

## Proactive Approaches to Respiratory Care

Utilizing emerging technologies to improve both the health of the hospital & the health of the patient.

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## The changing face of healthcare delivery

As we move from the traditional “Fee for Service” model towards an Outcome Based Medicine model we must consider:

The health and well being of the *patient*

As well as,

The health and well being of the *hospital*

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## Proactive Approaches to Respiratory Care

### Goals

- Review basics of the Healthcare Reform Act
- Gain an understanding of what impacts Hospital reimbursement
- Identify how Respiratory Care practices can have a positive impact on the health of the hospital as well as the patient.
- Discuss potential proactive approaches for respiratory care

## Health Care Reform

March 2010 - **Patient Protection and Affordable Care Act (ACA)** – one of the largest American health reform initiatives in history was approved.

- ❖ Central to the PPACA is **value-based purchasing** programs.
- ❖ Physicians, hospitals, ambulatory surgery centers, psychiatric hospitals, rehabilitation hospitals and skilled nursing facilities will all be subject to **value-based payments**.

## Value Based Purchasing

### **Value Based Purchasing**

Value is considered a function of quality, efficiency, safety & cost

- Includes measures to determine how closely hospitals follow best clinical practices and how well hospitals enhance patients' experiences of care.
- when hospitals follow these types of proven best practices, patients receive *higher quality of care* and see *better outcomes*

## Value Based Purchasing

### **13 clinical process-of-care measures used in 5 health categories**

Acute myocardial infarction  
Heart failure  
Pneumonia  
Healthcare associated infections  
Surgical care improvement

### **8 measures from the HCAHPS**

(hospital consumer assessment of health care providers)

to reflect how patients view their care experience

## Value Based Purchasing

**Incentive Payments will be based on**

**Clinical Outcomes – 70%**  
**Patient Satisfaction – 30%**



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## Hospital Readmissions Reduction Program

### Hospital Readmissions Reduction Program (HRRP)

- ❖ Establishes a financial incentive for hospitals to lower admission rates
- ❖ Intended to reduce preventable hospital readmissions
- ❖ Starting October 1, 2012

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## Hospital Readmissions

On average, about **20%** of Medicare patients discharged from hospitals in the United States will be readmitted to a hospital within 30 days, **34%** within 90 days.

A New England Journal of Medicine study reported states with

higher readmission rates: NJ (**21.9%**), Louisiana (**21.9%**) & Illinois (**21.7%**)

lower readmission rates: Oregon (**15.7%**), Utah (**14.2%**) & Idaho (**13.3%**)

In 2008, one in five nonsurgical cases had a 30 day readmission, compared to one in eight surgical patients.

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## Hospital Readmissions

Under the current plan 3 conditions will be monitored

**Heart failure**

**Acute myocardial infarction**

**Pneumonia**

The intent is add more conditions to the plan in **2015**



Penalties to be incurred

**1% 2013**

**2% 2014**

**3% 2015**

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## Readmission data

### Current data

30 day readmission rates for specific conditions

Heart failure	<b>26.9%</b>
Pneumonia	<b>20.1%</b>
COPD	<b>22.6%</b>
Psychoses	<b>24.6%</b>



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## Hospital Costs

### Average Costs

per hospital stay	\$14,427 *
per hospital day	\$3,612*
Per ICU stay (non-ventilated pts)	\$12,931**
Average LOS in ICU(non-vented pts)	8.5 days**
1 day increase in LOS in ICU	\$2,401***
1 day increase in LOS on floors	\$1,122***

\*data from 2010 International Federation of Health Plans, \*\* CCM 2005 Dasta JF, et al.

\*\*\*Candrilli & Mauskopf RTI Health Solutions "How Much Does a Hospital Day Cost?"

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## Healthcare Trends

The following trends have been observed across the country as a result of decreased reimbursement to acute care hospitals:

- **Decreased length of stays**
- Decreased referrals to specialty services
- **Creation of clinical pathways to standardize care and facilitate timely care**
- Creation of new positions, such as case managers or patient care coordinators to ensure efficient quality care
- Increased contractual relations among hospitals, physician groups, and managed care organizations

**“Everyone is in the same department – the department of patient care”** - CEO Chester County Hospital

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## Healthcare Reform

Healthcare reform initiatives require clinicians to seek or develop proactive approaches to patient care.

In order for these approaches to have an impact on the health of the hospital they **must enhance patients' experiences of care and improve care outcomes** (decreasing length of stay or preventing escalation of care) which will ultimately result in an overall higher quality of patient care.

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## Improving outcomes: Building a proactive model

Proactive, outcome based care is centered on **Restoring the Natural Balance** in the patient

The goal of **proactive-outcome based** care is to

Improve patient outcomes – prevent escalation of care

Decrease length of stay

Minimize opportunity for bounce-back to hospital or ICU

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## RT Proactive approaches

### Identify

Identify at risk patients: those whom you can impact their care, notably respiratory therapy patients & also those that have a greater impact on hospital health

~noted in the Health Care reform bill the following conditions are now being closely monitored: ***Pneumonia, hospital acquired infections, surgical care, heart failure, AMI***

Other high risk patient groups: ***COPD, neuromuscular, trauma, post CABG, pulmonary fibrosis, post anesthesia, surgical patients long term patients, stroke, failure to wean.***

***..Be Proactive***

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## RT Proactive approaches

### Identify

Common threads amongst the identified high risk patients

*Increasing Oxygen Needs*

*Impaired mucociliary clearance*

*Increased Respiratory demand or WOB*

*Atelectasis*



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## Identify conditions which have adverse clinical outcomes

