Hospital to Home; Reducing COPD Readmissions

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Objectives

1. Recognize NIV therapies designed to manage the COPD patient in the acute care setting.
2. Understand how they transition into the home environment.
3. Understand how they play a role in decreasing readmissions.
Managing COPD patients is a major issue

Growing COPD population

More than 12 million Americans diagnosed

Up to 24 million May be undiagnosed


Changing COPD reimbursement

Medicare has recently made readmissions a major performance indicator needed for full reimbursement
Today’s healthcare landscape should connect hospital and home

A smooth transition to home-based care will empower the care team to do more
Preventable COPD readmissions remain high

Of 1 million COPD admissions for acute exacerbation in 2012, 23% were readmitted to the hospital within 30 days.1

And your institution may be financially responsible

In 2015, Medicare fined a record number of 2610 hospitals nationwide.

78% of hospitals will be penalized.

Penalties by state

Penalties by state

ALABAMA

Average Hospital Penalty

0.63%

Penalties by state

FLORIDA

Average Hospital Penalty

0.58%

Penalties by state

MISSISSIPPI

Average Hospital Penalty

0.70%

Why is this important?

Hospital

Average Profit Margin

3-5%

What happens when COPD patient is admitted?
COPD Cycle

1. Exacerbation → Hospitalization
2. NIV: BiPAP
3. ABG’s
4. Adjustments as needed; more ABG’s
5. Patient improves
6. Discharged
7. Exacerbation → Hospitalization
What if you had a better way?

A way to adjust the therapy when’s the patient’s condition changes?

A way to insure more comfortable synchrony in face of leaks

A way to keep the patient out of the hospital?
What if you could reduce those readmissions within the penalty period?
# Noninvasive Ventilation

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<td>IPAP Max up to 50 cmH(_2)O</td>
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<td>1 – 5 cmH(_2)O/min</td>
<td>Adjustment</td>
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**Trilogy AVAPS-AE**

- Auto Pressure Support up to 50 cmH\(_2\)O
- Auto EPAP
- PS Max / PS Min
- EPAP Max / EPAP Min
- Auto Rate
- Synchronized with zero flow technology
- Tidal Volume
- AVAPS Rate Adjustment 1 – 5 cmH\(_2\)O/min
Bi-Level devices
What you need to understand

Provides a pressure but a *variable volume* delivery.
AVAPS Provides variable PS but a consistent volume.
AVAPS Algorithm

- Set a target tidal volume
- Comparison of the averaged Vte with target Vte
- Automatically adjusts IPAP to maintain a consistent Vt
- Progressive increase of the IPAP ($\leq 1\text{cmH}_2\text{O/min}$) results in increased Vt
Trilogy AVAPS- AE

AVAPS-AE is a auto-titration mode of noninvasive ventilation designed to better treat respiratory insufficiency patients (OHS, COPD and NMD) in the hospital and homecare environments

• **Auto EPAP**
  – Maintain airway patency

• **Auto Breath Rate**
  – Matches patients spontaneous rate
  – Zero Flow technology
  – Minimizes breath stacking

• **Auto Trak**
  – Leak compensating algorithm
  – Resets trigger and cycle
  – Maintain patient synchrony; increase comfort
AVAPS enhancements

• **Flexible**
  – Clinicians can now select AVAPS rate of change from 1.0 to 5.0 cm H₂O of pressure based on patient need

• **Stable Vt**
  – AVAPS now tracks spontaneous and timed breaths separately
  – Applies correct amount of pressure support to each breath type

• **Accurate**
  – Enhanced leak estimation algorithm in Trilogy
  – Better leak estimation means better Vt tracking and targeting
AVAPS-AE
Maintaining tidal volume and airway patency

Resistance

Target Vt

PS max

PS min

IPAP

EPAP

EPAP max

EPAP min
Multifaceted COPD program shown to improve care

Proven to reduce readmissions

In a review of 398 COPD patients*

88% reduction in hospital readmissions

*All receiving NIV and meeting program eligibility requirements. All subjects were admitted at least twice in the prior 12 months before enrollment.
Proven to reduce costs

In a review of 398 COPD patients*

719 fewer hospital readmissions in the year following enrollment

Saving approximately $8 million$\textsuperscript{1}

*All receiving NIV and meeting program eligibility requirements. All subjects were admitted at least twice in the prior 12 months before enrollment.

Hospital Response

Teams Targeted to Reduce COPD Readmissions

• **Transition of Care Teams**
  – Case Managers, Discharge Planners, RT, DME and Home Health, Nurse Manager/Analyst

• **COPD Educators**
  – Full or Part-time
  – May work with TOC team

• **COPD Navigators**
  – Active in Discharge planning
Hospital Response

Increased Communication

• **Quarterly Meetings**
  – All involved parties

• **Accountability**
  – Patient follow-up and compliance

• **Outcomes reporting**
  – Transparency
Needs for RT Staff

• Understand the equipment and related technologies

• Understand Manufacturer differences/algorithms

• Be comfortable and confident in serving as a resource to physicians, mid-level providers and discharge planners

• Focus on Outcomes and Value