



# REDUCING THE IMPACT OF COPD ON ACO'S THROUGH POST ACUTE RESPIRATORY CARE

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## Midwest Accountable Care Expo

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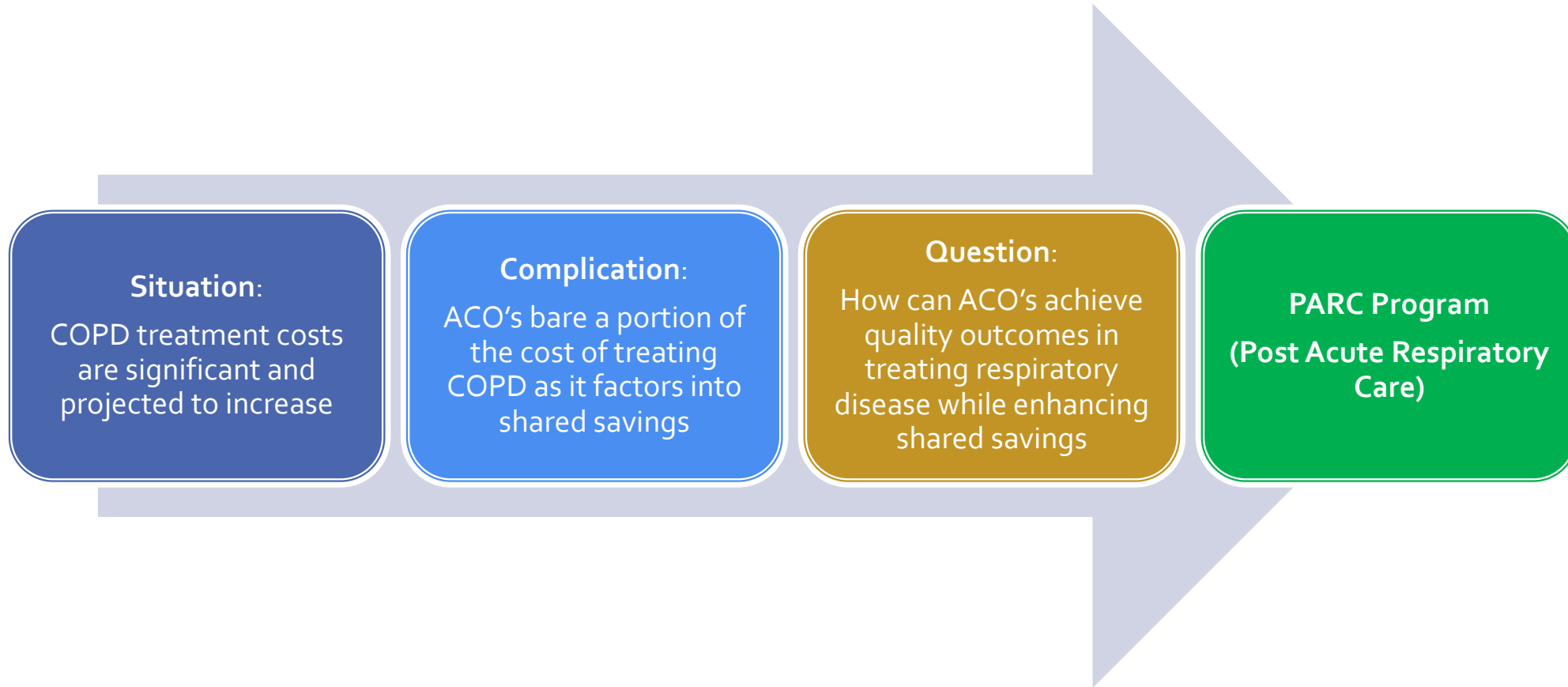
**VieMed.com**

