Consumer eHealth Affinity Group

Beacon Community Program

Center for Technology and Aging

Embracing Barriers in the Delivery of IVR Technology for Older, Chronically Ill Patients

Jeremy Rich

HealthCare Partners Institute and HealthCare Partners Medical Group

Janelle Howe

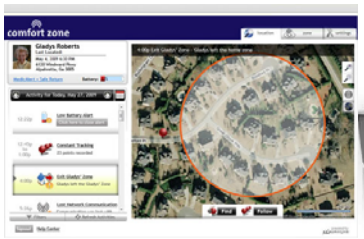
HealthCare Partners Medical Group

December 15, 2011

Remote Patient Monitoring Diffusion Grants Program

- AltaMed Health Services and Stamford Hospital
- Catholic Healthcare West
- California Association for Health Services at Home
- Centura Health at Home
- HealthCare Partners Institute for Applied Research and Education
- New England Healthcare Institute
- Sharp HealthCare Foundation

Gordon and Betty MOORE FOUNDATION






HealthCare Partners Medical Group Background

- Physician-owned Group & IPA Serving the greater Los Angeles Orange Counties
- Facilities/Physicians
  - 66 Staff Model Facilities (Primary Care, Urgent Care, Walk-In, Ambulatory Surgery, Pharmacy)
  - 753 IPA Medical Offices

  Physicians
  - 235 Employed
  - 975 IPA
  - 290 Specialists Employed
- ~575,000 + lives
  - ~479,000 commercial, ~99,000 senior

Health Plans Accepted: 14 Medicare Advantage, 8 Commercial (HMO/POS)

HealthCare Partners Medical Group Background

- Comprehensive data warehouse to identify all patients with COPD
  - Individual patient data and reporting is available to all PCPs
  - Inpatient and outpatient claims
  - Laboratory results
  - Spirometry
  - Pharmacy usage
- Electronic Medical Record EMR;
- High Risk Programs; HouseCalls; Comprehensive Care Clinics
- Disease Management Programs; Heart Failure, Diabetes, COPD
  - RN staff targeted to facilitate patient self management
  - Electonic support tools that drive staff consistency in the delivery of COPD and other disease management programs

Disease Management at HealthCare Partners

- COPD Disease Burden at HealthCare Partners
  - Disease Registry of COPD Patients
  - 2009 = 16,642
  - 2011– 20,357
- Economic Burden of COPD is Significant
- Greater than $1,000 per patient per month
- Inpatient hospitalization accounts for ~50% of all costs
- Consistently one of the top 10 ranked at HCP for inpatient admissions (#8 in 2008, #4 in 2010); top 20 for readmissions

HCP COPD Disease Management Program Study Objectives

- Assess a disease management program focused on COPD Patients aiming to:
  - Improve patient outcomes & QOL
  - Decrease hospitalization: goal 20% reduction
  - Decrease ER visits: goal 20% reduction
  - Reduction in the total cost of care of patients with COPD: goal 10% reduction in the pmpm of study population

