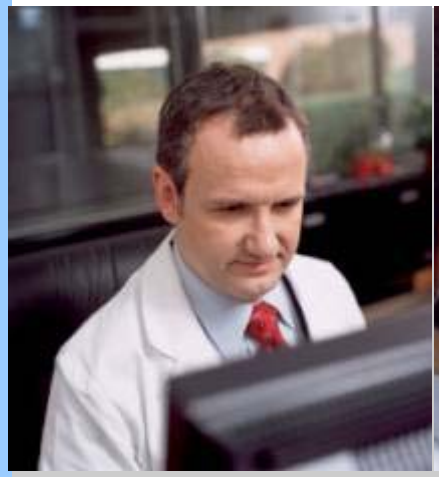
# Chronic Care

## Taking Disease Management Beyond Hospital Walls



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**Director Chronic Heart Failure Initiative**
**The Chester County Hospital**

**Alan Barbell MBA**
**Product Manager, Siemens Medical Solutions**

The Health Network of
THE CHESTER COUNTY HOSPITAL
BEYOND GOOD CARE.

# The Chester County Hospital

- Founded in 1892
- Independent, not-for-profit
- Licensed beds – 221
- Number of employees – 1700
- Emergency department visits – 41,244
- Cancer Center affiliated with HUP
- Pediatric and Level III NICU affiliated with CHOP
- Interventional Cardiology & Electrophysiology
- CV Surgery affiliated with The Cleveland Clinic

# Disease Management

- A systematic population based approach to identify patients at risk
- Utilizes evidence based guidelines to prevent exacerbations and complications of chronic disease
- Supports the practitioner/patient relationship and plan of care
- Measures clinical and other outcomes to improve quality of care

# Disease Management Support

- We do not take over management of patients from the PCP – we support the medical plan of care
- Collaboration with outpatient managers of care to promote consistency in treatment, educational and intervention strategies
- Act as a resource for staff and patients

# Why Heart Failure DM?

| Nationally | Our Experience |
| --- | --- |
| Leading cause of hospitalization in persons over age 65 | 127 – our highest volume DRG |
| Costs $25.8 billion annually | 2005 costs - $4,607,923<br>2005 reim. - $4,252,997<br>($354,926) |
| ALOS 6.2 days | ALOS 6.4 days |
| 20% - 50% readmission rate within 6 months | Comparable |
| 20% readmission patient failure to seek medical attention for worsening symptoms | Comparable |

# Heart Failure at CCH

- 467 discharges last year with a primary diagnosis of HF
- 75% of our HF patients group to DRG 127
- DRG with greatest number of excess days
- Through-put issues/bed availability
- Core measure compliance

# Our Starting Points

- Order sets
- “Choose and check” progress notes
- Discharge forms
- Discharge reminders
- Patient education material
- Medical and nursing staff education

# Getting Started
# Physician Buy-In

# Physician Concerns

- Patients will be confused
- Patients will stop coming for office visits
- Patients might be told something I don’t want them to know
- Conflicting literature about the efficacy of DM programs

# Success with Physician Buy-In

- Physician champion(s)
- Demonstration
- Progress reports
- Section meetings
- CME conferences
- Quality Council
- Newsletters
- 1:1 “hallway conferences”
- Luncheon meetings with PCPs
- Bi-weekly HF Taskforce Meetings

# Skepticism to Collaboration Linking with a Cardiology Practice

- Increase patient satisfaction?
- Improve/enhance communications between inpatient and outpatient environments?
- Promote core measure documentation compliance?
- Reduce LOS when patient is admitted?
- Reduce admissions, ED visits and unscheduled office visits?
- Increase patient accountability?

# How We Make It Work

- Admission notification
- Patient education
- Assessment for enrollment in telephone monitoring
- Assessment for enrollment in research study
- Assess medical record for compliance with core measures
- Interdisciplinary collaboration

# CCH Admission Notifications

1. Soarian Workflow Alert. A patient with a admission DX suggesting CHF has been admitted. Patient's Name: ******** has been admitted to floor TELE Bed: 331101. The patient's MRN is ******* and their PT ID is 10000*******. The admitting diagnosis is ACUTE DYSPNEA STABLE PNEUMOTHORAX, LEFT PLEURAL FUSION,S/P CORONARY ARTERY BYPASS GRAFT
2. Soarian Workflow Alert. A patient with a **history of CHF** has been admitted. Patient's Name: ******** has been admitted to floor ACC Bed: OACC21. The patient's MRN is ****** and their PT ID is 10000******. The admitting diagnosis is LEFT TOTAL KNEE ARTHROPLASTY. The last inpatient admission for this patient was on: Unknown

# CCH Admission Notifications

3. Soarian Workflow Alert. A patient enrolled in the outpatient CHF program has been admitted. Patient's Name: ********** has been admitted to floor TELE Bed: 330702. The patient's MRN is ******* and their PT ID is 10000*******. The admitting diagnosis is Unknown

4. Soarian Workflow Alert. A patient has just had a new BNP above 150. Patient's Name: ********** is on floor WW2 Bed: 026102. The patient's MRN is ****** and their PT ID is 10000*******. The admitting diagnosis is GROSS HEMATURIA. The reported BNP level was: 416

# Soarian DM

- Computerized data base of HF patients enrolled in telephone monitoring
- Alerts trigger outbound calls
- Allows nurse to manage high number of patients and focus outbound calls
- Early intervention is facilitated
- Promotes continuum of care

# Outcomes

- Recognition/acceptance within the organization as evidenced by medical and nursing requests for consults
- Community and regional recognition
- Increased collaboration/communication between inpatient and outpatient healthcare practitioners

# Outcomes

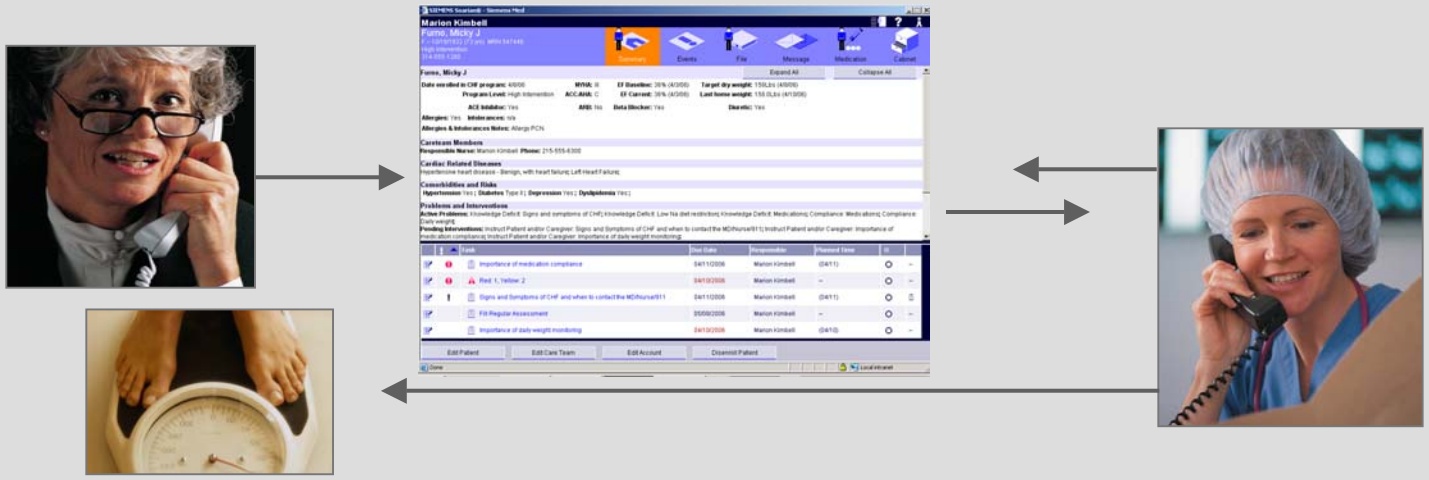
- Reduced hospital visits
- Bed opportunity
- Increased awareness of physician practices d/t concurrent chart review
- Improved compliance with core measure documentation
- Positive patient feedback

