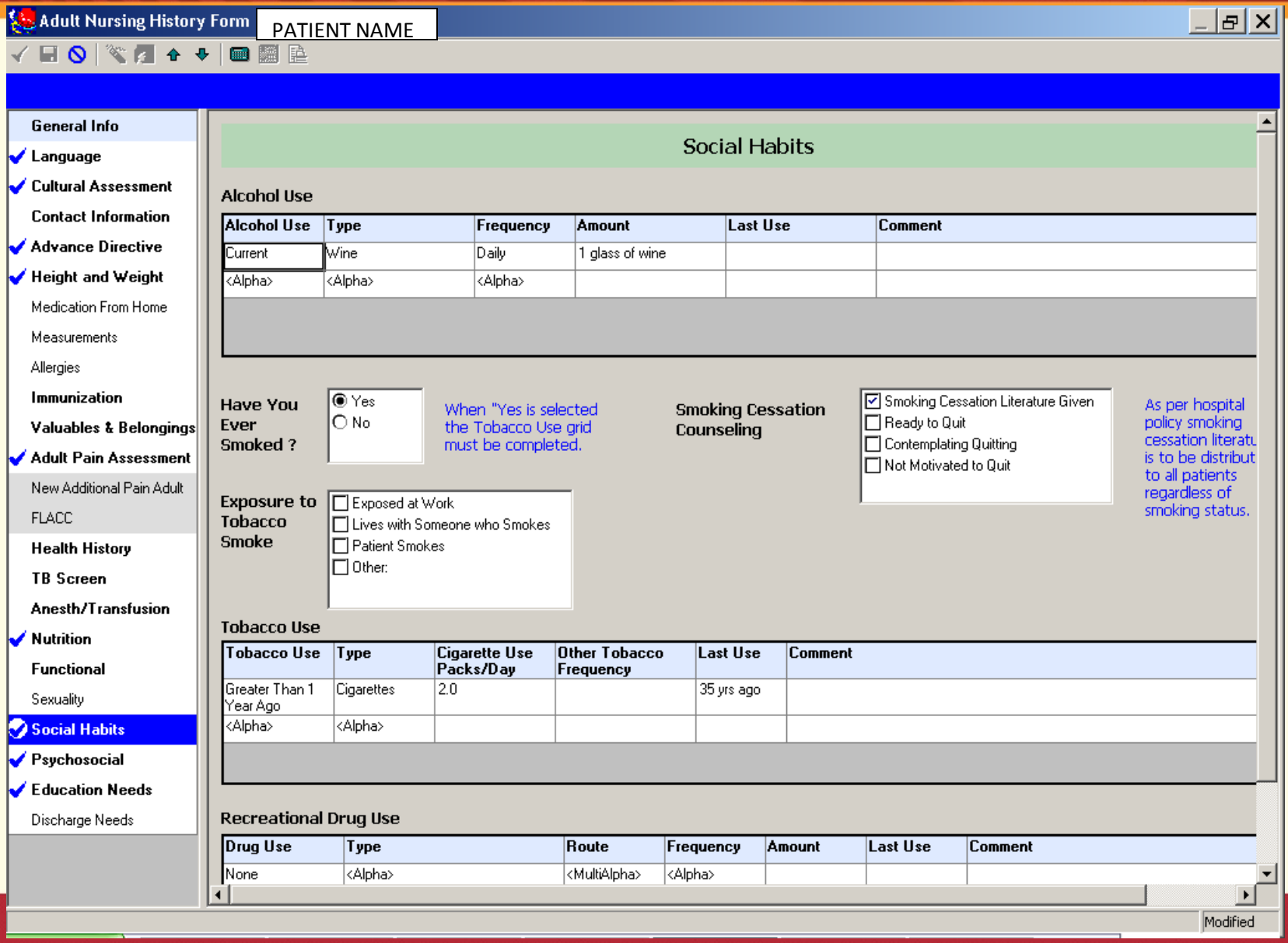


STONY BROOK UNIVERSITY MEDICAL CENTER



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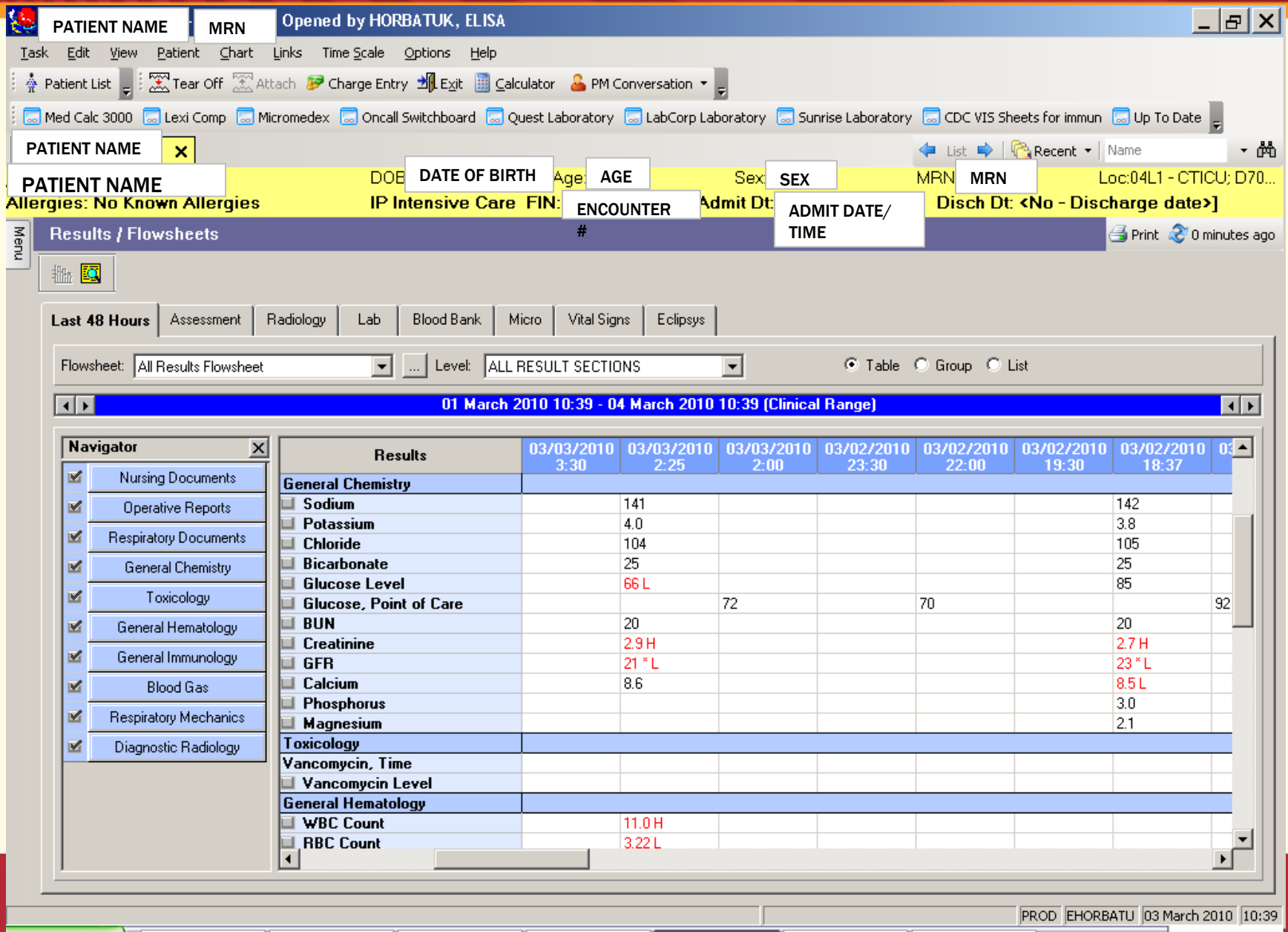
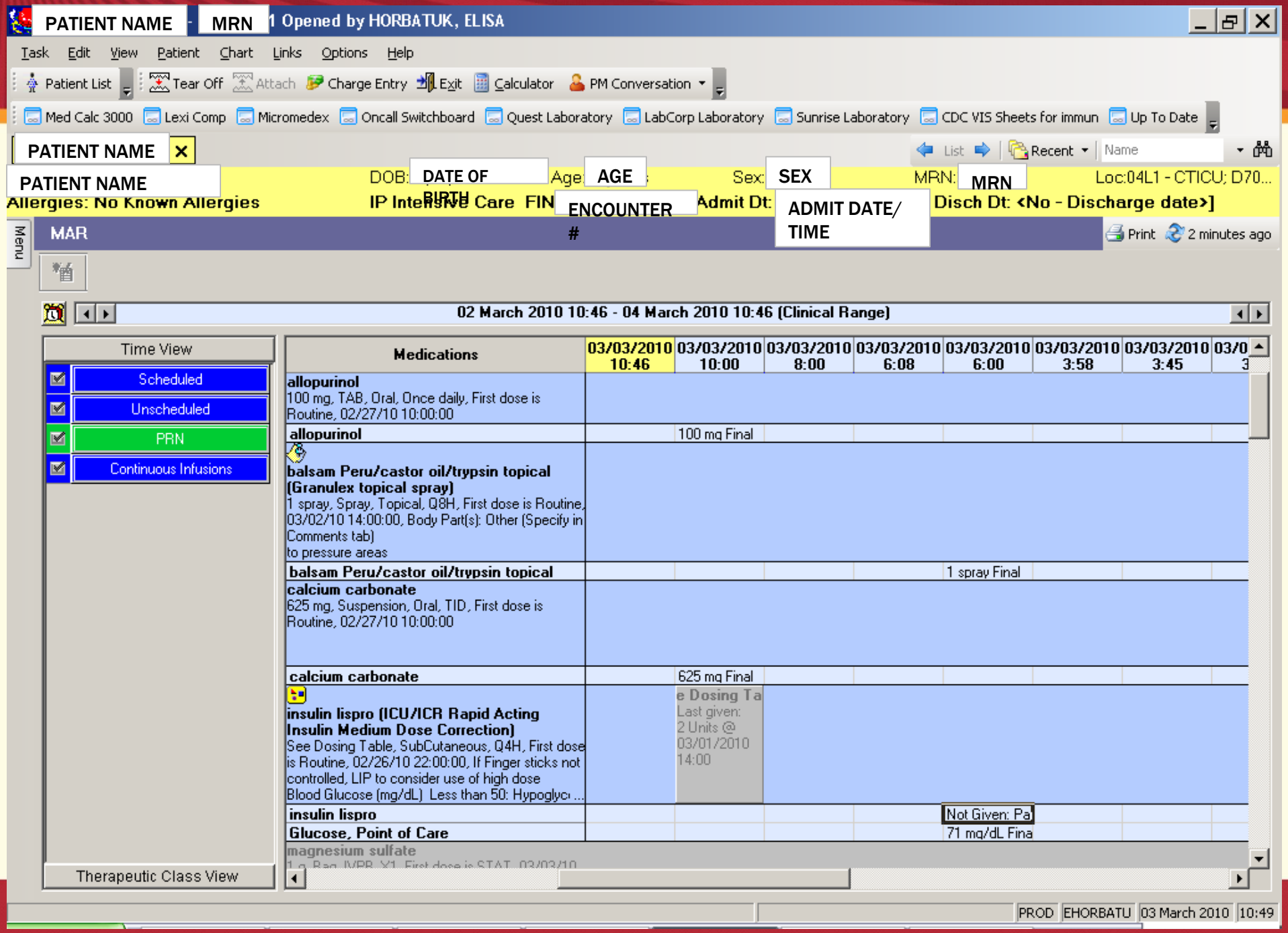


Results	03/03/2010 3:30	03/03/2010 2:25	03/03/2010 2:00	03/02/2010 23:30	03/02/2010 22:00	03/02/2010 19:30	03/02/2010 18:37	03
General Chemistry								
Sodium		141					142	
Potassium		4.0					3.8	
Chloride		104					105	
Bicarbonate		25					25	
Glucose Level		66 L					85	
Glucose, Point of Care			72		70			92
BUN		20					20	
Creatinine		2.9 H					2.7 H	
GFR		21 * L					23 * L	
Calcium		8.6					8.5 L	
Phosphorus							3.0	
Magnesium							2.1	
Toxicology								
Vancomycin, Time								
Vancomycin Level								
General Hematology								
WBC Count		11.0 H						
RBC Count		3.22 L						


PATIENT NAME
MRN
1 Opened by HORBATUK, ELISA
Task Edit View Patient Chart Links Options Help
Patient List Tear Off Attach Charge Entry Exit Calculator PM Conversation
Med Calc 3000 Lexi Comp Micromedex Oncall Switchboard Quest Laboratory LabCorp Laboratory Sunrise Laboratory CDC VIS Sheets for immun Up To Date
PATIENT NAME
PATIENT NAME
DOB: DATE OF BIRTH
Age: AGE
Sex: SEX
MRN: MRN
Loc:04L1 - CTICU; D70...
Allergies: No Known Allergies
IP Intensive Care FIN # ENCOUNTER