# About VieMed

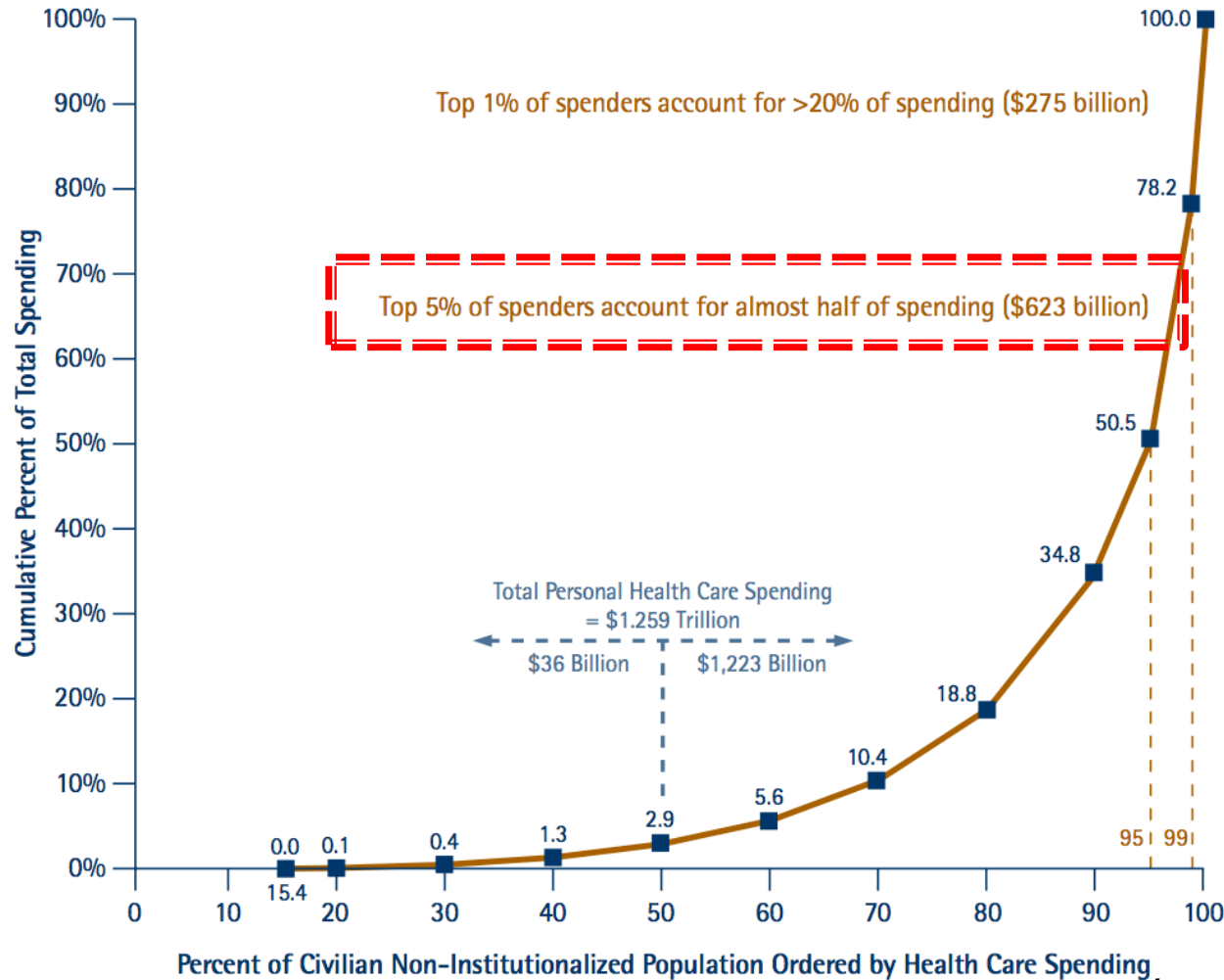
We are a Respiratory Disease Management company that leads the nation in care quality in the home.

- Largest home NIV provider in US
- 20 states covered
- Collaborative care model focused on compliance and comfort
- Full line of respiratory disease management devices including NIV, BiPaP, CPaP, Percussion Vest, Cough Asst, etc.

# Contents



# COPD treatment costs are significant with a small % of patients comprising a high disproportion of costs



## COPD Costs

Costs attributable to having COPD were \$32.1 billion in 2010 with a projected increase to \$49.0 billion by 2020.

**\$32.1 BILLION** (2010) | **\$49.0 BILLION** (2020)

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**51% Medicare**  
**25% Medicaid**  
**18% Private Insurance**

Medicare paid 51% of those costs with 25% paid by Medicaid and 18% by private insurance in 2010.

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**\$3.9 BILLION**

Total absenteeism costs were \$3.9 billion in 2010 with an estimated 16.4 million days of work lost because of COPD.

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State medical costs attributable to COPD ranged from \$42.5 million in Alaska to \$2.5 billion in Florida in 2010.