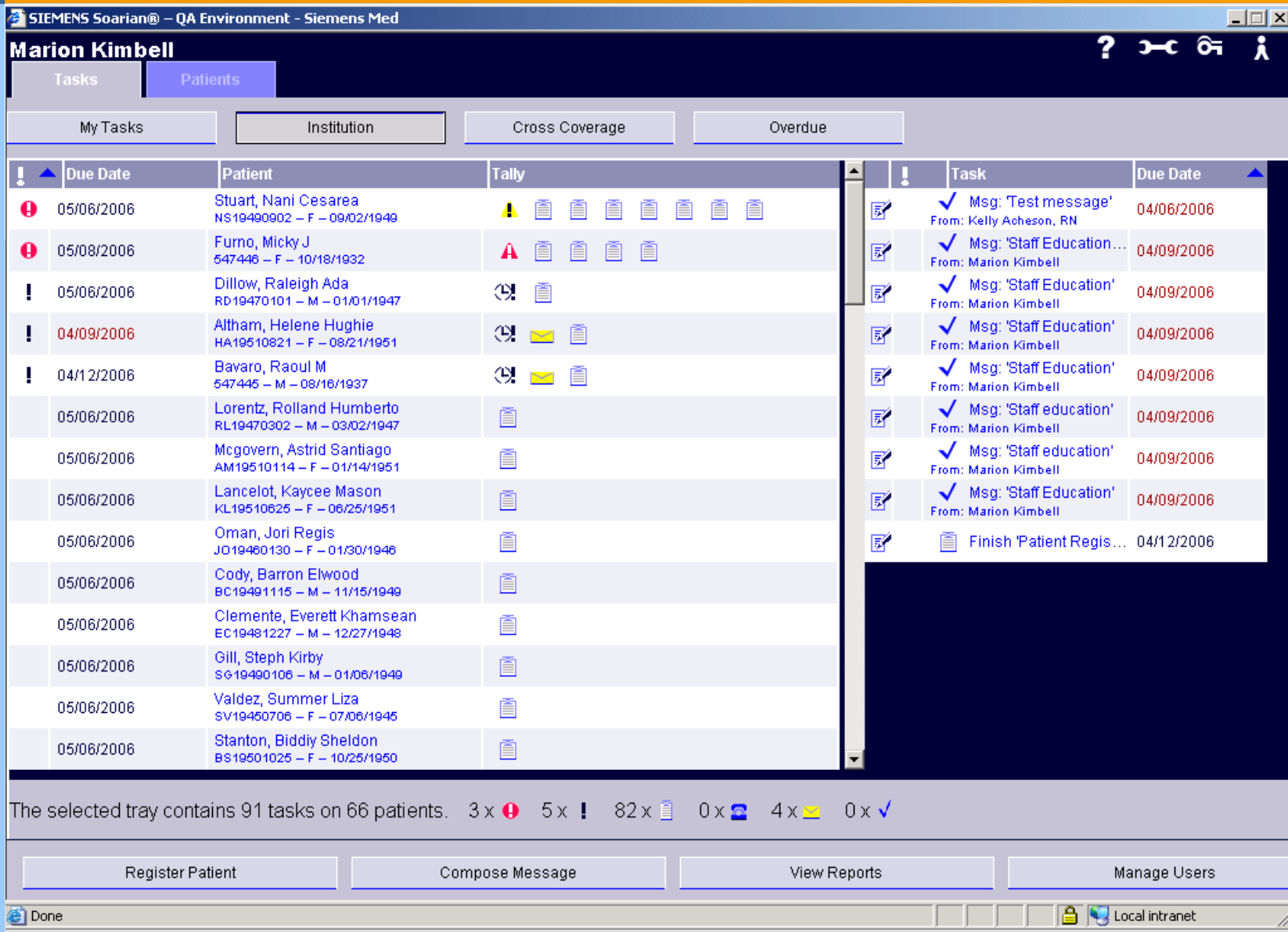
# Next Steps

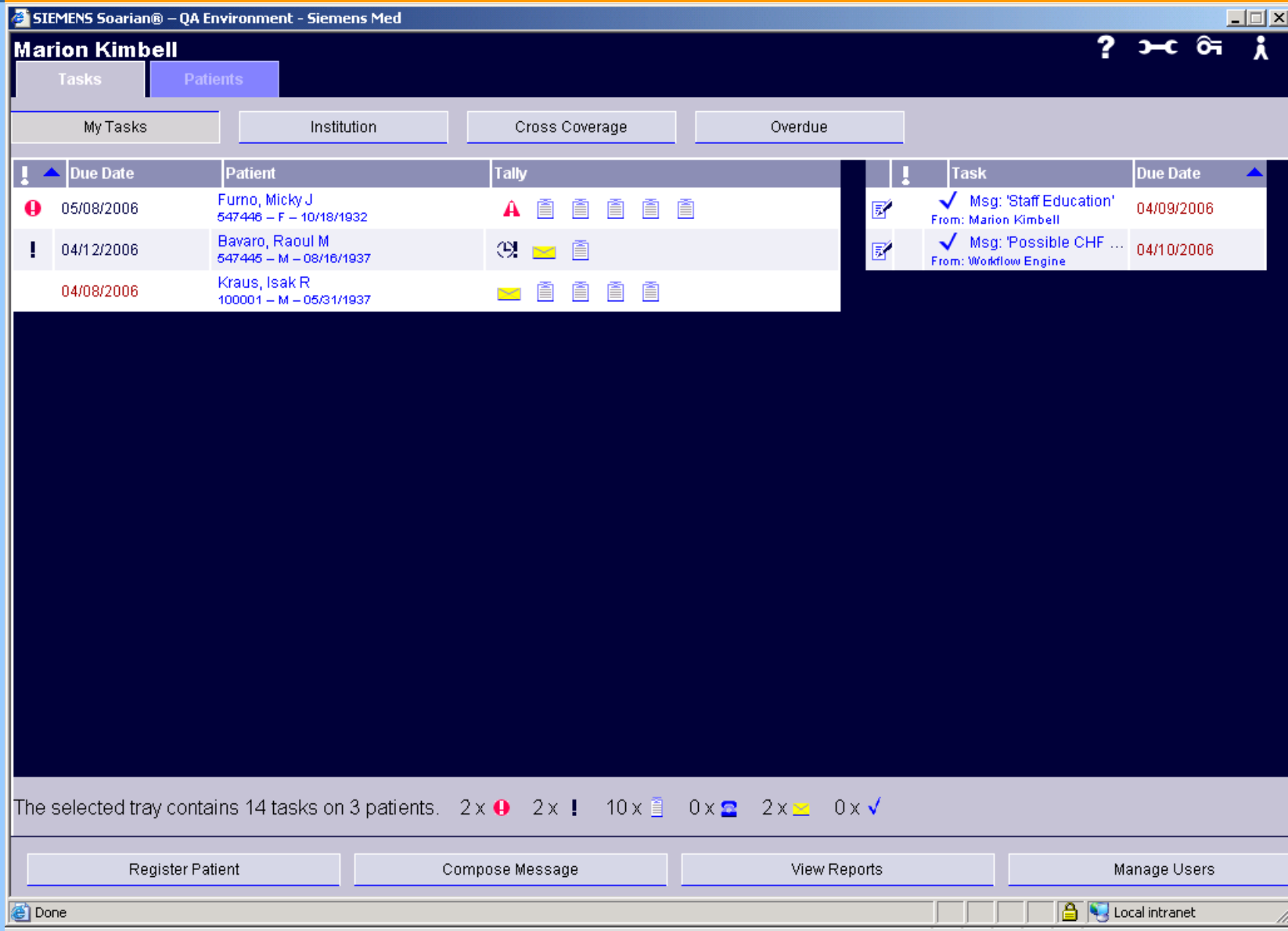
- Hospital based HF Clinic
- Short stay inpatient unit
- Con-current coding
- Electronic notification based on EF
- Apply what we have learned to extend DM support to larger CV patient population
- Test Soarian DM 2.1