Admit Dt: ADMIT DATE/ TIME
Disch Dt: <No - Discharge date>]
MAR
Print
2 minutes ago
Menu
02 March 2010 10:46 - 04 March 2010 10:46 (Clinical Range)
Time View
Scheduled
Unscheduled
PRN
Continuous Infusions
Therapeutic Class View
Medications
03/03/2010 10:46
03/03/2010 10:00
03/03/2010 8:00
03/03/2010 6:08
03/03/2010 6:00
03/03/2010 3:58
03/03/2010 3:45
allopurinol
100 mg, TAB, Oral, Once daily, First dose is Routine, 02/27/10 10:00:00
allopurinol
100 mg Final
balsam Peru/castor oil/trypsin topical (Granulex topical spray)
1 spray, Spray, Topical, Q8H, First dose is Routine, 03/02/10 14:00:00, Body Part(s): Other (Specify in Comments tab)
to pressure areas
balsam Peru/castor oil/trypsin topical
1 spray Final
calcium carbonate
625 mg, Suspension, Oral, TID, First dose is Routine, 02/27/10 10:00:00
calcium carbonate
625 mg Final
insulin lispro (ICU/ICR Rapid Acting Insulin Medium Dose Correction)
See Dosing Table, SubCutaneous, Q4H, First dose is Routine, 02/26/10 22:00:00, If Finger sticks not controlled, LIP to consider use of high dose
Blood Glucose (mg/dL) Less than 50: Hypoglyc ...
e Dosing Ta
Last given:
2 Units @
03/01/2010
14:00
insulin lispro
Not Given: Pa
Glucose, Point of Care
71 mg/dL Fina
magnesium sulfate
PROD EHORBATU 03 March 2010 10:49