3 clinical studies have demonstrated the effect of **impaired secretion clearance** on adverse clinical outcomes for

### 1. post-op atelectasis<sup>1</sup>

Minor atelectasis occurs when rates decrease to 67%

Major atelectasis occurs when rates decrease to 53%

### 2. pulmonary complications<sup>2</sup>

*The slower clearance the greater the risk of pulmonary complications*

clearance rates 4.3mm/min no complications: 0.82mm/min developed complications

### 3. hospital length of stay<sup>3</sup>

*slower clearance rates equals increase LOS*

fastest clearance LOS 5-8 days

medium clearance LOS 9-11 days

slowest clearance LOS 12-14 days

<sup>1</sup> Gamsu 1976; <sup>2</sup> Konrad 1976; <sup>3</sup> Nakagawa 2005

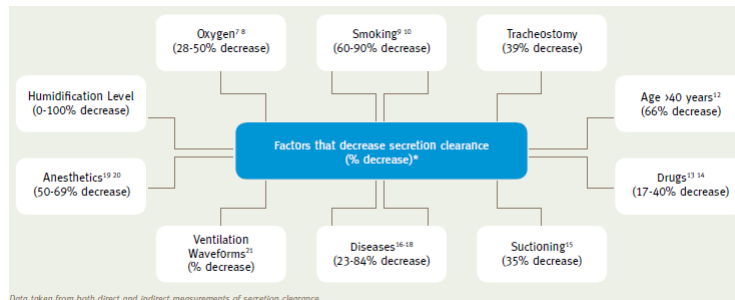
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## Identifying patient risk factors

**Impaired secretion clearance rates adversely effects patient outcomes.**

*What factors influence clearance rates?*

AGE, SLEEP, SMOKING, DISEASE STATES: COPD, DIABETES, HIV, AUTO-IMMUNE, CLINICAL INTERVENTIONS: ANESTHESIA, INTUBATION, TRACHEOSTOMY, VENTILATION PATTERNS, OXYGEN, MEDICAL GASES, SUCTIONING, DRUGS



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## Identify – Anticipate – Personalize ..Be Proactive

### Anticipate

**Develop care plans based on knowledge of disease process**

### Anticipate expected outcomes

Example: Post CABG patients typically suffer from atelectasis, lobe collapse, increased work of breathing due to splinting, cilia insufficiency due to anesthesia or dry medical gas, secretion mobility impairment

Plan to provide lung expansion therapy, secretion mobilization therapy, restore natural balance in the airway and effective oxygenation therapy.

**..Be Proactive**

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## Proactive Measures & Success strategies

Category	Author	Topic	Clinical Impact	Potential Outcomes
Lung Mechanics	Corley	Impedance Tomography with Optiflow	Optiflow increases lung volumes (FRC)	Can reduce risk of atelectasis
Lung Mechanics	Parke	Airway Pressure delivery with Optiflow	Optiflow increases mean airway pressure	Improved oxygenation
Mucociliary Transport	Hasani	Humidification improves mucociliary clearance	Optiflow increases mucociliary clearance	Can reduce risk of infection
Mucociliary Transport	Rea	Humidity therapy with COPD	Decreased exacerbation days and antibiotic use	Optiflow improves COPD outcomes
Oxygenation	Fontanari	Cold dry vs dry vs humid air in normal individuals	Cold dry or dry air cause bronchoconstriction	Cold dry or dry air cause bronchoconstriction
Oxygenation	Kuo	Aerosol, humidity and oxygenation	Can increase PaO <sub>2</sub> for similar FiO <sub>2</sub>	Improve oxygenation and reduce weaning time
Oxygenation	Roca	Oxygen delivery: Mask vs NHF	Reduced respiratory rate and increased PaO <sub>2</sub>	Reduced respiratory rate and increased PaO <sub>2</sub>

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## Identify – Anticipate – Personalize ..Be Proactive

### Improving Outcomes

Once we have identified the at risk and chronic patient we can take a proactive approach to improving outcomes

Use a multi-disciplinary team approach to determine short and long term goals for the patients health. Involve discharge planners early on.

- Identify at risk patients
- Anticipate their respiratory needs for optimal outcomes
- Personalize the care plan with a proactive model

*..Be Proactive*



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## Improving Outcomes

### **Preventing Escalation**

**Parke** demonstrated: fewer escalations of therapy to NIV with patient's receiving NHF (10.3%) compared to HFFM (44.4%)  
fewer decreases in saturation occurred with patients allocated to NHF 42% versus 71% HFFM

### **Reduction in length of stay**

**Whitten** demonstrated by humidifying NIV and application of Optiflow:  
4.4days reduction in ALOS for BiPAP pts  
41% reduction in direct cost for BiPAP pts  
9% decrease in ventilator usage

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## Improving Outcomes

### **Reduction in Hospital Readmissions**

**Rea** demonstrated patients wearing NHF had:  
A decrease in mean time to 1<sup>st</sup> exacerbation with from 52 days to 27 days  
a decrease in the number of exacerbations by 54%  
a decrease in frequency of exacerbation by 81%

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## Summary

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The tenet of the Affordable Care Act is when hospitals follow proven best practices, patients receive *higher quality of care* and see *better outcomes*

*Fisher & Paykel Healthcare* offers products which allow clinicians to make positive impacts affecting both the health of the patient and the health of the hospital.