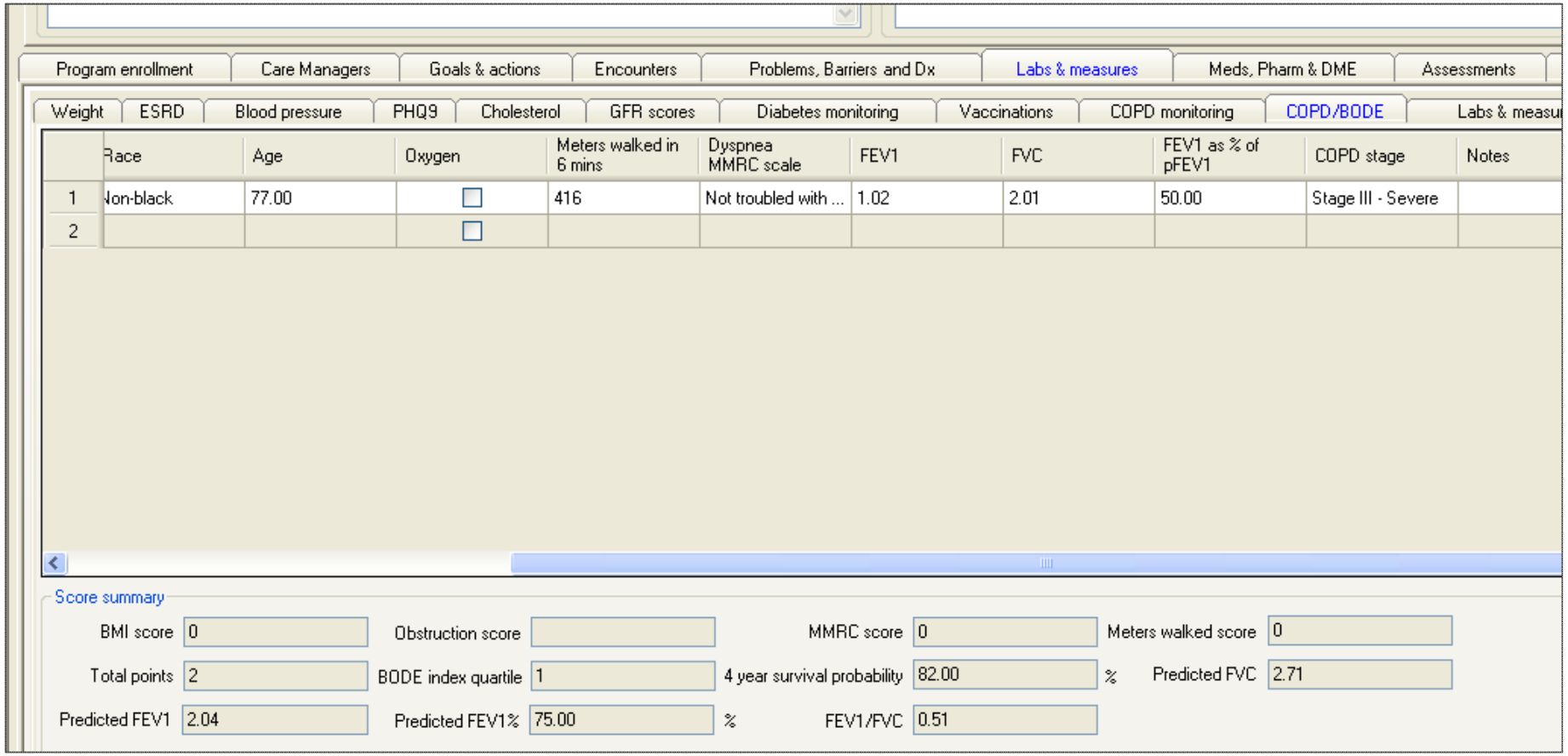
HCP COPD Disease Management Program

- Key Interventions
  - Initial face-to-face visit for assessment and education
  - Regular telephonic outreach for patient self-management education and assessment of symptoms
  - Facilitated health delivery access and intervention for those with exacerbations
    - Red and Yellow Zone Action Plan

COPD Patient Instructions

- Patients Instructed to Call When Having:
  - More Shortness of Breath or Wheezing
  - Worsening Cough
  - Increased Mucus or Sputum
  - Trouble Getting Mucus Up
  - Mucus Changed to Green or Yellow
  - Onset of Fever
  - Trouble Concentrating
  - More Fatigue and Needed More Rest
- RN Facilitates Care and Emergency Prescriptions; antibiotics and steroids