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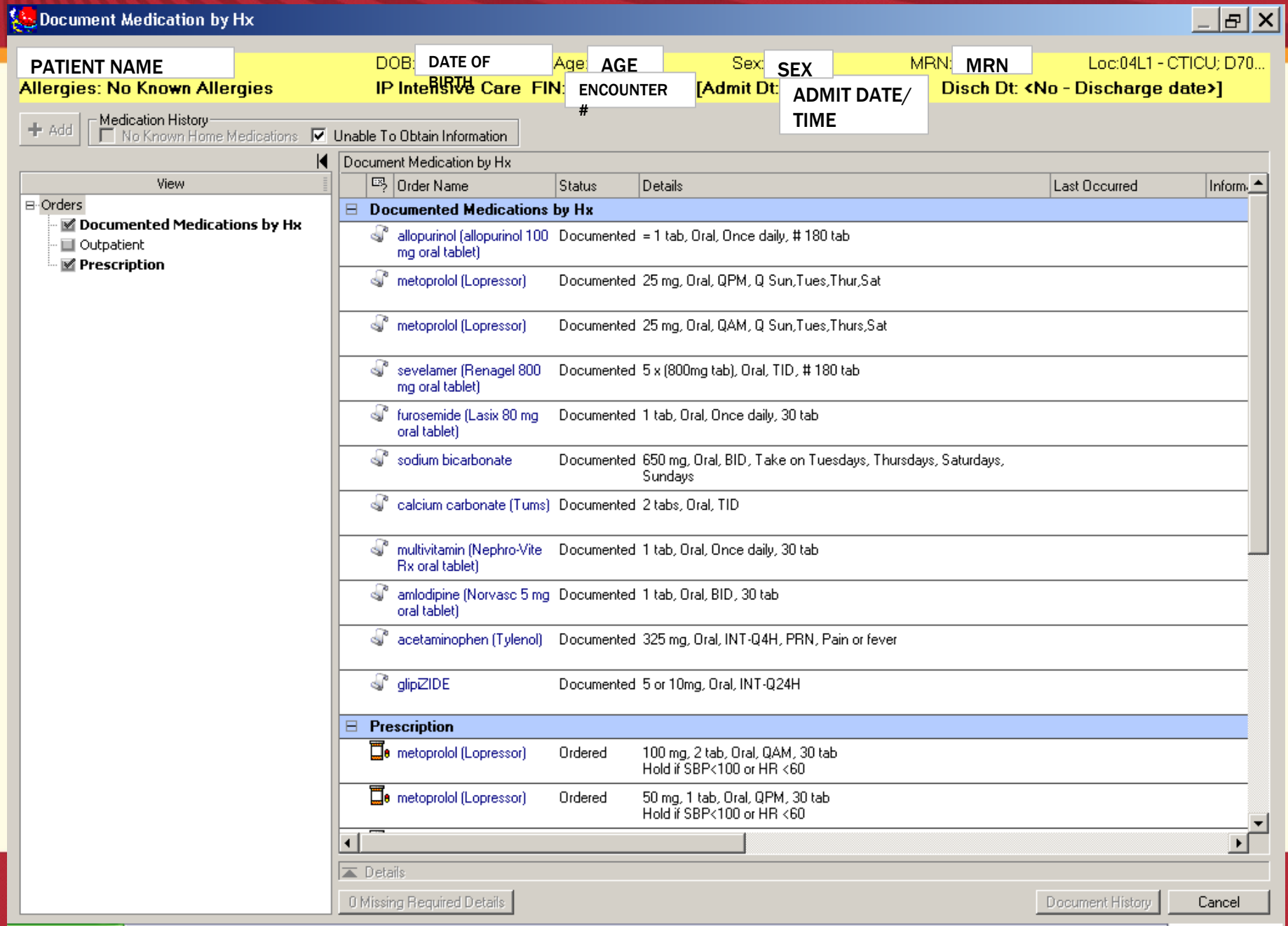

STONY BROOK UNIVERSITY MEDICAL CENTER

Not Official Copy: Intraoperative Report
Flowsheet Date: 02 March 2010 17:52
Result status: Final
Result title: OR Nursing Record
Performed by: NURSING STAFF on 02 March 2010 18:07
Encounter info: ENCOUNTER #, Stony Brook University Hospital, IP Intensive Care ADMIT DATE

* Final Report *

OR Nursing Record (Verified)

OR Nursing Record Summary

Primary Physician:
Case Number:
Finalized Date/Time:
Pt Name:
D.O.B./Sex:
Med Rec #:
Physician:
Financial #:
Pt Type:
Room/Bed:
Admit/Disch:
Institution: }}{B}Stony Brook }}
{B}University Hospital
{B}Main Operating Room

STONY BROOK UNIVERSITY MEDICAL CENTER

MOR General Case Data

	Entry 1		
Case Information			
OR	M OR 15	**Case Level**	Elective
ASA Class	4	**Wound Class**	Infected
Specialty	Plastic	**Sub Speciality**	Plastic
Exclude From Average	n/a		
Diagnosis			
Preop Diagnosis	sternal wound	**Postop Same As Preop**	Yes
Postop Diagnosis	sternal wound		
Patient States Pregnancy?	N/A	**Is this a Cancer Patient?**	No
Last Modified By:	NURSING STAFF 03/02/10 17:12:22		

MOR Case Attendance

	Entry 1	Entry 2	Entry 3
Case Attendee	SURGEON	ANESTHESIOLOGIST	NURSING STAFF
Role Performed	Surgical Attending	Anesthesiology Resident	Circulating Nurse-1
Relief Reason	n/a	n/a	n/a
Time In	03/02/10 16:38:00	03/02/10 16:38:00	03/02/10 16:30:00
Time Out	03/02/10 18:06:00	03/02/10 18:06:00	03/02/10 18:06:00
Procedure	irrigation & debridement sternum	irrigation & debridement sternum	irrigation & debridement sternum
Last Modified By:	NURSING STAFF 03/02/10 18:06:50	NURSING STAFF 03/02/10 18:06:50	NURSING STAFF 03/02/10 18:06:50

	Entry 4	Entry 5	Entry 6
Case Attendee	NURSING STAFF	OR TECHNICIAN	ANESTHESIOLOGIST
Role Performed	Circulating Nurse-1	O.R. Technician-1	Attending