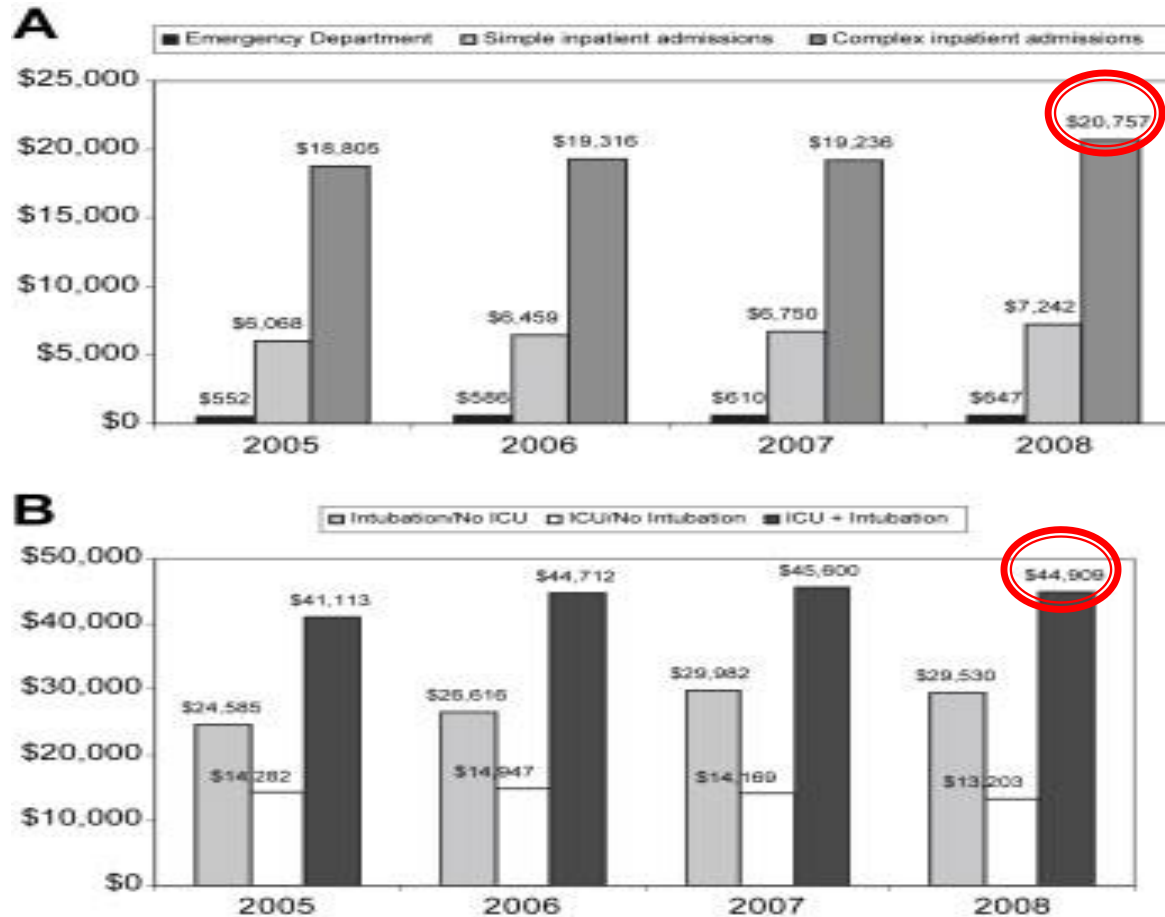
**\$42.5 MILLION** (Alaska) | **\$2.5 BILLION** (Florida)

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U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

[www.cdc.gov/copd](http://www.cdc.gov/copd)

# Hospitalizations are expensive ranging up to over \$44,000 in 2008 dollars and more than 25% have at least one annually.