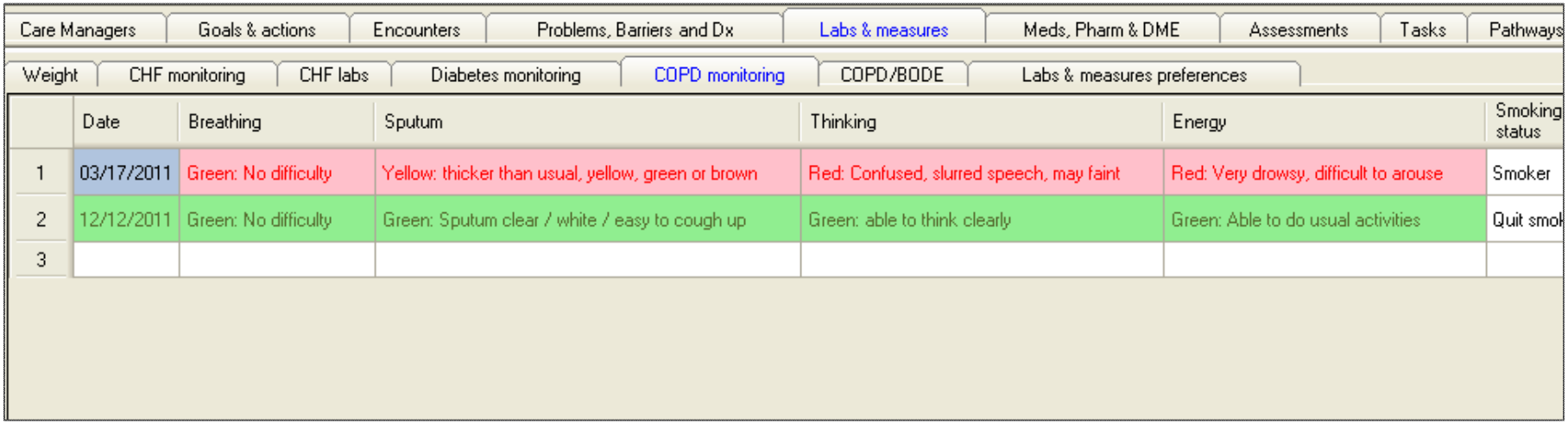
HCP COPD Program- Spirometry and BODE



- RN Care Managers Track Spirometry and COPD Stage

- Spirometry is also part of a BODE Assessment which relates to acuity and follow up with patients

HCP COPD DM Program – Monitoring Symptoms



	Date	Breathing	Sputum	Thinking	Energy	Smoking status
1	03/17/2011	Green: No difficulty	Yellow: thicker than usual, yellow, green or brown	Red: Confused, slurred speech, may faint	Red: Very drowsy, difficult to arouse	Smoker
2	12/12/2011	Green: No difficulty	Green: Sputum clear / white / easy to cough up	Green: able to think clearly	Green: Able to do usual activities	Quit smok
3						