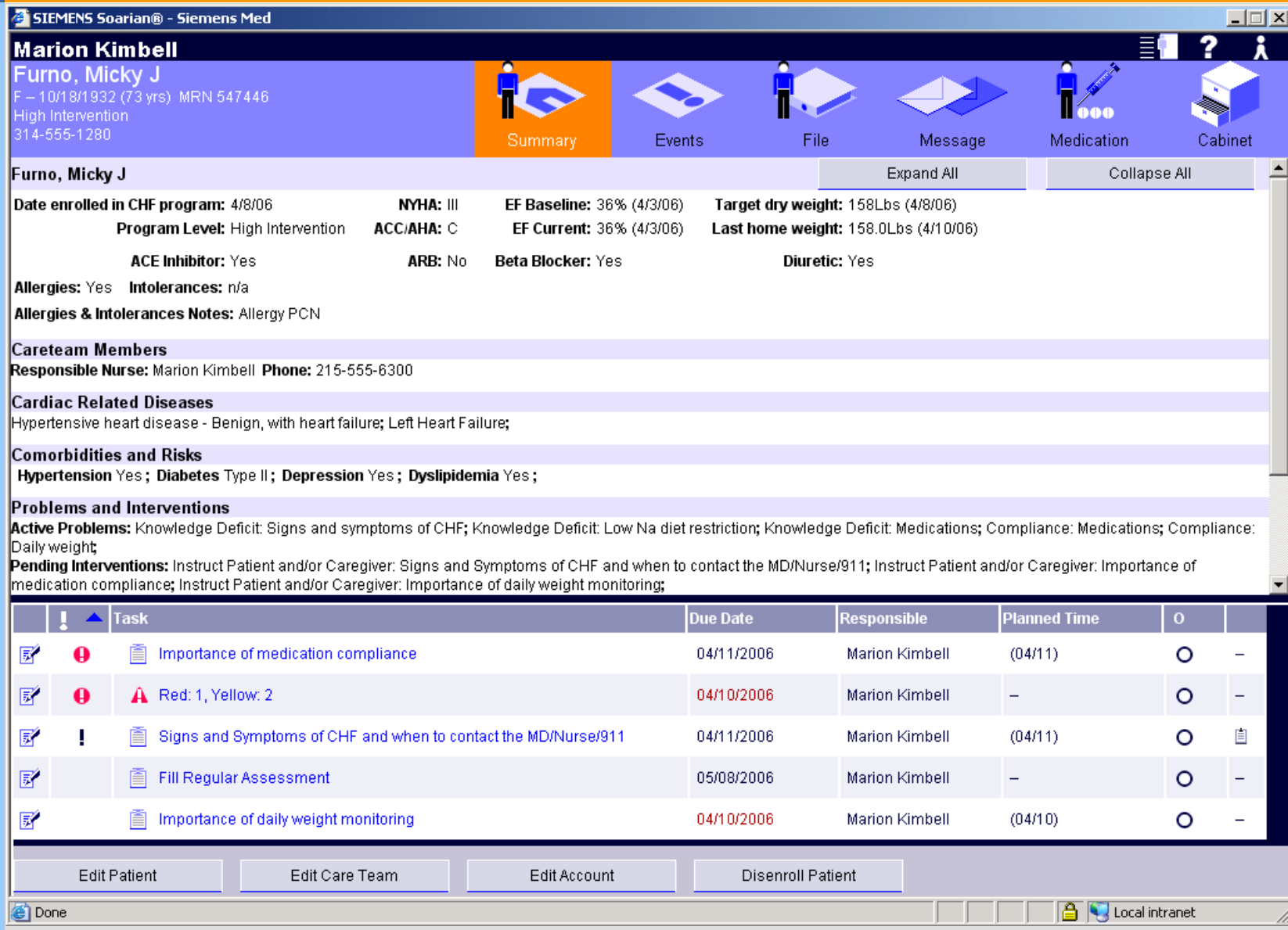
# Soarian Disease Management

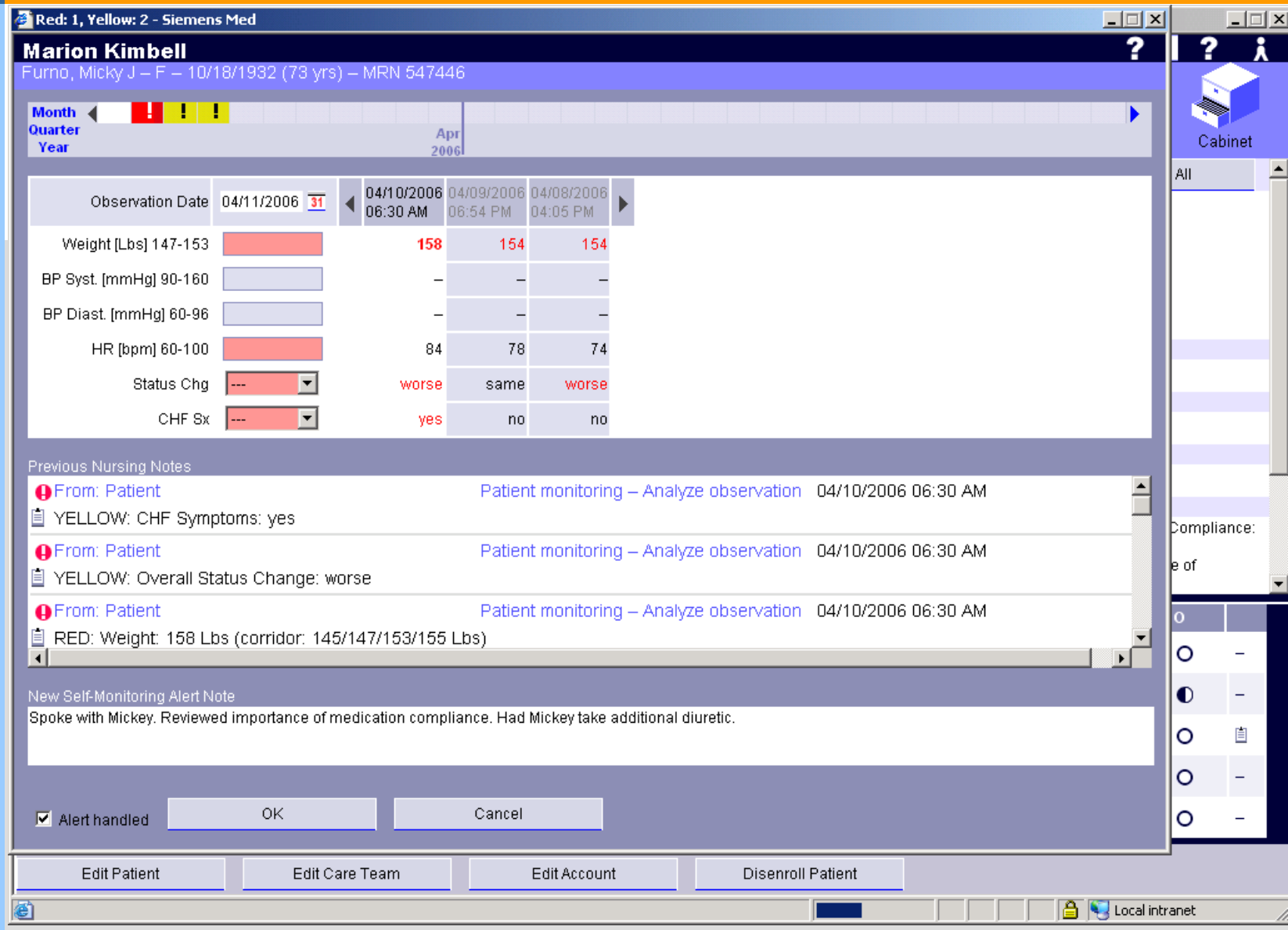
- Patient self monitoring via Interactive Voice Response
- Customizable notifications/reminders
- Patient compliance tracking
- Problems and interventions checklist
- Telephonic nursing assessments