- Complex ED admission even without ICU or intubation cost over \$20k per hospitalization in 2008 dollars
- ICU/Intubation more than doubles the cost
- Depending on the population studied, an estimated 25–47% of patients with COPD are hospitalized and as many as 26% have emergency room visits annually.<sup>1,2</sup>

1. D.W. Mapel, J.S. Hurley, F.J. Frost, *et al.*, Health care utilization in chronic obstructive pulmonary disease. A case-control study in a health maintenance organization, *Arch Intern Med*, 160 (2000), pp. 2653–2658  
 2. J. Menzin, L. Boulanger, J. Marton, *et al.*, Economic burden of chronic obstructive pulmonary disease in a Medicare population, *Respir Med*, 102 (2008), pp. 1248–1256  
 obstructive pulmonary disease: the state Medicaid perspective, *Respir Med*, 100 (2006), pp. 996–1005

# Hospitalizations are frequent with costs being much higher for more severe cases.

•Cost increases with disease severity: inpatient costs of patients with stage III disease are **double** those of patients with stage II disease and **6.5 times greater** than those of patients with stage I disease.<sup>3</sup>

•Various observational studies have found that **inpatient care accounts for 52–70%** of the direct medical costs of COPD.<sup>1,2,3,4</sup>

•“Despite efforts to reduce the burden of COPD, total hospitalizations and ED visits over the past decade have increased for COPD, and the age adjusted rates of hospitalizations and ED visits for COPD ...have not changed significantly ...”  
CHEST 2015; 147(4): 989 - 998



## Key Questions

- What should we do to avoid a complex ED (re)admission that can cost upwards of \$40,000?
- How do we stay ahead of 1<sup>st</sup> time admissions?
- How should the plan vary according to each patient's severity of disease?
- How do we apply this action across all our ACO patients? How do we do so on an on-going basis?
- How will these actions also impact the quality measures against which an ACO is evaluated?

1. T.S. Foster, J.D. Miller, J.P. Marton, *et al.*, **Assessment of the economic burden of COPD in the U.S.: a review and synthesis of the literature**, COPD, 3 (2006), pp. 211–218  
2 M.T. Halpern, R.H. Stanford, R. Borker, **The burden of COPD in the U.S.A.: results from the Confronting COPD Survey**, Respir Med, 97 (Suppl. C) (2003), pp. 81–89  
3D.E. Hilleman, N. Dewan, M. Malesker, *et al.*, **Pharmacoeconomic evaluation of COPD**, Chest, 118 (2000), pp. 1278–1285  
4 J.P. Marton, L. Boulanger, M. Friedman, *et al.*, **Assessing the costs of chronic obstructive pulmonary disease: the state Medicaid perspective**, Respir Med, 100 (2006), pp. 996–1005

**COPD costs can be mitigated through Post Acute Care applied in varying degrees depending on stage and these patients can be identified in advance.**

**“Patients discharged home without home healthcare were more likely to be readmitted for COPD than patients discharged to Post Acute Care (31% vs. 19%).”<sup>1</sup>**

**“Exacerbations of COPD requiring hospital admission occur across all stages of airflow limitation and are a significant prognostic factor of reduced survival across all COPD stages. Patients with COPD at a high risk for hospitalization can be identified by their past history for similar events, and other factors....”<sup>2</sup>**

<sup>1</sup> [Chest](#) (Impact Factor: 7.13). 12/2014; DOI: 10.1378/chest.14-2181Source: [PubMed](#)

<sup>2</sup> TRIAL REGISTRY: [ClinicalTrials.gov](#); No.: NCT00292552; URL: [www.clinicaltrials.gov](#) CHEST2015; 147(4): 999 – 1007

Non-invasive ventilation (NIV) modes like AVAPS-AE on the Respironics Trilogy have been demonstrated to significantly reduce hospital readmissions for severe COPD patients.

**Results from "Retrospective Assessment of Home Ventilation to Reduce Rehospitalization in COPD"<sup>1</sup>**

Number of COPD-related admissions	Pts with admission in the year prior to NIV program	Pts with admission in the year post NIV Program
0	0	348 (88%)
1	0	40
2	397 (100%)	9

**These outcomes were achieved in a multi-faceted program that included, in addition to AVAPS-AE, medication, O<sub>2</sub>, patient education and RT lead care.**

<sup>1</sup> The Journal of Sleep Medicine, Vol 11, No. 6, 2015, Coughlin, Liang, Parthasarathy



# AVAPS-AE Overview

Heather England, RRT

# VieMed's PARC™ Program

- Direct patient care delivered through RT's only and all are trained as COPD educators.
- Advanced technology devices such as NIV that offer unique respiratory algorithms that assist the full exhalation of CO<sub>2</sub> for late stage COPD patients
- RT staff consultation to help create care plans in the hospital, clinic or home to be part of the solution to keep our patient happy, healthier and free to pursue their lives.
- High-touch compliance program involving frequent home visits by an RT to collect respiratory and utilization data from devices and report results to physician to stay ahead of condition

## Our ACO Offering holds us accountable to the ACO

- Guaranteed service levels E.g.) Ventilator set-ups within 24 hours, dedicated RT 24x7 with back-up, etc.
- Integration and data sharing as required by the ACO.
- Monthly update (and as requested) reports on each patient.