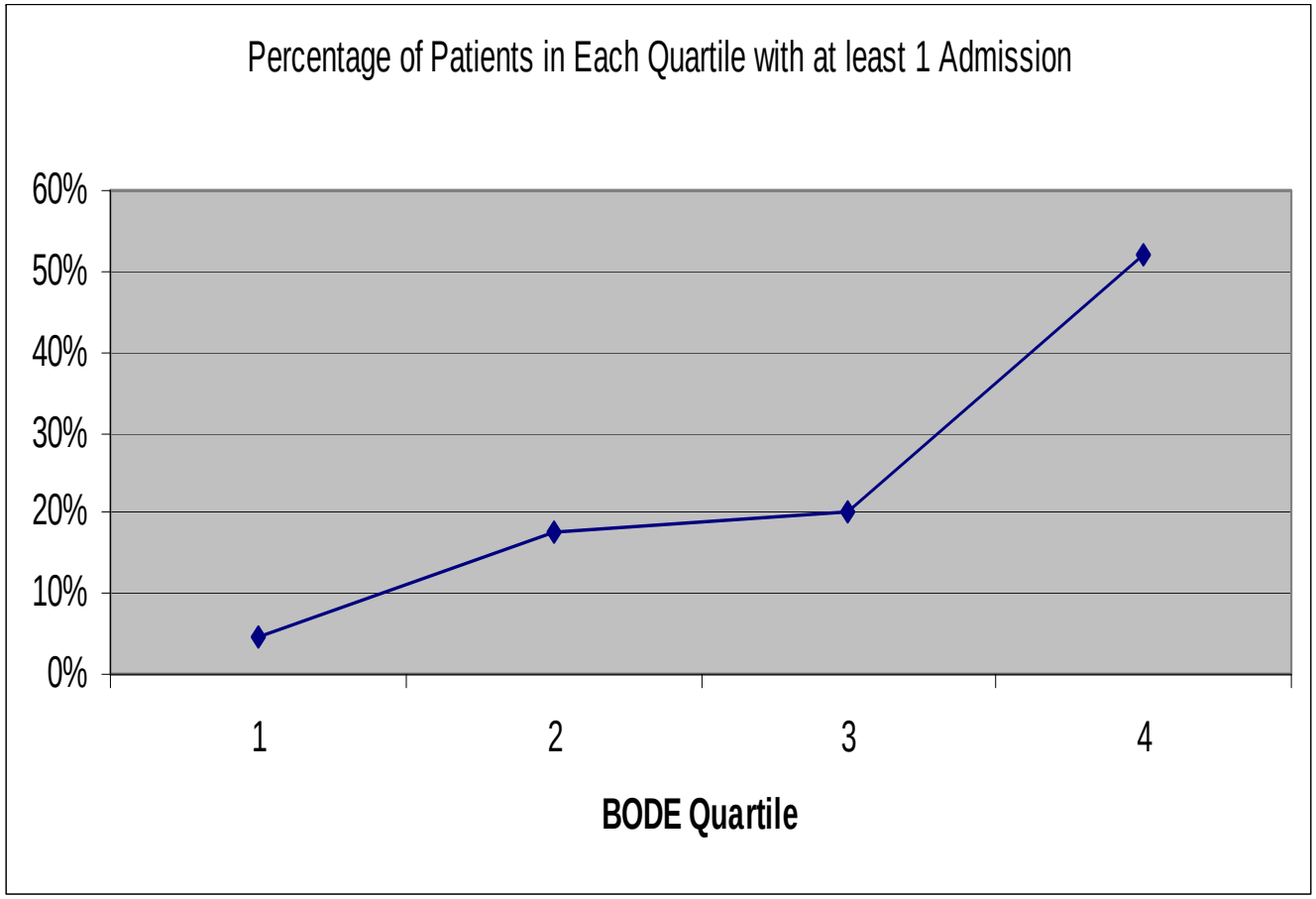
HCP COPD Disease Management Program Study Analysis

- Study Enrollment Summary
- 141 patients enrolled over 6 months
    - 94 Group patients
    - 47 patients with Independent Physicians
- Matched “intervention” and “control” groups
- Program Interventions implemented for Intervention Group (8/1/08-7/31/09)
- Return on Investment analysis comparing the Intervention and Control

Results of the HCP COPD Study

Date: 8/1/08-7/31/09	Control	Intervention	% Change
Total admits	57	40	30% reduction
Total beddays	190	115	39% reduction
Total ED visits	92	71	23% reduction
Cost of care (all paid-pmpm)	$7,070	$4,661	34% reduction
Total PCP visits	683	887	30% increase
Total Drug costs	$402,553	$415,154	3% increase