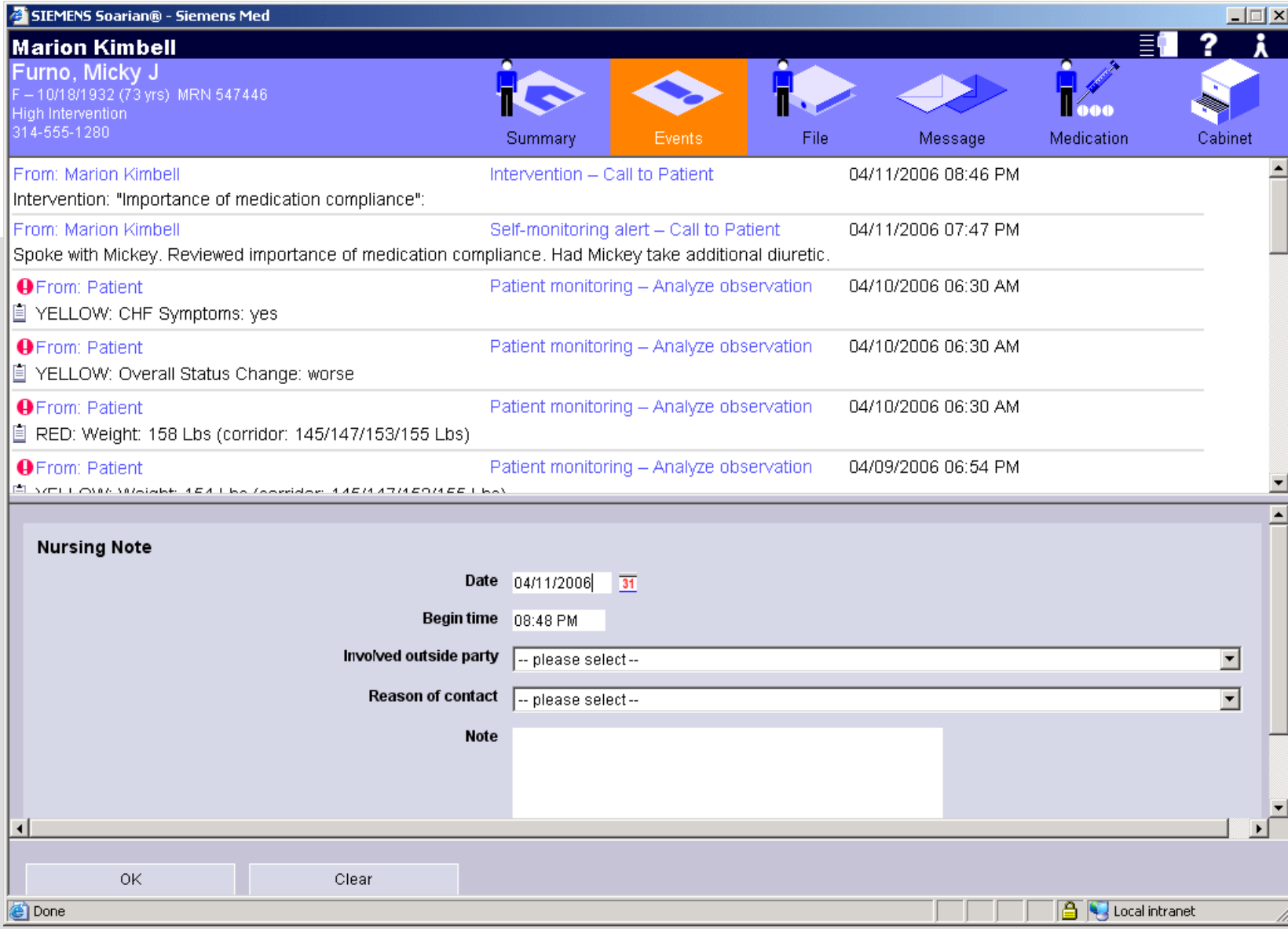


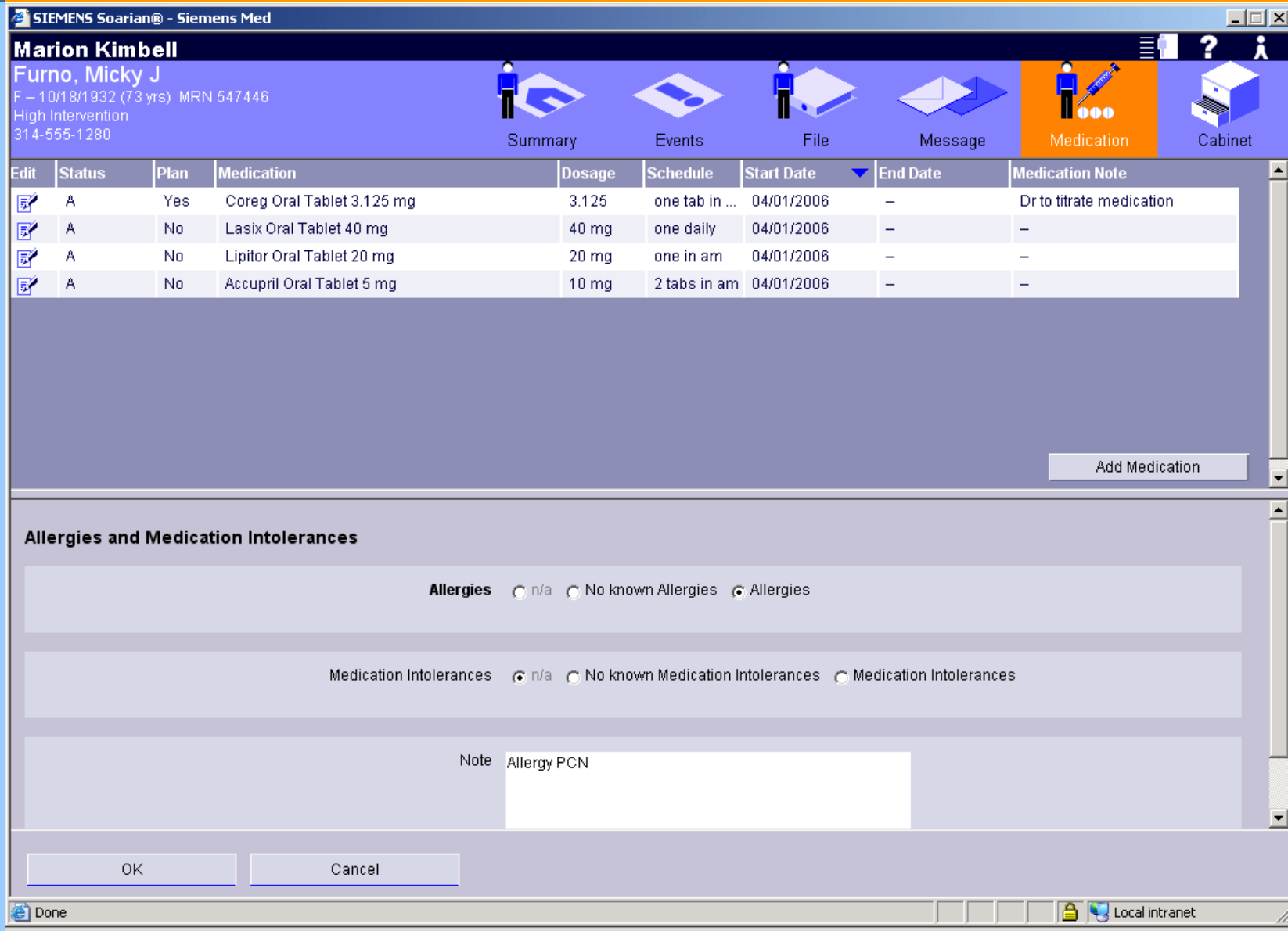

SIEMENS Soarian® – QA Environment - Siemens Med
Marion Kimbell
Tasks
Patients
My Tasks
Institution
Cross Coverage
Overdue
Due Date
Patient
Tally
05/06/2006
Stuart, Nani Cesarea
NS19490902 – F – 09/02/1949
05/08/2006
Furno, Micky J
547446 – F – 10/18/1932
05/06/2006
Dillow, Raleigh Ada
RD19470101 – M – 01/01/1947
04/09/2006
Altham, Helene Hughie
HA19510821 – F – 08/21/1951
04/12/2006
Bavaro, Raoul M
547445 – M – 08/16/1937
05/06/2006
Lorentz, Rolland Humberto
RL19470302 – M – 03/02/1947
05/06/2006
Mcgovern, Astrid Santiago
AM19510114 – F – 01/14/1951
05/06/2006
Lancelot, Kaycee Mason
KL19510625 – F – 06/25/1951
05/06/2006
Oman, Jori Regis
JO19460130 – F – 01/30/1946
05/06/2006
Cody, Barron Elwood
BC19491115 – M – 11/15/1949
05/06/2006
Clemente, Everett Khamsean
EC19481227 – M – 12/27/1948
05/06/2006
Gill, Steph Kirby
SG19490106 – M – 01/06/1949
05/06/2006
Valdez, Summer Liza
SV19450706 – F – 07/06/1945
05/06/2006
Stanton, Biddiy Sheldon
BS19501025 – F – 10/25/1950
Task
Due Date
Msg: 'Test message'
From: Kelly Acheson, RN
04/06/2006
Msg: 'Staff Education...