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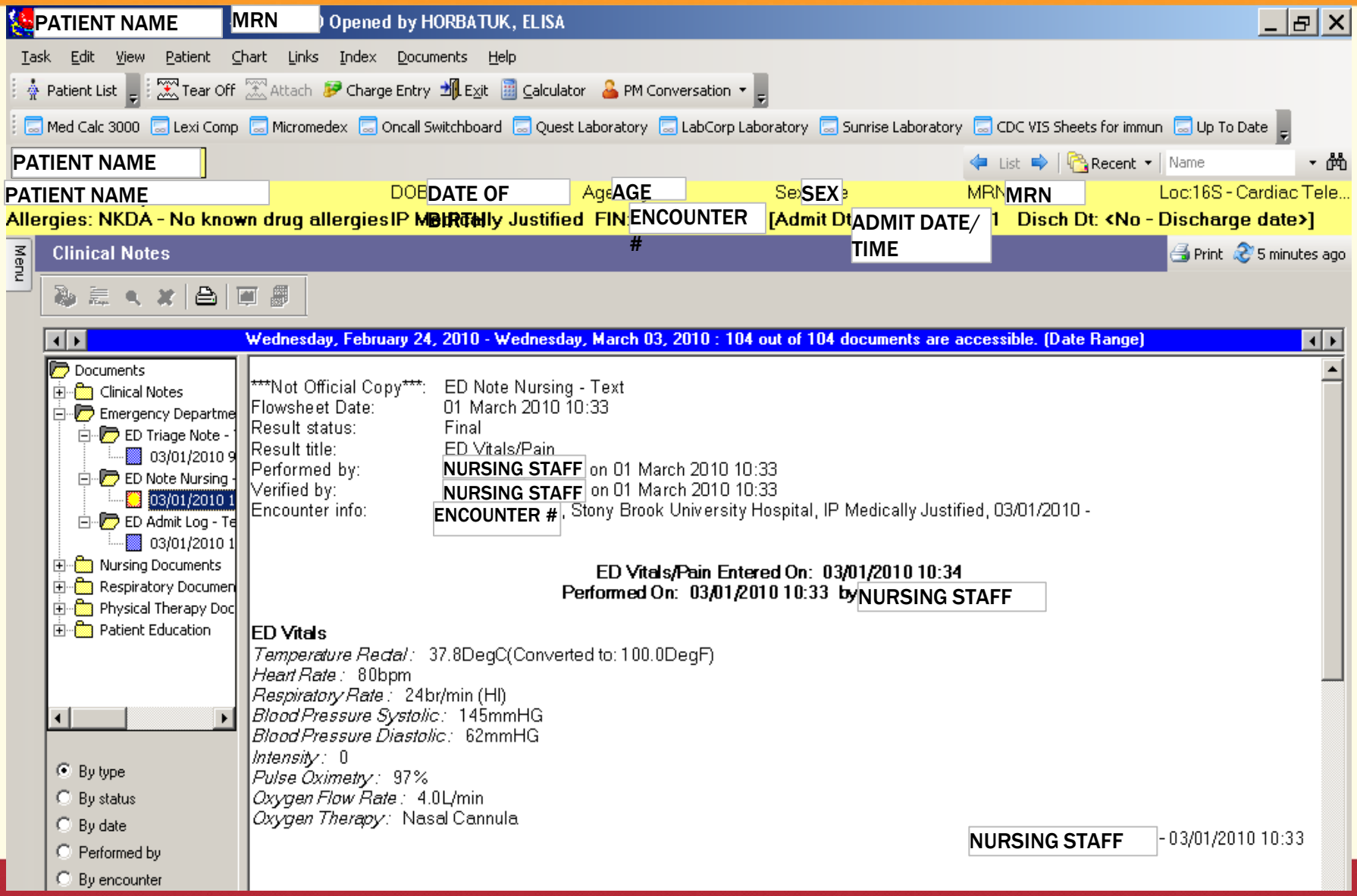

STONY BROOK UNIVERSITY MEDICAL CENTER

Patient Name: TEST, NORAIP2 Date: 02/16/2010 15:52 15:52

Careset: ED Pneumonia (Full Careset)

Component	Order Details
Diagnostic Tests	
Physician Reminder: Be sure that Blood Cultures have been ordered and drawn prior to prescribing antibiotics. If they have already been ordered, uncheck them below	
☐ CBC Differential	
☐ Chem 8, ED Whole Blood Panel	
☑ Blood Culture	Routine, Collected, X1
☑ Blood Culture	Routine, Collected, X1
☑ Lactic Acid	STAT, Collected, X1
☐ Blood Gas - Arterial	
☐ Legionella Pneumophila Ab	
☐ Urinalysis	
☐ Sputum Culture w/ Gram Stain	
☐ Chest Routine (P-A/A-P and Lateral) (Chest PA and Lateral)	
Nursing Orders	
☑ Pulse Oximetry Continuous	
☑ Temperature	Rectal, X1, Other (Please Specify in Comments)
☑ Peripheral IV Insert	X1
☐ Urinary Catheter In-Dwelling Insert	X1
Routine CAP (Non-ICU Patients) Antimicrobial Treatment	
Recommended Regimen: 1. Ceftriaxone PLUS Azithromycin 2. Ceftriaxone PLUS Doxycycline 3. Moxifloxacin for patients with B-lactam Allergy	
☐ cefTRIAXone	1 g, INJ, IVPB, X1, First dose is STAT, T;N
☐ azithromycin	500 mg, INJ, IVPB, X1, First dose is STAT, T;N
☐ moxifloxacin	400 mg, INJ, IVPB, X1, First dose is STAT, T;N
☐ doxycycline	100 mg, CAP, Oral, X1, First dose is STAT, T;N
CAP (ICU Patients) Antimicrobial Treatment	
Recommended Regimen: 1. Ceftriaxone PLUS [Azithromycin or Moxifloxacin] 2. Moxifloxacin PLUS Clindamycin for B-lactam Allergy	
☐ cefTRIAXone	1 g, INJ, IVPB, X1, First dose is STAT, T;N
☐ azithromycin	500 mg, INJ, IVPB, X1, First dose is STAT, T;N
☐ moxifloxacin	400 mg, INJ, IVPB, X1, First dose is STAT, T;N
☐ clindamycin	600 mg, INJ, IVPB, X1, First dose is STAT, T;N
CAP with Pseudomonal Risk (ALL Patients) Antimicrobial Treatment	

STONY BROOK UNIVERSITY MEDICAL CENTER

Patient Name: TEST, NORAIP2 Date: 02/16/2010 15:52 15:52

Careset: ED Pneumonia (Full Careset)