Value of BODE Reporting; Quartile and Admission Correlation



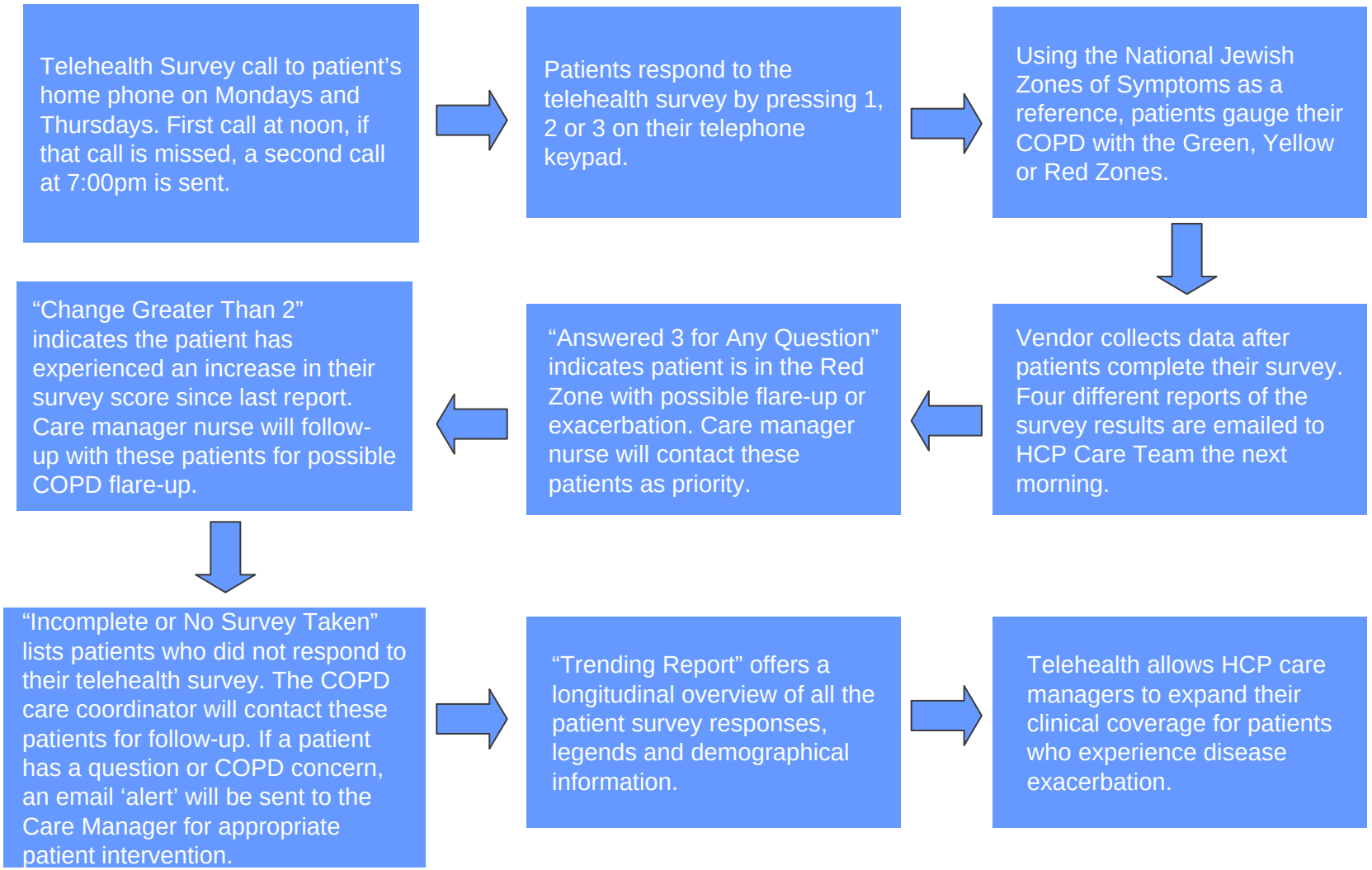
HCP Learning Lessons

- Opportunities to Improve the RN Workflow Process
  - Outreach frequency with Patients
    - BODE 4 Patients need more frequent monitoring
  - Manuel screening and tracking of patient status
    - Nurse calls and documents patient symptoms using the National Jewish Zones of Symptoms
- Patient related factors
  - Very Ill Patients
    - Some requested less frequent RN calls
    - A significant number (80) declined
  - Patients may recognize worsening symptoms – but still may not alert the RN or their PCP
    - “Didn’t want to bother” the Doctor or the RN
    - “Thought I would get better”

Strategy Toward Reducing COPD Readmissions

- Interactive Voice Recognition (IVR) technology can provide support for COPD clinical parameters to help identify and reduce disease exacerbations (Red and Yellow Zone Symptoms)
- IVR technology used “on top of” an existing patient-centric COPD program can expand nursing capacity and supplement other face-to-face or telephonic clinical interactions with patients.
- Offers scalable, user-friendly technology that allows older, chronically ill adults to live in their chosen residence with ongoing interaction with their healthcare team (PCP and RN).