From: Marion Kimbell
04/09/2006
Msg: 'Staff Education'
From: Marion Kimbell
04/09/2006
Msg: 'Staff Education'
From: Marion Kimbell
04/09/2006
Msg: 'Staff Education'
From: Marion Kimbell
04/09/2006
Msg: 'Staff education'
From: Marion Kimbell
04/09/2006
Msg: 'Staff education'
From: Marion Kimbell
04/09/2006
Msg: 'Staff Education'
From: Marion Kimbell
04/09/2006
Finish 'Patient Regis...
04/12/2006
The selected tray contains 91 tasks on 66 patients. 3 x 5 x 82 x 0 x 4 x 0 x
Register Patient
Compose Message
View Reports
Manage Users
Done
Local intranet

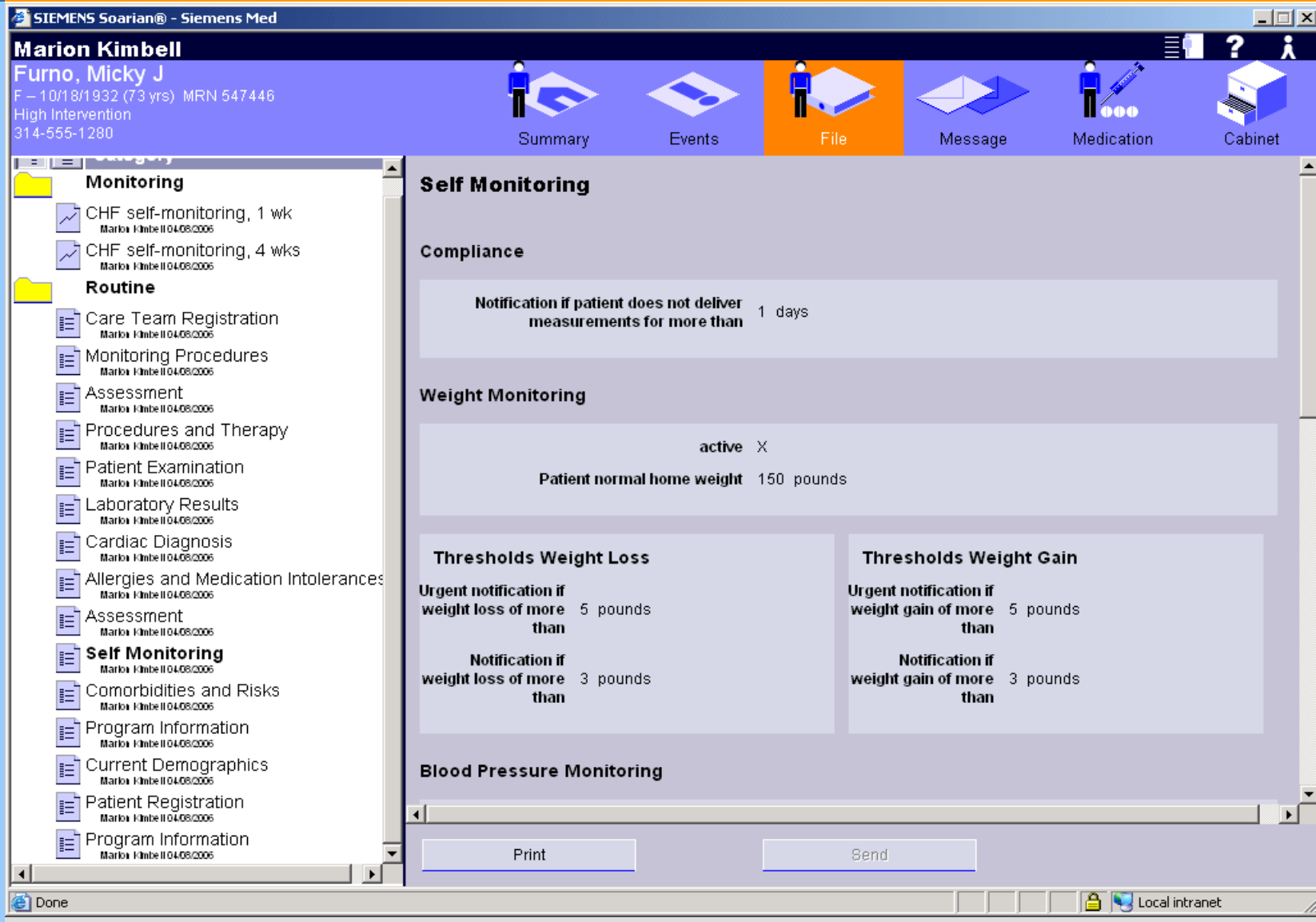

SIEMENS Soarian® – QA Environment - Siemens Med
Marion Kimbell
Tasks
Patients
My Tasks
Institution
Cross Coverage
Overdue
Due Date
Patient
Tally
05/08/2006
Furno, Micky J
547446 – F – 10/18/1932
04/12/2006
Bavaro, Raoul M
547445 – M – 08/16/1937
04/08/2006
Kraus, Isak R
100001 – M – 05/31/1937
Task
Due Date
Msg: 'Staff Education'
From: Marion Kimbell
04/09/2006
Msg: 'Possible CHF ...
From: Workflow Engine
04/10/2006
The selected tray contains 14 tasks on 3 patients.
2 x
2 x
10 x
0 x
2 x
0 x
Register Patient
Compose Message
View Reports
Manage Users
Done
Local intranet