# We are committed to maintaining a WIN-WIN collaboration focused on helping an ACO achieve high marks on quality measures and a positive impact on shared savings.

Value Opportunity	VieMed Value-Add
<b>Quality Category:</b> Patient/Caregiver Experience	93% of patients report “better breathing” and over 90% state they are “happy” or “very happy” with VieMed therapy.
<b>Quality Category:</b> Preventive Health	VieMed gets involved at front-end of hospital admission to ensure effective transition into home. High-touch compliance program provides frequent in-person and/or telemedicine interaction with patient to stay ahead of condition and recommend to ACO further measures.
<b>Quality Category:</b> 30-day readmission rate	30-day readmission from SNF now a quality measure. Setting up patient on NIV loaner while in SNF and then again once transition to home makes exacerbation while in SNF less likely. Overall 30-day readmission rate for Stage 3/Stage 4 COPD only 5.7%.
<b>Shared Savings</b>	We realize all this must be done with a positive impact on shared savings. Savings in hospitalization cost must be greater than spend on preventive measures. VieMed will work with you on the front-end to quantify potential savings on your most severe COPD patients if a therapy such as NIV is applied.

# VieMed can assist the ACO in determining the ROI of the care plan for each patient and transitioning them onto the prescribed therapy.

Front-End analysis of COPD patient population

- Provide cost/benefit analysis of certain therapies (e.g., NIV) on each patient.
- Assist in determining care transition plan for each patient followed by execution

On-going Patient Identification

- Hospital to Home Transition

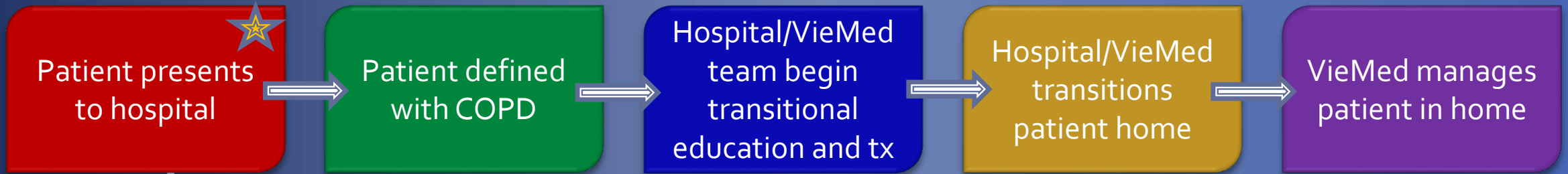
Illustrative

Patient ID	Patient Name	2014 COPD attributable costs	# hospitalizations last 6 months	PaCO2 (mmHG)	FEV1	Recommendation	Annual Preventive Costs	Potential Savings
1ZBX3	Redacted	\$ 62,419	1	62	52%	NIV	\$ 14,400	\$ 48,019



# Proposed work stream for post acute events

## Hospital to Home Transition



Patient enters care at ER/Physician Group/Etc

- Discharge process begins
- In-hospital treatment starts
- Pt record collection/ext begins
- Pt monitoring begins
- VieMed contacted

Follow predefined course of tx based on COPD staging

- Upon dx, hospitalist /pulmonologist prescribes the course of therapy.
- Hospital and VieMed begin to collect necessary rx signatures, documentation, etc.
- Meeting scheduled between pt, hospital, VieMed and care-givers

VieMed Care Coordinator meets with pt to begin education

- VieMed educates pt and caregiver.
- Documentation continues
- Home and care giver evaluation completed.
- Transition paperwork completed and discharge date planned.

Prior to discharge pt to receive next step in tx program

- Final evaluations at hospital taken and logged.
- Pt placed on tx devices for acclimation.
- Discharge papers finalized
- Pt leaves for home.

Pt begins in-home program with daily monitoring and support

- VieMed starts monitoring protocol
  - Daily checks/doc
- At 30 day mark, monitoring may be adjusted based on pt compliance levels
- Ongoing pt education, tx and support as defined by patient

Thank you.