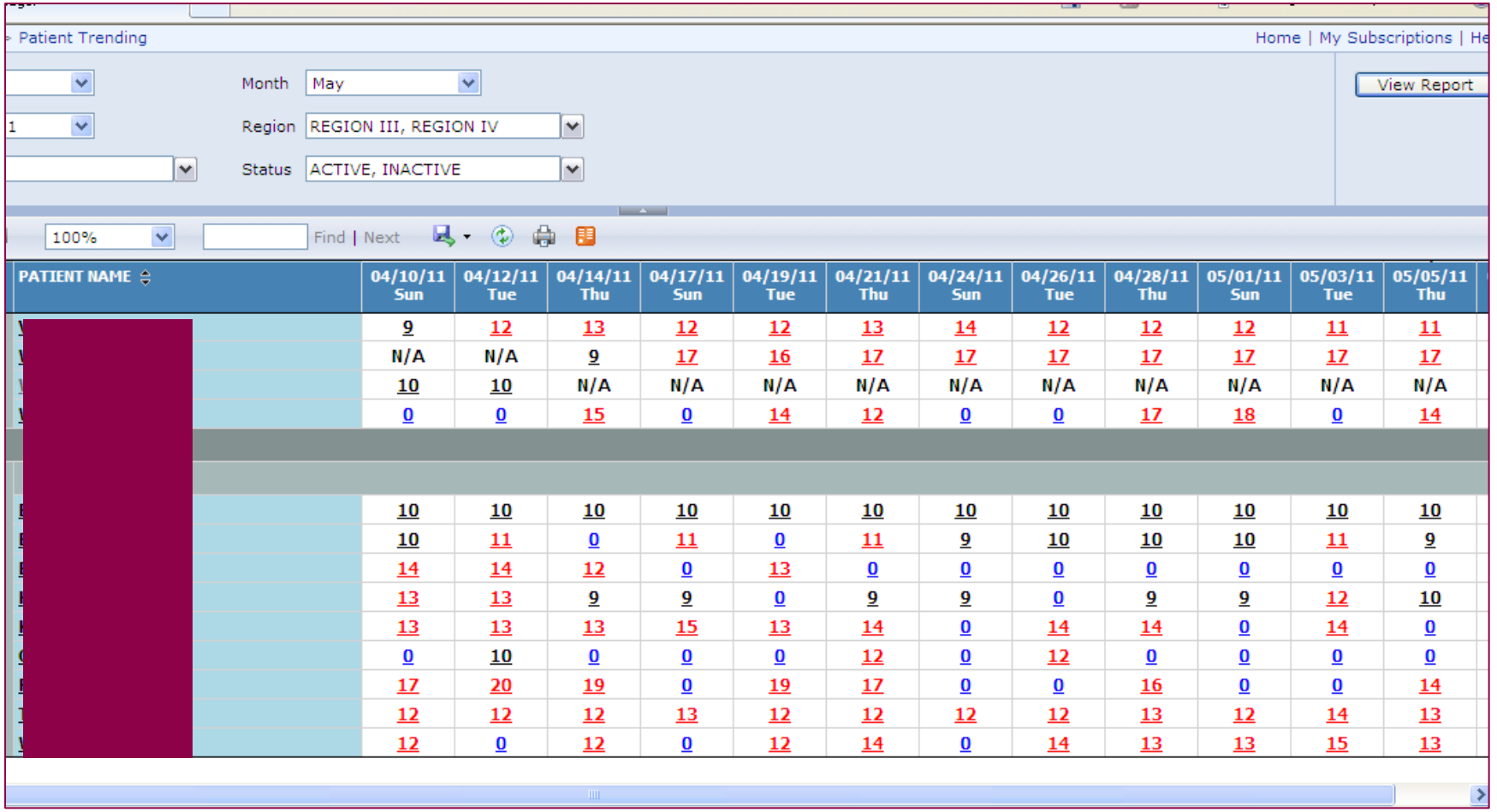
IVR Strategy for COPD Patient Monitoring