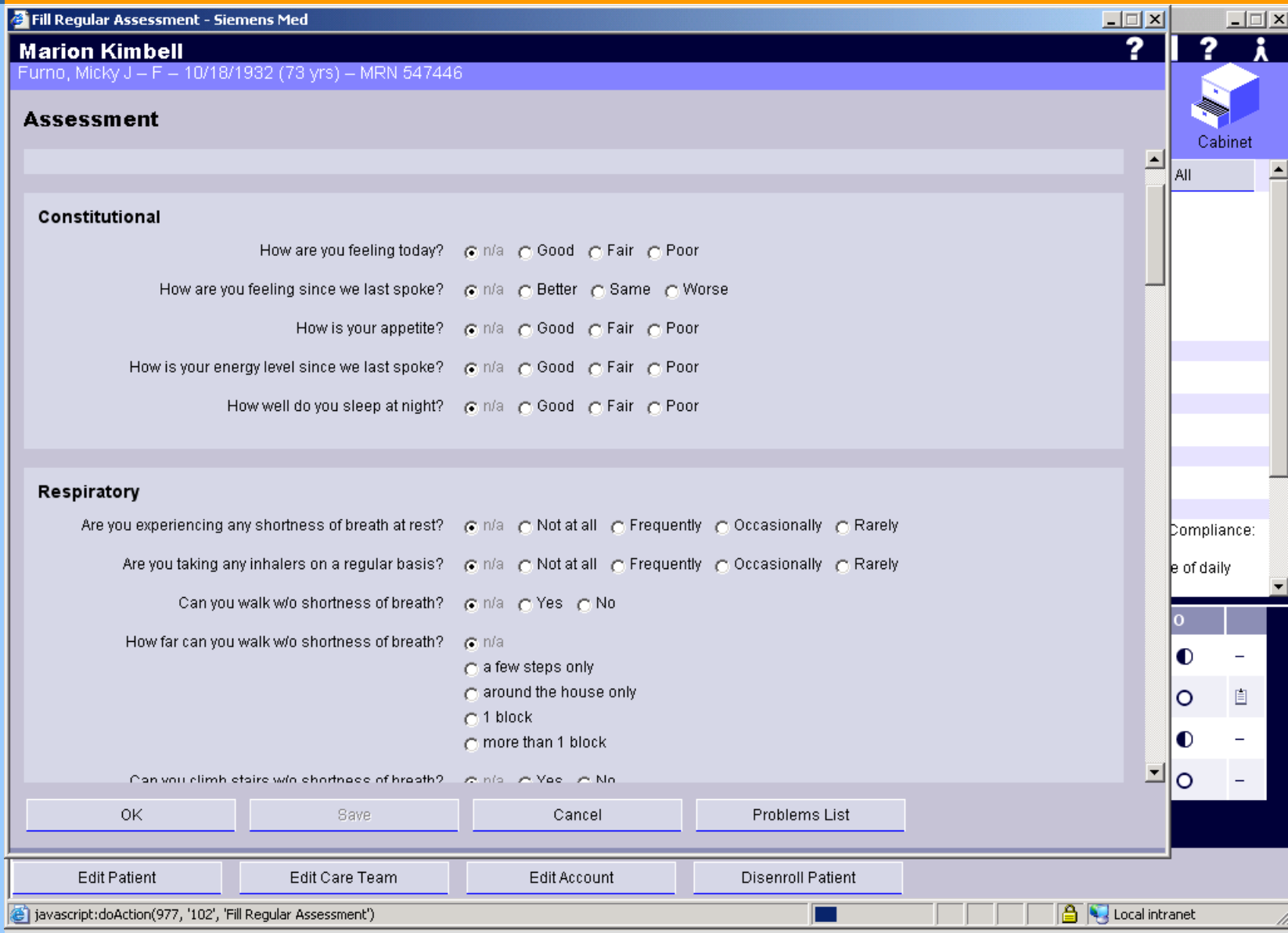

SIEMENS Soarian® - Siemens Med
Marion Kimbell
Furno, Micky J
F – 10/18/1932 (73 yrs) MRN 547446
High Intervention
314-555-1280
Summary
Events
File
Message
Medication
Cabinet
Furno, Micky J
Expand All
Collapse All
Date enrolled in CHF program: 4/8/06
NYHA: III
EF Baseline: 36% (4/3/06)
Target dry weight: 158Lbs (4/8/06)
Program Level: High Intervention
ACC/AHA: C
EF Current: 36% (4/3/06)
Last home weight: 158.0Lbs (4/10/06)
ACE Inhibitor: Yes
ARB: No
Beta Blocker: Yes
Diuretic: Yes
Allergies: Yes
Intolerances: n/a
Allergies & Intolerances Notes: Allergy PCN
Careteam Members
Responsible Nurse: Marion Kimbell Phone: 215-555-6300
Cardiac Related Diseases
Hypertensive heart disease - Benign, with heart failure; Left Heart Failure;
Comorbidities and Risks
Hypertension Yes ; Diabetes Type II ; Depression Yes ; Dyslipidemia Yes ;
Problems and Interventions
Active Problems: Knowledge Deficit: Signs and symptoms of CHF; Knowledge Deficit: Low Na diet restriction; Knowledge Deficit: Medications; Compliance: Medications; Compliance: Daily weight;
Pending Interventions: Instruct Patient and/or Caregiver: Signs and Symptoms of CHF and when to contact the MD/Nurse/911; Instruct Patient and/or Caregiver: Importance of medication compliance; Instruct Patient and/or Caregiver: Importance of daily weight monitoring;
Task
Due Date
Responsible
Planned Time
O
Importance of medication compliance
04/11/2006
Marion Kimbell
(04/11)
Red: 1, Yellow: 2
04/10/2006
Marion Kimbell
–
Signs and Symptoms of CHF and when to contact the MD/Nurse/911
04/11/2006
Marion Kimbell
(04/11)
Fill Regular Assessment
05/08/2006
Marion Kimbell
–
Importance of daily weight monitoring
04/10/2006
Marion Kimbell
(04/10)
Edit Patient
Edit Care Team
Edit Account
Disenroll Patient
Done
Local intranet

