


# Consumer eHealth Affinity Group



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

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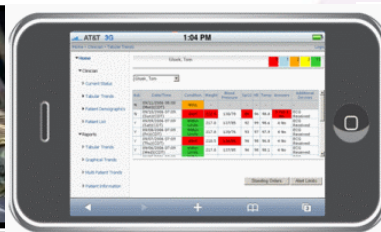
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HealthCare Partners Medical Group

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# 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



# 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
  - Electronic 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

Program enrollment														
Care Managers		Goals & actions		Encounters		Problems, Barriers and Dx		Labs & measures		Meds, Pharm & DME		Assessments		
Weight	ESRD	Blood pressure		PHQ9	Cholesterol	GFR scores	Diabetes monitoring		Vaccinations	COPD monitoring		COPD/BODE		Labs & measur
	Race	Age	Oxygen	Meters walked in 6 mins	Dyspnea MMRC scale	FEV1	FVC	FEV1 as % of pFEV1	COPD stage	Notes				
1	Non-black	77.00	<input type="checkbox"/>	416	Not troubled with ...	1.02	2.01	50.00	Stage III - Severe					
2			<input type="checkbox"/>											

**Score summary**

BMI score	<input type="text" value="0"/>	Obstruction score	<input type="text"/>	MMRC score	<input type="text" value="0"/>	Meters walked score	<input type="text" value="0"/>	
Total points	<input type="text" value="2"/>	BODE index quartile	<input type="text" value="1"/>	4 year survival probability	<input type="text" value="82.00"/>	%	Predicted FVC	<input type="text" value="2.71"/>
Predicted FEV1	<input type="text" value="2.04"/>	Predicted FEV1%	<input type="text" value="75.00"/>	%	FEV1/FVC	<input type="text" value="0.51"/>		

- 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

Care Managers		Goals & actions	Encounters	Problems, Barriers and Dx	Labs & measures	Meds, Pharm & DME	Assessments	Tasks	Pathways
Weight	CHF monitoring	CHF labs	Diabetes monitoring	COPD monitoring	COPD/BODE	Labs & measures preferences			
	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 smol			
3									

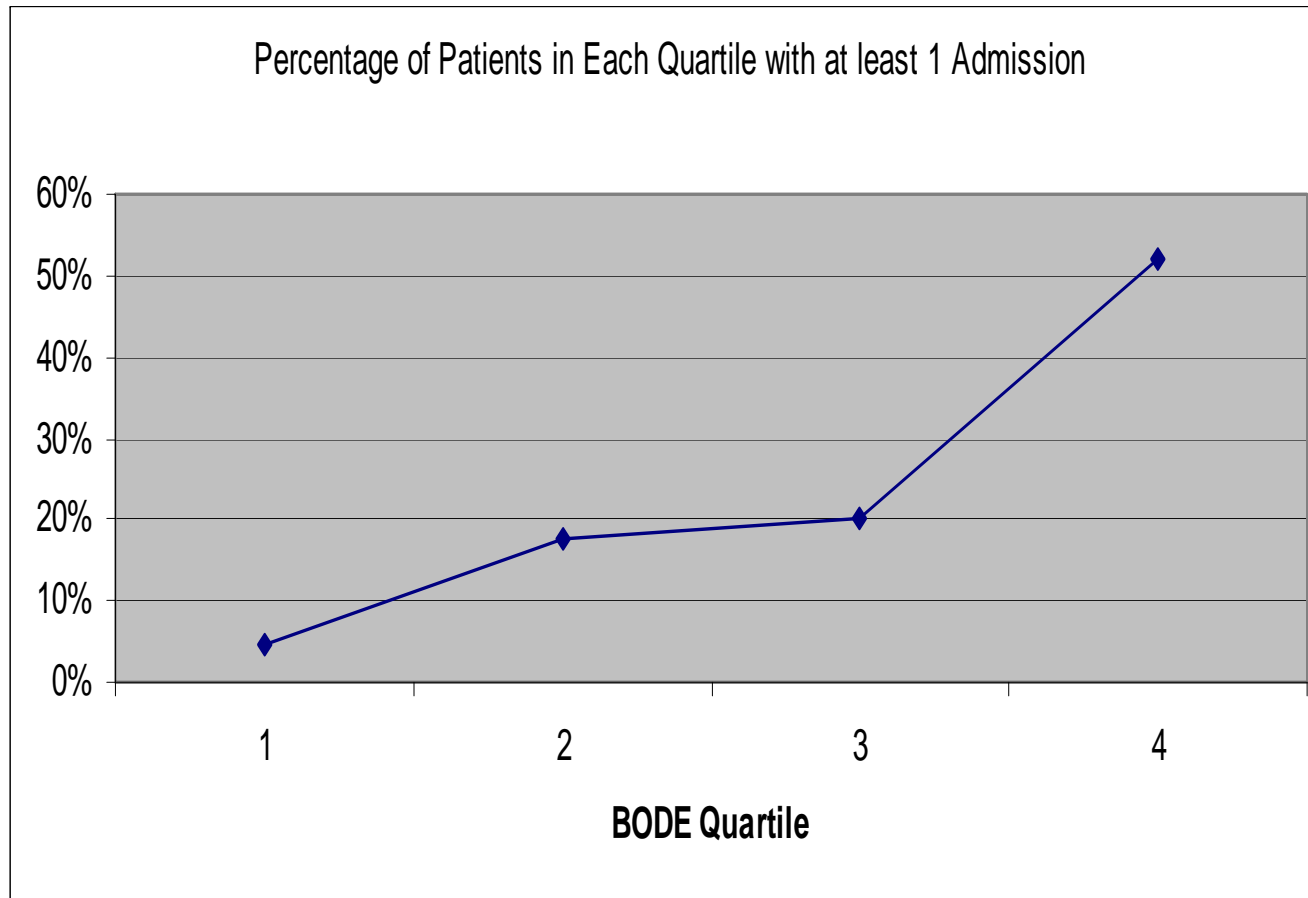
# HCP COPD Disease Management Program Study Analysis