Strategy toward Reducing COPD Readmissions

- Allows for more frequent monitoring of patients
- Initially, 3 calls weekly
  - Not intrusive: brief calls that patients are willing to engage with
  - Avoid timely and complicated set up: Patient Uses their own phone (land-line phone or cell phone)
  - Convenient: calls occur either at noon with a back-up call early evening
  - Provides critical and actionable information for the RN
    - Survey captures yellow zone or red zone symptoms

COPD IVR Patient Monitoring

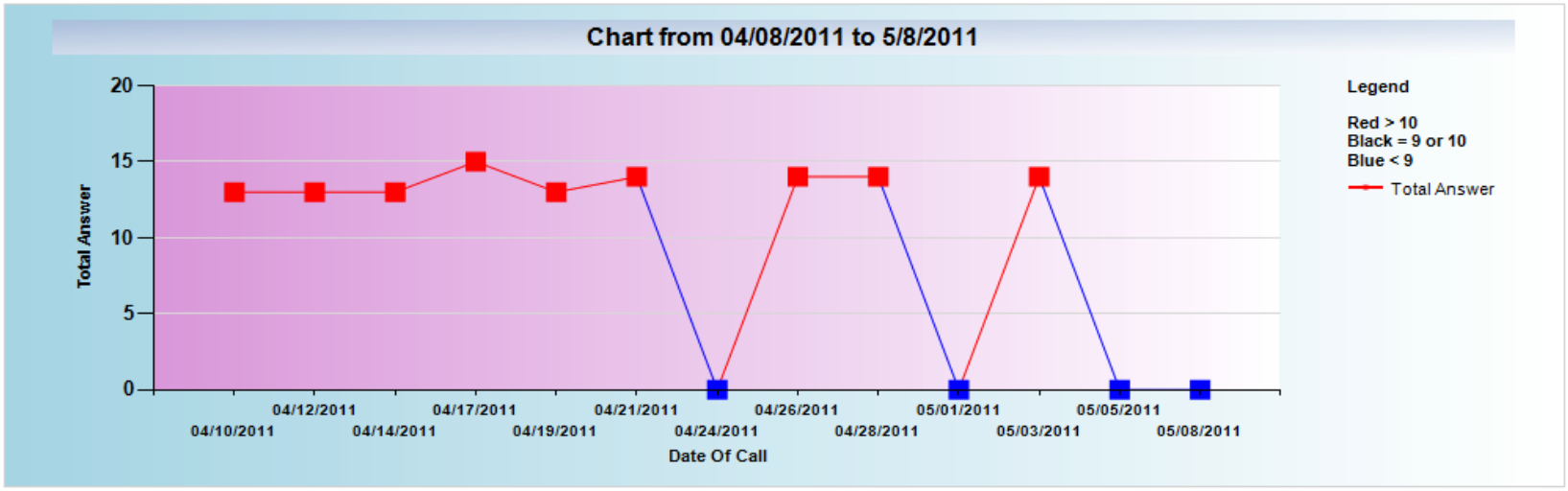


PATIENT NAME	04/10/11 Sun	04/12/11 Tue	04/14/11 Thu	04/17/11 Sun	04/19/11 Tue	04/21/11 Thu	04/24/11 Sun	04/26/11 Tue	04/28/11 Thu	05/01/11 Sun	05/03/11 Tue	05/05/11 Thu
[redacted]	9	12	13	12	12	13	14	12	12	12	11	11
	N/A	N/A	9	17	16	17	17	17	17	17	17	17
	10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	0	0	15	0	14	12	0	0	17	18	0	14
	10	10	10	10	10	10	10	10	10	10	10	10
	10	11	0	11	0	11	9	10	10	10	11	9
	14	14	12	0	13	0	0	0	0	0	0	0
	13	13	9	9	0	9	9	0	9	9	12	10
	13	13	13	15	13	14	0	14	14	0	14	0
	0	10	0	0	0	12	0	12	0	0	0	0
	17	20	19	0	19	17	0	0	16	0	0	14
	12	12	12	13	12	12	12	12	13	12	14	13
	12	0	12	0	12	14	0	14	13	13	15	13