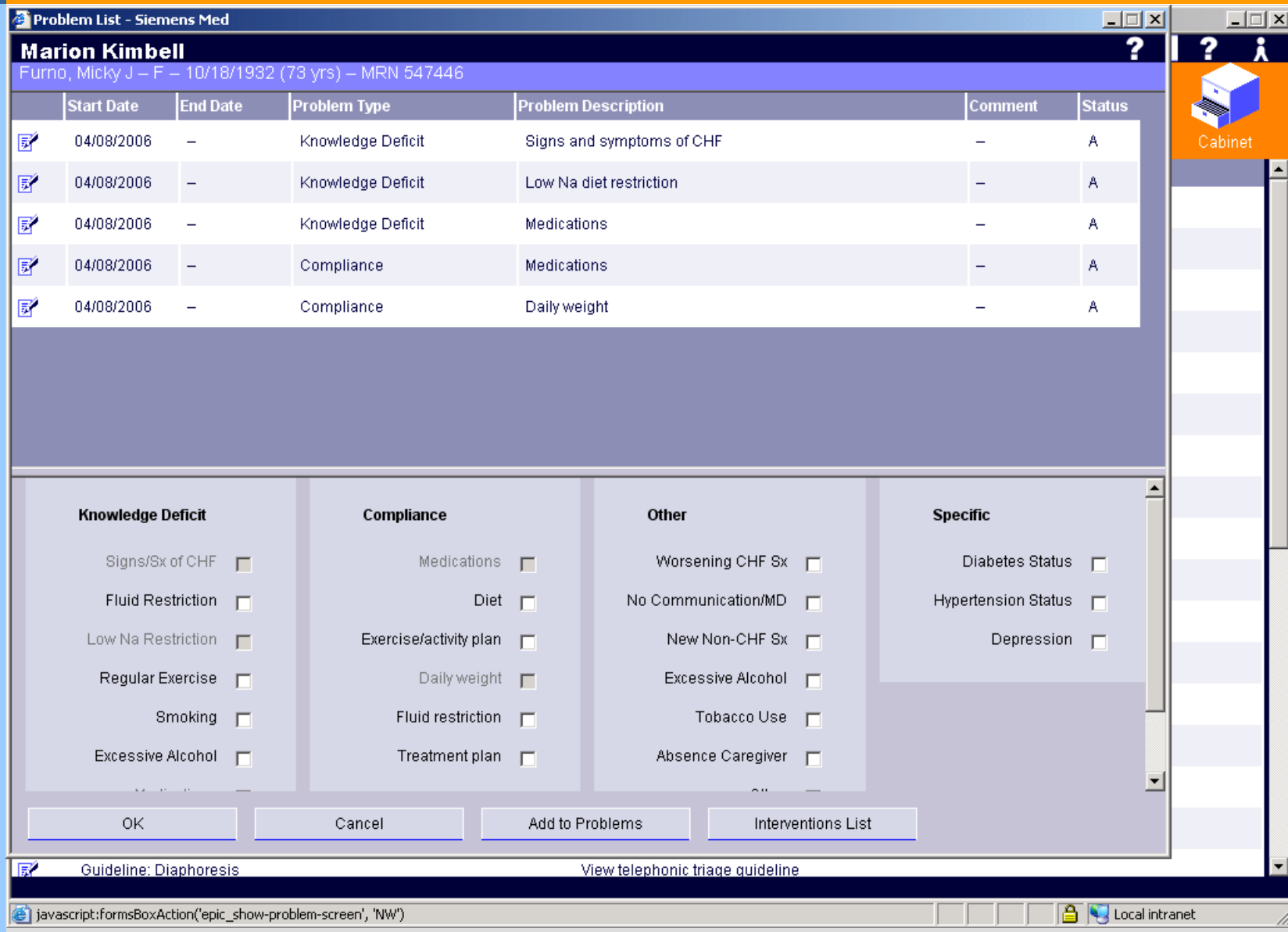

Red: 1, Yellow: 2 - Siemens Med
Marion Kimbell
Furno, Micky J – F – 10/18/1932 (73 yrs) – MRN 547446
Month
Quarter
Year
Apr
2006
Observation Date
04/11/2006
04/10/2006 06:30 AM
04/09/2006 06:54 PM
04/08/2006 04:05 PM
Weight [Lbs] 147-153
158
154
154
BP Syst. [mmHg] 90-160
BP Diast. [mmHg] 60-96
HR [bpm] 60-100
84
78
74
Status Chg
worse
same
worse
CHF Sx
yes
no
no
Previous Nursing Notes
From: Patient
Patient monitoring – Analyze observation
04/10/2006 06:30 AM
YELLOW: CHF Symptoms: yes
From: Patient
Patient monitoring – Analyze observation
04/10/2006 06:30 AM
YELLOW: Overall Status Change: worse
From: Patient
Patient monitoring – Analyze observation
04/10/2006 06:30 AM
RED: Weight: 158 Lbs (corridor: 145/147/153/155 Lbs)
New Self-Monitoring Alert Note
Spoke with Mickey. Reviewed importance of medication compliance. Had Mickey take additional diuretic.
Alert handled
OK
Cancel
Edit Patient
Edit Care Team
Edit Account
Disenroll Patient
Cabinet
All
Compliance:
Local intranet

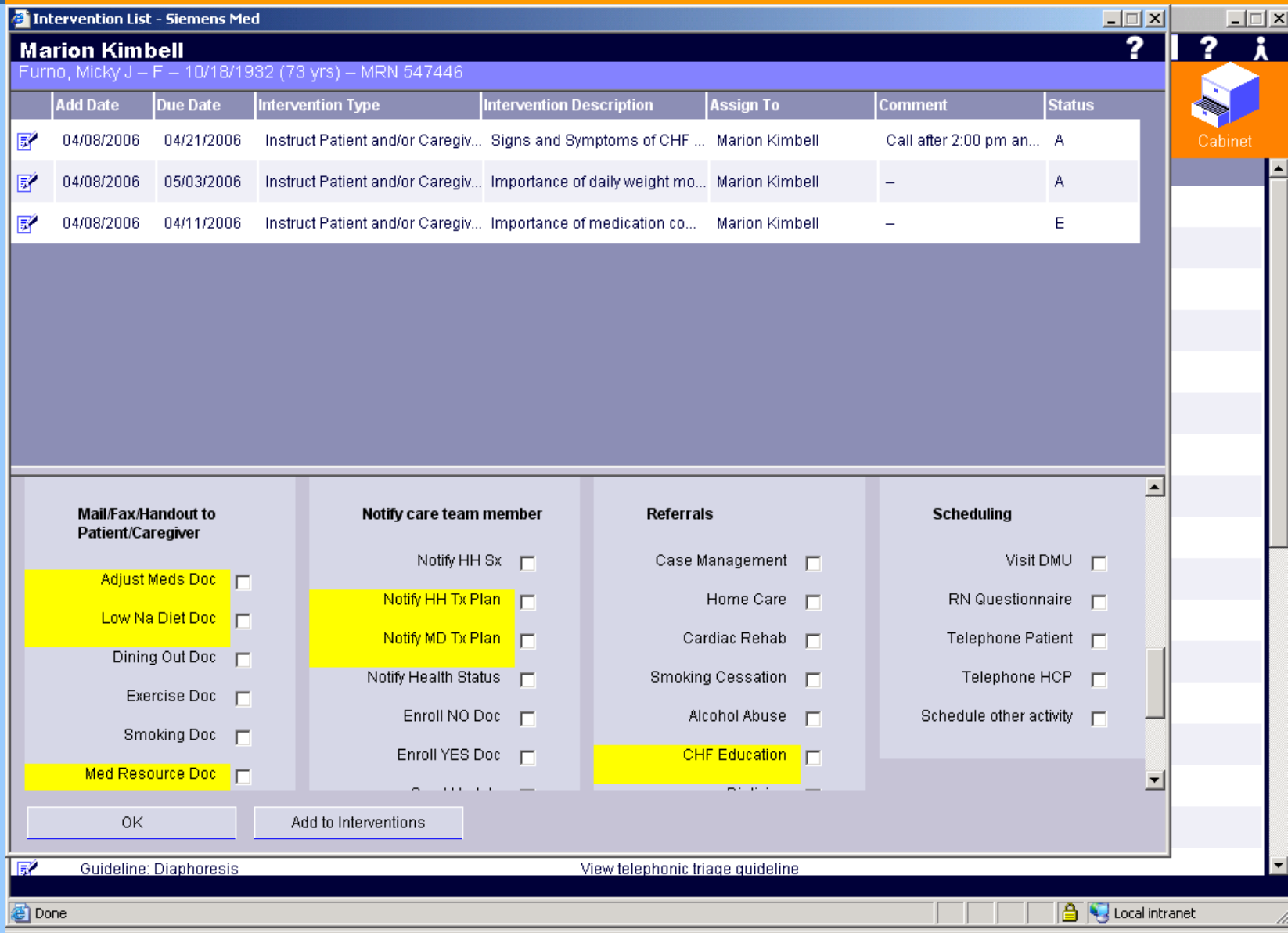

SIEMENS Soarian® - Siemens Med
Marion Kimbell
Furno, Micky J
F – 10/18/1932 (73 yrs) MRN 547446
High Intervention
314-555-1280
Summary
Events
File
Message
Medication
Cabinet
From: Marion Kimbell
Intervention – Call to Patient
04/11/2006 08:46 PM
Intervention: "Importance of medication compliance":
From: Marion Kimbell
Self-monitoring alert – Call to Patient
04/11/2006 07:47 PM
Spoke with Mickey. Reviewed importance of medication compliance. Had Mickey take additional diuretic.
From: Patient
Patient monitoring – Analyze observation
04/10/2006 06:30 AM
YELLOW: CHF Symptoms: yes
From: Patient
Patient monitoring – Analyze observation
04/10/2006 06:30 AM
YELLOW: Overall Status Change: worse
From: Patient
Patient monitoring – Analyze observation
04/10/2006 06:30 AM
RED: Weight: 158 Lbs (corridor: 145/147/153/155 Lbs)
From: Patient
Patient monitoring – Analyze observation
04/09/2006 06:54 PM
Nursing Note
Date
04/11/2006
Begin time
08:48 PM
Involved outside party
-- please select --
Reason of contact
-- please select --
Note
OK
Clear
Done
Local intranet


SIEMENS Soarian® - Siemens Med
Marion Kimbell
Furno, Micky J
F – 10/18/1932 (73 yrs) MRN 547446
High Intervention
314-555-1280
Summary
Events
File
Message
Medication
Cabinet
Edit
Status
Plan
Medication
Dosage
Schedule
Start Date
End Date
Medication Note
A Yes Coreg Oral Tablet 3.125 mg 3.125 one tab in ... 04/01/2006 – Dr to titrate medication
A No Lasix Oral Tablet 40 mg 40 mg one daily 04/01/2006 – –
A No Lipitor Oral Tablet 20 mg 20 mg one in am 04/01/2006 – –
A No Accupril Oral Tablet 5 mg 10 mg 2 tabs in am 04/01/2006 – –
Add Medication
Allergies and Medication Intolerances
Allergies
n/a
No known Allergies
Allergies
Medication Intolerances
n/a
No known Medication Intolerances
Medication Intolerances
Note
Allergy PCN
OK
Cancel
Done
Local intranet