Component	Order Details
Recommended Regimen: 1. [Pip/Tazo or Cefepime] PLUS Ciprofloxacin 2. [Pip/Tazo or Cefepime] PLUS Gentamicin PLUS Moxifloxacin 3. [Pip/Tazo or Cefepime] PLUS Gentamicin PLUS Azithromycin 4. Aztreonam PLUS Moxifloxacin PLUS Gentamicin for B-lactam allergy	
☐ cefePIME	2 g, INJ, IVPB, X1, First dose is STAT
☐ piperacillin-tazobactam	4.5 g, INJ, IVPB, X1, First dose is STAT
☐ ciprofloxacin	400 mg, Bag, IVPB, X1, First dose is STAT
☐ azithromycin	500 mg, INJ, IVPB, X1, First dose is STAT
☐ moxifloxacin	400 mg, INJ, IVPB, X1, First dose is STAT
☐ clindamycin	600 mg, INJ, IVPB, X1, First dose is STAT
☐ gentamicin	2 mg/kg, INJ, IVPB, X1, First dose is STAT
☐ aztreonam	1 g, INJ, IVPB, X1, First dose is STAT
Aspiration Pneumonia Antimicrobial Treatment	
Recommended Regimen: 1. Clindamycin 2. Pip/Tazo	
☐ clindamycin	600 mg, INJ, IVPB, X1, First dose is STAT, T;N
☐ piperacillin-tazobactam	4.5 g, INJ, IVPB, X1, First dose is STAT, T;N
Analgesics	
☐ acetaminophen	650 mg, TAB, Oral, X1, First dose is STAT, T;N
☐ acetaminophen	975 mg, TAB, Oral, X1, First dose is STAT, T;N
Bronchodilators	
☐ albuterol inhalation (albuterol nebulizer)	2.5 mg, SOLN, NEB, Q5MIN, First dose is STAT, T;N, 3 doses
☐ ipratropium inhalation (ipratropium nebulizer)	0.5 mg, SOLN, NEB, Q5MIN, First dose is STAT, T;N, 3 doses
Respiratory	
☑ Adult Nasal Cannula	2 L/min Oxygen Flow Rate, Special Instructions: maintain oxygen saturation above 92%
☐ Oxygen Venti Mask	FiO2 Percent: 40
☐ Oxygen Non-Rebreather Mask	

EPR Implementation at SBUMC

- Discharge summaries, operative reports, and certain test results are also available in the EPR as free text imported from other systems

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PATIENT NAME - MRN Opened by HORBATUK, ELISA

Task Edit View Patient Chart Links Index Documents Help

Patient List | Tear Off | Attach | Charge Entry | Exit | Calculator | PM Conversation

Med Calc 3000 | Lexi Comp | Micromedex | Oncall Switchboard | Quest Laboratory | LabCorp Laboratory | Sunrise Laboratory | CDC VIS Sheets for immun | Up To Date

PATIENT NAME

List | Recent | Name

PATIENT NAME DOB DATE OF BIRTH Age AGE Sex SEX MRN MRN Loc:16N - Medicine; P0...

Allergies: Zosyn, Lasix IP Semi-Private FIN: ENCOUNTER # [Admit Dt: ADMIT DATE/ TIME Disch Dt DISCHARGE DATE/ TIME

Menu

Clinical Notes

1 minutes ago

Thursday, April 09, 2009 - Wednesday, July 29, 2009 : 4091 out of 4091 documents are accessible. (Date Range)

- Documents
  - Clinical Notes
  - Discharge Documents
    - Discharge Summa
      - 07/29/2009 0
  - Emergency Departme
  - Nursing Documents
  - Operative Reports
  - Respiratory Documen
  - Patient Education

By type
By status
By date
Performed by
By encounter

Not Official Copy: Discharge Summary
Flowsheet Date: 29 July 2009 0:00
Result status: Final
Result title: DS
Performed by: CLINICAL STAFF on 29 July 2009 0:00
Encounter info: ENCOUNTER # Stony Brook University Hospital, IP Semi-Private, ADMIT-DISCHARGE DATES

* Final Report *

DS

DISCHARGE SUMMARY

PROVISIONAL DIAGNOSIS: Sepsis, urinary tract infection and hypoxemia.

BRIEF HISTORY AND PHYSICAL: This is an 82-year-old white female with a past medical history of osteoarthritis, hypertension, nephrolithiasis, is status post lithotripsy. The patient presented to Stony Brook University Medical Center ER on 04/09/2009 with altered mental status, shaking chills, tachycardia and was treated with adenosine for SVT, also with fluids for dehydration and empiric antibiotics consisting of Zosyn, cefepime and vancomycin as this patient was felt to be septic. A CAT scan demonstrated periportal edema, bilateral perinephritic fluid and pericardial effusion and marked cardiomegaly. An urinalysis demonstrated nitrites and leukocyte esterase positive. The patient was intubated electively and placed in the medical intensive care unit.

PROD EHORBATU 03 March 2010 15:09

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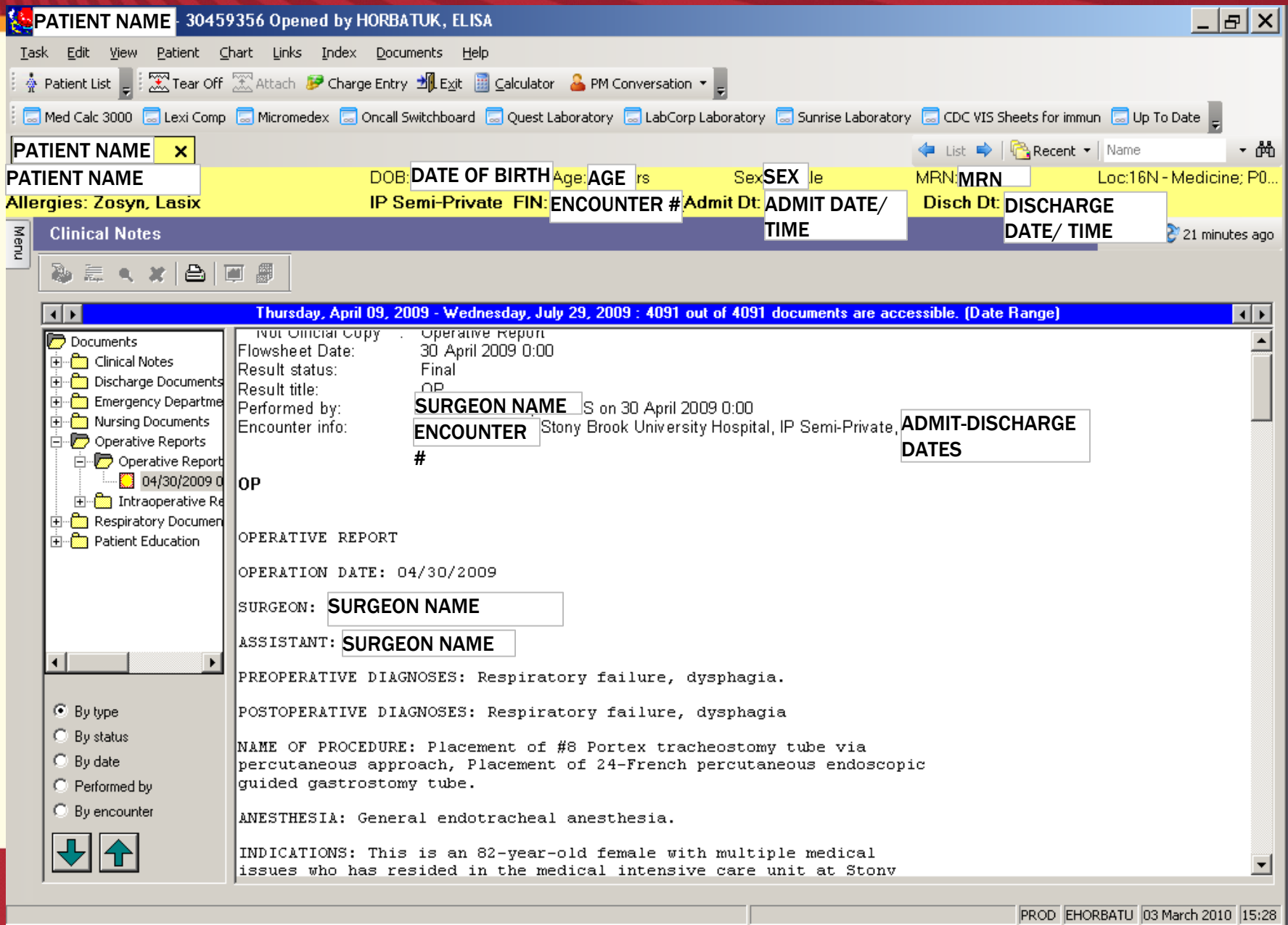