- 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:	Control	Intervention	% Change
8/1/08-7/31/09			
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



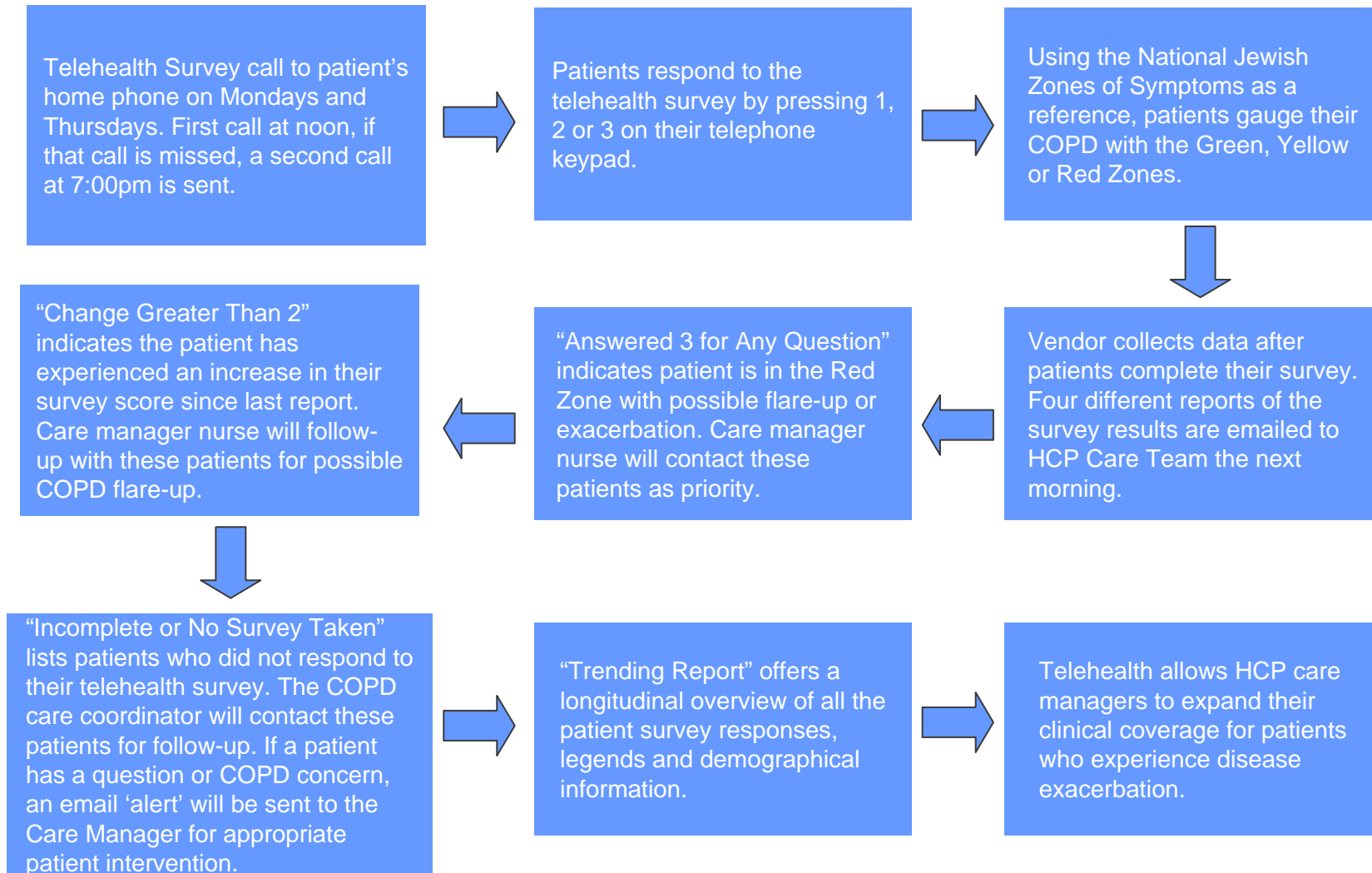
# HCP Learning Lessons

- Opportunities to Improve the RN Workflow Process
  - Outreach frequency with Patients
    - BODE 4 Patients need more frequent monitoring
  - Manual 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 Trending Home | My Subscriptions | Help

Month: May  
 Region: REGION III, REGION IV  
 Status: ACTIVE, INACTIVE
View Report

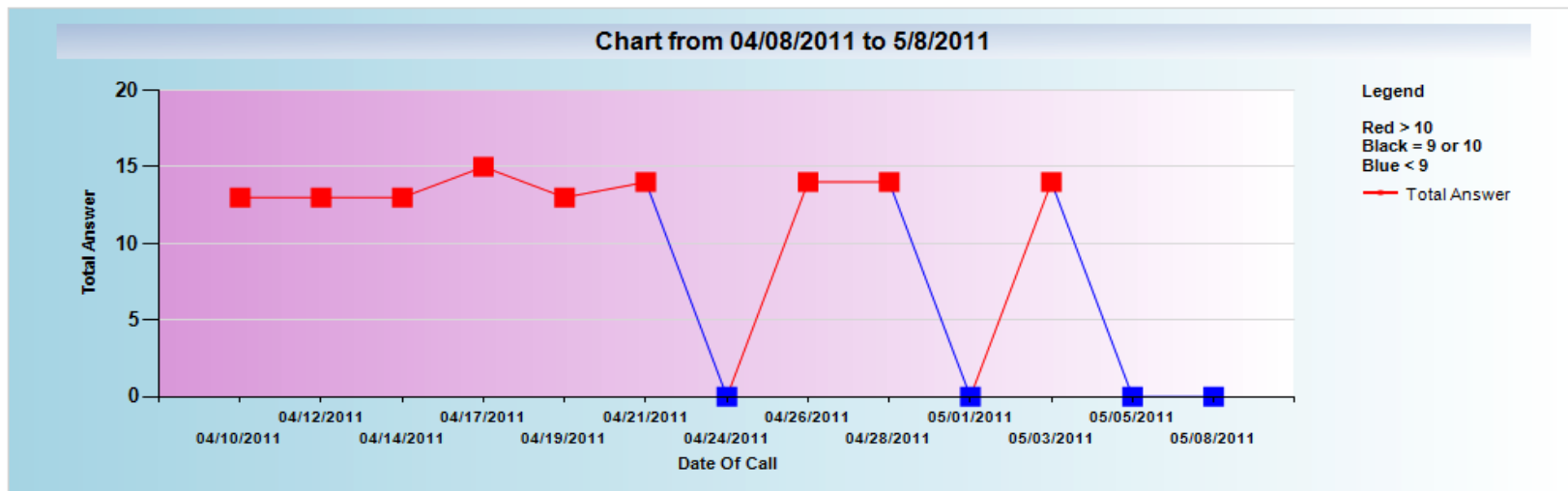
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PATIENT NAME	04/10/11 Sun	04/12/11 Tue	04/14/11 Thu	04/17/11 Sun	04/19/11 Tue	04/21/11 Thu	04/24/11 Sun	04/26/11 Tue	04/28/11 Thu	05/01/11 Sun	05/03/11 Tue	05/05/11 Thu
[REDACTED]	9	12	13	12	12	13	14	12	12	12	11	11
[REDACTED]	N/A	N/A	9	17	16	17	17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

# COPD IVR Patient Reporting for RNs

Chart 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

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  - Dr. Jeremy Rich, Director of the HCP Institute
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  - Ms. Janelle Howe, Director Disease Management
  - Ms Lori Larson, COPD IVR Care Coordinator
  - HCP COPD Disease Management Nurses

# Questions for Us?

## Contact Information

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