SIEMENS Soarian® - Siemens Med
Marion Kimbell
Furno, Micky J
F – 10/18/1932 (73 yrs) MRN 547446
High Intervention
314-555-1280
Summary
Events
File
Message
Medication
Cabinet
Monitoring
CHF self-monitoring, 1 wk
CHF self-monitoring, 4 wks
Routine
Care Team Registration
Monitoring Procedures
Assessment
Procedures and Therapy
Patient Examination
Laboratory Results
Cardiac Diagnosis
Allergies and Medication Intolerances
Assessment
Self Monitoring
Comorbidities and Risks
Program Information
Current Demographics
Patient Registration
Program Information
Self Monitoring
Compliance
Notification if patient does not deliver measurements for more than 1 days
Weight Monitoring
active X
Patient normal home weight 150 pounds
Thresholds Weight Loss
Urgent notification if weight loss of more than 5 pounds
Notification if weight loss of more than 3 pounds
Thresholds Weight Gain
Urgent notification if weight gain of more than 5 pounds
Notification if weight gain of more than 3 pounds
Blood Pressure Monitoring
Print
Send
Done
Local intranet


Fill Regular Assessment - Siemens Med
Marion Kimbell
Furno, Micky J – F – 10/18/1932 (73 yrs) – MRN 547446
Assessment
Constitutional
How are you feeling today? n/a Good Fair Poor
How are you feeling since we last spoke? n/a Better Same Worse
How is your appetite? n/a Good Fair Poor
How is your energy level since we last spoke? n/a Good Fair Poor
How well do you sleep at night? n/a Good Fair Poor
Respiratory
Are you experiencing any shortness of breath at rest? n/a Not at all Frequently Occasionally Rarely
Are you taking any inhalers on a regular basis? n/a Not at all Frequently Occasionally Rarely
Can you walk w/o shortness of breath? n/a Yes No
How far can you walk w/o shortness of breath? n/a
a few steps only
around the house only
1 block
more than 1 block
OK
Save
Cancel
Problems List
Edit Patient
Edit Care Team
Edit Account
Disenroll Patient
javascript:doAction(977, '102', 'Fill Regular Assessment')
Local intranet
Cabinet
All
Compliance:
e of daily


Problem List - Siemens Med
Marion Kimbell
Furno, Micky J – F – 10/18/1932 (73 yrs) – MRN 547446
Start Date
End Date
Problem Type
Problem Description
Comment
Status
04/08/2006 – Knowledge Deficit Signs and symptoms of CHF – A
04/08/2006 – Knowledge Deficit Low Na diet restriction – A
04/08/2006 – Knowledge Deficit Medications – A
04/08/2006 – Compliance Medications – A
04/08/2006 – Compliance Daily weight – A
Knowledge Deficit
Signs/Sx of CHF
Fluid Restriction
Low Na Restriction
Regular Exercise
Smoking
Excessive Alcohol
Compliance
Medications
Diet
Exercise/activity plan
Daily weight
Fluid restriction
Treatment plan
Other
Worsening CHF Sx
No Communication/MD
New Non-CHF Sx
Excessive Alcohol
Tobacco Use
Absence Caregiver
Specific
Diabetes Status
Hypertension Status
Depression
OK
Cancel
Add to Problems
Interventions List
Guideline: Diaphoresis
View telephonic triage guideline
Cabinet
javascript:formsBoxAction('epic_show-problem-screen', 'NW')
Local intranet


Intervention List - Siemens Med
Marion Kimbell
Furno, Micky J – F – 10/18/1932 (73 yrs) – MRN 547446
Add Date
Due Date
Intervention Type
Intervention Description
Assign To
Comment
Status
04/08/2006
04/21/2006
Instruct Patient and/or Caregiv...
Signs and Symptoms of CHF ...
Marion Kimbell
Call after 2:00 pm an...
A
04/08/2006
05/03/2006
Instruct Patient and/or Caregiv...
Importance of daily weight mo...
Marion Kimbell
–
A
04/08/2006
04/11/2006
Instruct Patient and/or Caregiv...
Importance of medication co...
Marion Kimbell
–
E
Cabinet
Mail/Fax/Handout to Patient/Caregiver
Adjust Meds Doc
Low Na Diet Doc
Dining Out Doc
Exercise Doc
Smoking Doc
Med Resource Doc
Notify care team member
Notify HH Sx
Notify HH Tx Plan
Notify MD Tx Plan
Notify Health Status
Enroll NO Doc
Enroll YES Doc
Referrals
Case Management
Home Care
Cardiac Rehab
Smoking Cessation
Alcohol Abuse
CHF Education
Scheduling
Visit DMU
RN Questionnaire
Telephone Patient
Telephone HCP
Schedule other activity
OK
Add to Interventions
Guideline: Diaphoresis
View telephonic triage guideline
Done
Local intranet

# Potential Impact of Disease Management Programs

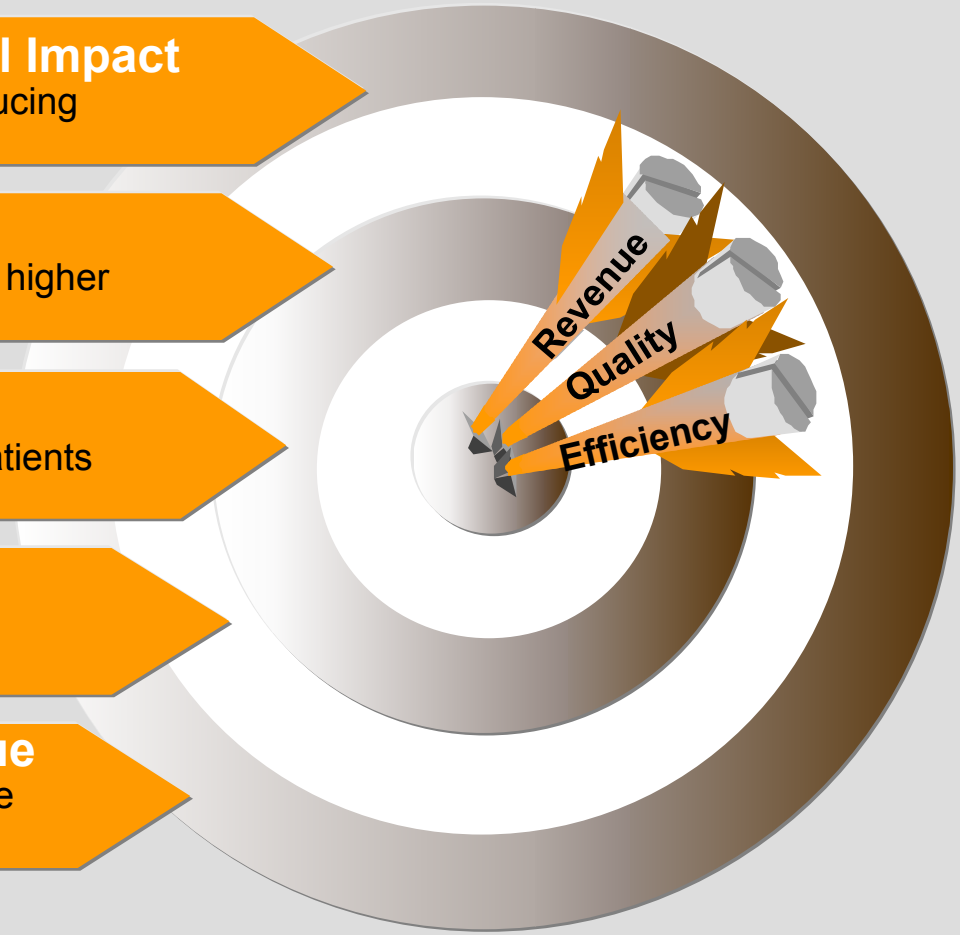
**Reduce Negative Financial Impact**
of treating chronic ill patients by reducing Admission LOS and ER visits

**Optimize Resources**
by freeing up valuable resources for higher reimbursable procedures

**Improve Quality of Care**
by delivering better care to at risk patients

**Improve Patient Affinity**
by keeping valuable patients tied to your organization

**Prepare for Future Revenue**
anticipate reimbursement for disease management services (CMS)



# Questions?