STONY BROOK UNIVERSITY

Document Viewer - PATIENT NAME - MRN

Not Official Copy: Chest,AP Portable
Flowsheet Date: 09 April 2009 13:07
Result status: Final
Result title: CHEST,AP PORTABLE
Performed by: 080945 -UNKNOWN, PERSONNEL on 09 April 2009 13:07
Verified by: Contributor_system, RADIOLOGY on 09 April 2009 13:07
Encounter info: ENCOUNTER # Stony Brook University Hospital, IP Semi-Private, ADMIT-DISCHARGE DATES

* Final Report *

CHEST,AP PORTABLE
This document has an image

CHEST,AP PORTABLE
"PLEASE BE AWARE: This exam will display along with a prior exam (if available) for comparison that may or may not be related to this exam. Thank you."
Single AP view the chest.

There are no prior studies available for comparison.

Findings:

The cardiac silhouette is enlarged. The aorta is enlarged with deviation of the trachea to the right suggesting aneurysmal dilatation.

There is no focal consolidation, vascular congestion or pleural effusion. Advanced degenerative changes are seen at the bilateral glenohumeral joints.

Impression:

1. Cardiomegaly.
2. Enlarged aortic silhouette with the region of the trachea to the right suggesting aneurysmal dilatation.
3. Clear lungs.

Resident Radiologist: RADIOLOGIST NAME
Attending Radiologist: RADIOLOGIST NAME

EPR Implementation at SBUMC

- Scheduled for implementation:
  - Discharge process
  - Physician documentation
  - ICU flowsheets

EPR Implementation at SBUMC – Role of Decision Support Services (DSS)

- Prior to the most recent phase of implementation, DSS staff assessed all required data elements for public reporting, flagging elements captured on paper tools that were scheduled for replacement by electronic tools
  - For example, contraindications to medications were often captured on paper order sets.
  - Since paper order sets were soon to be replaced by CPOE, it was imperative that CPOE incorporate a method for capturing contraindications

STONY BROOK UNIVERSITY MEDICAL CENTER

Electronic Patient Record
Core Measure Data Elements
Acute Myocardial Infarction

Data Element	Currently Available in EPR?	If Currently Available in Cerner				If Not Currently Available in Cerner			
		Location	Revisions needed?	Considerations	Notes	Planned?	Immediate need?*	Potential Location	Notes
Contraindication to Beta Blocker on Arrival	No					No	Yes - CPOE will replace all paper physician orders (non-discharge) by Fall 2007.	CPOE/ EMAR	Checklist item on AMI orders. If not selected, "contra" field becomes enabled. Entered to EMAR at time of administration.
Contraindication to Both ACEI and ARB at Discharge	No					No	No	Power Form: Discharge Orders	Field will be enabled by lack of selection of either ACEI or ARB on AMI discharge orders. Discharge orders may not be completed without this field, if applicable.
Discharge Date	Yes - Cerner, Siemens	Visit List	No	N/A	Entered by?				
Discharge Status	Yes - Siemens Only (similar data element in Cerner but options not as inclusive)	Nursing Assessment	Yes	Process and workflow evaluation needed. May need to consider an alternate source.	Entered by?				
Non-Primary PCI	Yes - Sensis Cath Lab reports					No	No	?	Sensis Cath Lab reports to be interfaced with Power Charts?
Race	Yes - Cerner, Siemens	Patient Demographics	No	N/A	Entered by Admitting				

* An immediate need exists if the current hard copy source for the data element will be replaced in the near future by an electronic source.

EPR Implementation at SBUMC – Role of Decision Support Services (DSS)

- As electronic copies of order sets became available, DSS staff reviewed the order sets to identify data elements that would potentially go uncaptured

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MEDICAL CENTER

PowerPlan Builds Review

Order Sets Affecting Core Measure Data Capture

Order Set Name	Reviewer Initials	Status	Notes
Acute Coronary Syndrome Admission PowerPlan	CI/LAW	Reviewed in Cerner Build - Needs Edits	1.No order sets found NSTEMI/STEMI 2. Currently SUGGESTS to order ASA, BB, ACE/ARB,etc.--doesn't clearly indicate that these must be ordered and if not you must provide a contraindication. (should clearly state this is a requirement for CMS/JCACHO) 3. There is no space provided to write contraindications and has no prompts to be alerted. 4.found to have too much reading required for MD's. An example was the suggestive source or the recent documentation re:studies of uses of medication. 5. There was no space provided to write in for delay of PCI (requirement for CMS/JCACHO)
Cardiothoracic Surgery Post-Operative PowerPlan (Adult)	LCW/SV	Reviewed in Cerner Build - Needs Edits	No where to document contra's to betablockers (LCW). Remove SCIP Hysterectomy Surgery Quality Measures Subphase (JM/SV). See table below for SCIP compliant antibiotic adminstration (JM/SV).
Heart Failure PowerPlan (Adult)	LCW	Reviewed in Cerner Build - Needs Edits	No where to document contra's to ace, arb or Betablockers under the medication section; on the original paper on page one, there is a prompt to document the EF--THIS DOES NOT APPEAR IN THE ELECTRONIC VERSION
Pneumonia PowerPlan (Adult)	jm	Reviewed in Cerner Build - OK	all the elements for the core measures are present however if the plan is not selected in the ED then cultures before ABX will be missed.