COPD IVR Patient Reporting for RNs

hart from 04/08/2011 to 5/8/2011

Patient ID:	[redacted]	
Full Name:	[redacted]	
Address:	[redacted] WAY, BUENA PARK, CA 90620	
Phone:	[redacted]	
Doctor:	[redacted]	
Region:	REGION IV	
Calls Per Week:	3 - Sun,Tue,Thu	
Status:	ACTIVE	
	Begin Date	End Date
	04/05/2011	N/A



Strategy to Reducing COPD Readmissions

- **Learning Lessons:**
- Changed calling frequency for patient surveys based on patient feedback
- Now 2 calls or even 1 call a week for patients

- Patients more inclined to answer survey, less of an intrusion once we gave them flexibility.
- Increased patient ability to understand when they are having an exacerbation, and implement the COPD action plan.

Strategy to Reducing COPD Readmissions

- IVR Technology
  - Continues to expand the clinical capacity of our RNs; Expected Case Loads ~200 patients; 5% triggering follow up after every IVR survey
  - Supports the administration of Emergency Prescriptions; patients recognize worsening symptoms and are taking action
- RNs Report
  - IVR Reports are easy to read/actionable; “we know which symptoms the patient is experiencing”.
  - Frees-up time and allows the RNs to focus on pts. who are more at-risk for exacerbation

Patient Feedback Regarding IVR Technology

- IVR did not substitute a nurse call or face to face meetings with patients; only supplemented that activity
  - "Calls were easy."
  - "Did not take too much time."
  - "Helped me become more involved in my healthcare."

- IVR has encouraged patients to monitor their own symptoms; it has been more effective than our paper handout on Zones of Symptoms.
- IVR has encouraged patients to report symptoms of an exacerbation via the IVR survey when before a patient might have been hesitant to call his/her nurse.

Learning Lessons

- Patients/family need to know how to monitor for symptoms of exacerbation.
  - Until they are doing that, we cannot achieve optimal results
- IVR Technology is supporting that understanding and reinforcing the need for patients to self manage their own condition.

Follow up Questions

- What could we have done differently for our execution/logistical strategy?
- Can healthcare providers perceive this as a practical and time saving instrument for all of their patients with COPD?
- Should it be reserved for just those at high risk (for us, BODE 3s and 4s).
- Challenges with EHR integration. It was easier for us to build outside of our EHR, but shouldn't the data be integrated for the whole care team?
- What strategies have you implemented to ensure patient/family buy in (and participation)?

Further Critical Input

- How do we further enhance patient/family engagement/activation to help improve care delivery, improve health, and stabilize/reduce costs?
- How does one ramp up diffusion of telehealth throughout a large integrated care organization?
- Input on behavioral economics to enhance/facilitate better adherence to clinical treatment?
- What return on investment models have been developed to support a robust patient monitoring program?
- How many programs have incorporated physician protocols to improve real-time intervention and clinical outcomes?

Where are we Going Next…

- Return on investment analysis, evaluate clinical metrics.
- Diffuse to other geographic sites.
- Expand technology to include CHF.
- White papers, case studies, publications, presentations to seek critical input.

Acknowledgements

- Center for Technology and Aging, and the Gordon and Betty Moore Foundation for supporting this collaborative to share ideas and learn from each other.

- HealthCare Partners Team
  - Dr. Jeremy Rich, Director of the HCP Institute
  - Dr. Chan Chuang, Pulmonologist
  - Ms. Janelle Howe, Director Disease Management
  - Ms Lori Larson, COPD IVR Care Coordinator
  - HCP COPD Disease Management Nurses

Questions for Us?

Contact Information

- Dr. Jeremy Rich: jrich@healthcarepartners.com