EPR Implementation at SBUMC – Role of Decision Support Services (DSS)

- Now that implementation of a public reporting application is planned, DSS is working with Clinical Informatics (CI) and Information Technology (IT) to identify any gaps in data capture

PUBLIC REPORTING

Public Reporting

- The Joint Commission(TJC)/Centers for Medicare and Medicaid Services (CMS) Core Measures (inpatient and outpatient)
- New York State Department of Health (NYSDOH requirements)
- Professional Society Registries

Public Reporting

- Current State
  - Primarily retroactive, manual abstraction
  - Use of applications such as Lumedx Apollo and Cerner PowerInsight
    - Different registry modules in Apollo can share data fields
    - Data elements such as laboratory results and height/weight can be queried from our EPR and imported to Apollo

EPR AND PUBLIC REPORTING

Ways EPR Facilitates Data Capture

- More data can be captured at the point of care
- Inclusion of queriable data fields in EPR reduces burden of chart abstraction and decreases human error from abstraction and entry
- Automatic feeds from EPR components comprising the legal medical record import required data elements to reporting applications
- Real-time feedback for certain elements from our vendor's public reporting application or from queries

Maximizing Benefits to Public Reporting

- A cooperative effort among DSS, Clinical Informatics, and Information Technology staff has begun to translate core measure specifications into query specifications to extract required data elements from the EPR, replacing manual abstraction
- This process began with the upcoming Emergency Department core measures, as these contain the most data elements amenable to electronic data abstraction at SBUMC.
- The process has continued with all inpatient core measures

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Data Element in Specifications	Field name in merged file	Source	Notes
	ENCOUNTER	Both	Need for merging purposes
	MRN	Both	Need for merging purposes
Arrival Date	INPATIENTARRIVEDT	Cerner	
Arrival Time	INPATIENTARRIVETM	Cerner	
Arrival Date	OUTPATIENTARRIVEDT	Cerner	
Arrival Time	OUTPATIENTARRIVETM	Cerner	These fields are split by Inpatient and Outpatient just because of the collaborative requirements for separate fields. The source is the same, ED Arrival Date/Time. As we discussed, there are multiple potential sources for ED Arrival Date/Time*. Note that even after this field is electronically available for all cases, ED and CQI staff will still need to review manually, as occasionally earlier dates/times are documented on paper tools.
Admission Date; Decision To Admit Date	ADMITDATE	Cerner	Date of physician order to admit.
Admission Time; Decision To Admit Time	ADMITTIME	Cerner	Time of physician order to admit.
Chest X-Ray Order Date	ORIGORDERDT	Cerner	Will be blank for patients who did not receive a chest x-ray
Chest X-Ray Order Time	ORIGORDERTM	Cerner	Will be blank for patients who did not receive a chest x-ray
Chest X-Ray Exam Date	CLINICALEVENTPERFORMEDDT	Cerner	Will be blank for patients who did not receive a chest x-ray
Chest X-Ray Exam Time	CLINICALEVENTPERFORMEDTM	Cerner	Will be blank for patients who did not receive a chest x-ray
	INP/OUTP	Cerner	Flag indicating whether patient was admitted as inpatient or discharged from ED
Pain Medication Administration Date	*Not currently included*	Cerner	The earliest date that any pain medication (based on list sent separately) is administered (not ordered!) to the patient
Pain Medication Administration Time	*Not currently included*	Cerner	The earliest time that any pain medication (based on list sent separately) is administered (not ordered!) to the patient
Birthdate	PT BIRTH DT	Siemens	Not sent to collaborative; used for age-based exclusion-criteria. May now be possible to obtain from Cerner.
ICD-9-CM Principal diagnosis Code	DF1 DX CODE	Siemens	Principal *final* diganosis code. May now be possible to obtain from Cerner.
ED Departure Date	ERDISCHARGEDT	Siemens	Not sent to collaborative; used for age calculation. May now be possible to obtain from Cerner.
ED Departure Time	ERDISCHARGETM	Siemens	No longer needed
	INADMITDISCHARGEDT	Siemens	Not sent to collaborative; used for LOS calculation. May now be possible to obtain from Cerner.
ED Departure Date	PROCESS DT IP	Siemens	Date patient transferred from 04PT to inpatient unit. May now be possible to obtain from Cerner
ED Departure Time	PROCESS TM IP	Siemens	Time patient transferred from 04PT to inpatient unit. May now be possible to obtain from Cerner
Admission Date	PROCESS DT 04PT	Siemens	Originally used when date of admission order was not available electronically. Also used for LOS and age calculation. Can be replaced by ADMITDATE from Cerner.
Admission Time	PROCESS TM 04PT	Siemens	Originally used when time of admission order was not available electronically. Can be replaced by ADMITTIME from Cerner.
Observation - we don't have this	N/A	N/A	All patients will be set for no Observation, since we do not have an Observation Unit at this time
Revenue Codes	N/A	N/A	Not used by collaborative
Discharge Status	N/A	N/A	Not used by collaborative

* These potential sources include the following:
"ED Triage Time" (appearing on the ED Patient Education Sheet)
"ED Triage Time" (appearing on the ED Triage Form)
The earliest "Performed" time on all Procedure Notes. Note that in the future we will be required by CMS to exclude Procedure Notes by Respiratory Therapy describing an intubation. However, that exclusion is not required by the current collaborative and need not be addressed at this time.

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Ed Performance Measures Required Data Elements

I. For all ED patients, the following data elements need to be extracted by arrival month from Siemens, preferably in one record per encounter, as quickly as possible (within one week?) after the end of the arrival month to permit time for abstraction and submission:
   - A. Encounter number
   - B. MRN
   - C. Discharge date (from the hospital, for admitted patients)
   - D. Discharge date (from the ED, for non-admitted patients)
   - E. Time of transfer from 04PT to inpatient unit (for admitted patients; first census history record where (Change_Type = "T") and (Nurse_Sta_Old = "04PT") and (Nurse_Sta_New <> "04PT"; use Process Time).
   - F. Final principle diagnosis code (Priority = 1)
   - G. Date of birth
   - H. Revenue Codes (4-digit code generated by the CDM based on p-file code; ED services typically include code 0450)
   - I. Admission Date (only if this cannot be extracted from Cerner)
   - J. Admission Time (only if this cannot be extracted from Cerner)

II. For all ED patients, the following data elements need to be extracted by arrival month from Cerner, preferably in one record per encounter, as quickly as possible (within one week?) after the end of the arrival month to permit time for abstraction and submission:
   - A. Chest X-Ray Order Date (earliest order)
     - i. "Chest X-Ray" includes the following order names (Catalog Type = Radiology, Activity Type = Radiology Diagnostic):
       - a. Abdomen Chest Complete
       - b. Chest A-P (Port) Central Line Placement
       - c. Chest A-P (Portable)
       - d. Chest A-P Only
       - e. Chest Apical Lordotic
       - f. Chest Complete Minimum 4 Views
       - g. Chest Cross Table/Lateral
       - h. Chest Decubitus/Bilateral
       - i. Chest Decubitus/Bilateral (Portable)
       - j. Chest Decubitus/Left
       - k. Chest Decubitus/Left (Portable)
       - l. Chest Decubitus/Right
       - m. Chest Decubitus/Right (Portable)
       - n. Chest Fluoroscopy
       - o. Chest Oblique Anterior/Right

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EPR and Public Reporting

Identification of All Electronic and Paper (Imaged) Data Sources
Measure Set: Acute Myocardial Infarction

Data Element	Electronic - Queriable	Electronic - Non-Queriable ("blob")	Paper (Imaged)
Arrival Time	For ED Patients: earliest of Registration Time on ED Pat Edu form; Triage Time on ED Triage form. For Direct Admits: Siemens Admission Time	None at this time	ED documents, Nsg. Admission Assessment/admitting note, Observation record, procedural notes, VS graphic record; Cardiac flowsheet. If a direct admit may also utilize face sheet
Aspirin Received Within 24 Hours Before or After Hospital Arrival	eMAR, Medication Reconciliation	None at this time	Ambulance record, ER document, H&P, Med. Administration record, Med. Rec. form, Nsg. Admission assessment, transfer sheet
Birthdate	Birthdate	None at this time	N/A
Comfort Measures Only	"Comfort Measures Only" order (available as individual order or on Comfort Care Power Plan, MICU Comfort Care Power Plan)	Discharge summary	MICU preprinted order sheet, Progress Notes, Consultation Notes, H&P, Comfort Care Form
Clinical Trial	None at this time	None at this time	signed consent as well as protocol documentation
First PCI Date	None at this time	Operative reports	Diagnostic test reports, procedure notes
First PCI Time	None at this time	Operative reports	Diagnostic test reports, procedure notes


Discern:
TROPONIN ALERT
Was an Aspirin Ordered? If not applicable, click OK.
Add Order for:
aspirin -> 325 mg, TAB, Oral, X1, First dose is STAT, Chew
Document reason Aspirin was not given
OK

Adult Nursing History Form - PEPPERONI, PATTY

*Performed on: 05/06/2010 1307

- General Info
- Language
- Cultural Assessm
- Contact Informat
- Advance Directiv
- Height and Weig
- Medication From
- Measurements
- Allergies
- Immunization
- Valuables & Belo
- Adult Pain Asses
- New Additional F
- FLACC
- Health History
- TB Screen
- Anesth/Transfus
- Nutrition
- Functional
- Sexuality
- Social Habits
- Tobacco Use Hi
- Psychosocial
- Education Need
- Discharge Need

Social Habits

Alcohol Use

Alcohol Use	Type	Frequency	Amount	Last Use	Comment
<Alpha>	<Alpha>	<Alpha>			
<Alpha>	<Alpha>	<Alpha>			

Do You Currently or Have You Ever In The Past Used Tobacco Products

- ○ Current
- ○ Past
- ○ No

Smoking Cessation Literature Given

- ○ Yes

As per hospital policy smoking cessation literature is to be distributed to all patients regardless of smoking status.

Exposure to Tobacco Smoke

- ☐ Exposed at Work
- ☐ Lives with Someone who Smokes
- ☐ Other:

Recreational Drug Use

Drug Use	Type	Route	Frequency	Amount	Last Use	Comment
<Alpha>	<Alpha>	<MultiAlpha>	<Alpha>			
<Alpha>	<Alpha>	<MultiAlpha>	<Alpha>			

Adult Nursing History Form - PEPPERONI, PATTY

Tobacco Use History - PEPPERONI, PATTY

Tobacco History

Past or Current Tobacco Type
☐ Chewing Tobacco ☐ Cigarettes ☐ Cigars ☐ Pipe ☐ Other:

Total Length of Tobacco Product Use? yr

How Many Packs Per Day Did You Smoke During That Time

Have You Changed The Amount You Smoked At Any Time
○ Yes ○ No

After Changing How Many Packs Per Day Did You Smoke at That Time

How Long Did You Smoke that Amount? yr

When Did You Smoke Your Last Cigarette? **/**/**** --

Did You Ever Try To Quit Tobacco Use?
○ Yes ○ No

When Did You Quit Tobacco Use **/**/**** --

Are You Currently Using A Nicotine Replacement Product such as Gum, Patch, Medication
☐ None
☐ Gum
☐ Patch
☐ Medication

How Many Pieces of Nicotine Gum do You Chew Daily

What Dosage of Daily Nicotine Patch are You Using mg/day

Are You Ready to Quit Your Nicotine Replacement Use
○ Yes ○ No

Are you Ready to Quit Your Tobacco Use?
○ Yes ○ No

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Social Habits

Alcohol Use

Alcohol Use	Type	Frequency	Amount	Last Use	Comment
<Alpha>	<Alpha>	<Alpha>			
<Alpha>	<Alpha>	<Alpha>			

Do You Currently or Have You Ever In The Past Used Tobacco Products

- (●) Current
- ( ) Past
- ( ) No

Smoking Cessation Literature Given

- ( ) Yes

As per hospital policy smoking cessation literature is to be distributed to all patients regardless of smoking status.

Exposure to Tobacco Smoke

- [ ] Exposed at Work
- [ ] Lives with Someone who Smokes
- [ ] Other:

Recreational Drug Use

Drug Use	Type	Route	Frequency	Amount	Last Use	Comment
<Alpha>	<Alpha>	<MultiAlpha>	<Alpha>			

Challenges Met

- A hybrid medical record consisting of paper tools and multiple electronic systems results in several possible sources for certain data elements.
  - DSS, CI, and IT have collaborated to identify these many sources

Challenges Met

- Public reporting specifications are not yet always oriented to the electronic world, and there are cases in which application of rules that were logical in the paper world result in a misleading picture of care documented electronically
  - DSS staff have submitted numerous questions to Quest, the forum for core measure specification clarifications
  - Specifications are gradually changing

Challenges Met

- Desire to exploit decision support tools must be balanced with avoidance of “alert fatigue”
  - Alerts are used very sparingly
- Care sets must be updated as specifications change
  - Part of the routine when new specs are released is to review care sets for necessary changes

Outstanding Challenges

- A potential benefit of EPR is the possibility of data capture at the point of care, resulting in real-time feedback to providers.
- However, reports designed for real-time feedback on public reporting indicators are dependent on the point-of-care providers fully understanding the specifications, which requires extensive training

Outstanding Challenges

- Data may be captured in an electronic source that is not part of the legal medical record and not transferred to a location in the legal medical record
  - DSS is working with CI, Nursing, and service staff to find ways to capture vital data in the legal medical record
- Until such time as a local regional health information exchange is fully operational, all documentation from transferring hospitals is received on paper and must be manually reviewed

Outstanding Challenges

- Many data elements are still found in free text fields, or “blobs”, rather than discrete data fields, which means they cannot currently be queried
- Different registries define similar elements differently, which limits the ability to collect such elements via simple checklists/drop-downs
- External validators must interpret the printed medical record without benefit of background knowledge possessed by hospital staff

Outstanding Challenges

- Inconsistent use of care sets
- Start content is not always sufficient when you have a hybrid system
  - Customization is possible, but must be repeated whenever applications are upgraded
- Dynamic environment, so some data are not preserved after subsequent encounters

Discussion

- What is your current stage of EPR implementation?
- What are some benefits related to public reporting requirements that your organization has reaped from EPR implementation?
- What are the biggest challenges – solved or unsolved – that EPR implementation has posed to public reporting at your organization?
- What advice do you have for hospitals in earlier stages of EPR implementation? What do you wish someone had told you earlier in the implementation process?

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