

# **Acute Care Hospitals: Facing the Perfect Storm**

**Patrick J. Dunne, MEd, RRT, FAARC  
HealthCare Productions, Inc.  
Fullerton, CA 92838**

# Disclosure

---

**This presentation is sponsored  
by  
Monaghan Medical.**

# Health Care Industry - - Spring 2010

## ✧ Patient Protection and Affordable Care Act

### ✧ Stated goals:

- ❖ Increase access
- ❖ Improve quality of outcomes
- ❖ Lower costs of care
- ❖ Decrease rate of health care inflation

### ✧ Every American will be affected

- ❖ Recipients and providers alike!

# Hospitals - - Spring 2010

## ✧ Triple storm

- ❖ Decreased reimbursement rates
- ❖ Increase in un-insured/uncompensated care
- ❖ Restricted access to capital
- ❖ \$2 trillion/10 year AHA pledge in Summer 2009

## ✧ $\geq 70\%$ budget - - *personnel*

- ❖ *Are you a "renter" or an "owner" ?*
- ❖ As an "owner", what can I/we do?
  - Reduce inefficiency, waste
  - Improve outcomes of care
  - Lessen financial impact of chronic conditions

# Nine US Financial Regions



# Medicare Inpatient Margin Percentage

## *By Geographic Region*

FISCAL YEAR	2001	2003	2005	2007	2008
<b>East N Central</b>	7.1%	0.7%	-2.4%	-4.9%	-6.5%
<b>East S Central</b>	9.5%	2.9%	3.8%	2.3%	3.9%
<b>Middle Atlantic</b>	20.7%	17.0%	7.6%	7.1%	6.0%
<b>Mountain</b>	6.7%	-0.7%	-3.4%	-7.4%	-10.4%
<b>New England</b>	14.5%	6.4%	3.5%	-0.3%	-11.0%
<b>Pacific</b>	14.2%	5.2%	-4.0%	-7.9%	-9.4%
<b>South Atlantic</b>	7.3%	0.1%	-2.6%	-5.4%	-5.1%
<b>West N Central</b>	6.0%	-1.9%	-3.6%	-7.8%	-9.7%
<b>West S Central</b>	10.3%	3.2%	2.1%	1.0%	-3.4%
<b>TOTAL ALL</b>	<b>11.0%</b>	<b>4.4%</b>	<b>0.2%</b>	<b>-2.3%</b>	<b>-3.6%</b>

# Chronic Respiratory Diseases

- ✧  $\frac{2}{3}$  annual expenditures
- ✧ High degree of recidivism
  - ❖ *re.cid.i.vism (n) - - relapsing into crime*
  - ❖ In health care, aka
    - *Frequent flyer*
    - *Revolving door*
    - *Bounce-back*
- ✧ Unplanned re-admissions are costly
  - ❖ Medicare especially concerned
    - No longer paying for in-hospital mistakes
    - Now tracking 30-day rehospitalization rates

# Unplanned Rehospitalizations

- ✧ **NEJM April 2009: Jencks, SF et al**
  - ❖ **October 1, 2003 through December 31, 2004**
  - ❖ **19.6% Medicare hospitalizations due to re-admission for same condition within 30 days of discharge**
    - **2.3 million of 11.8 million total**
  - ❖ **Diseases with highest recidivism:**
    - **CHF (27%)**
    - **Psychosis (25%)**
    - **Vascular surgery (24%)**
    - **COPD (23%)**
    - **Pneumonia (20%)**
  - ❖ **Cost impact → \$17.4 billion**

# Primary Contributing Factor

**“Large percentage of unplanned rehospitalizations appear to be directly related to poorly coordinated transition of care”**

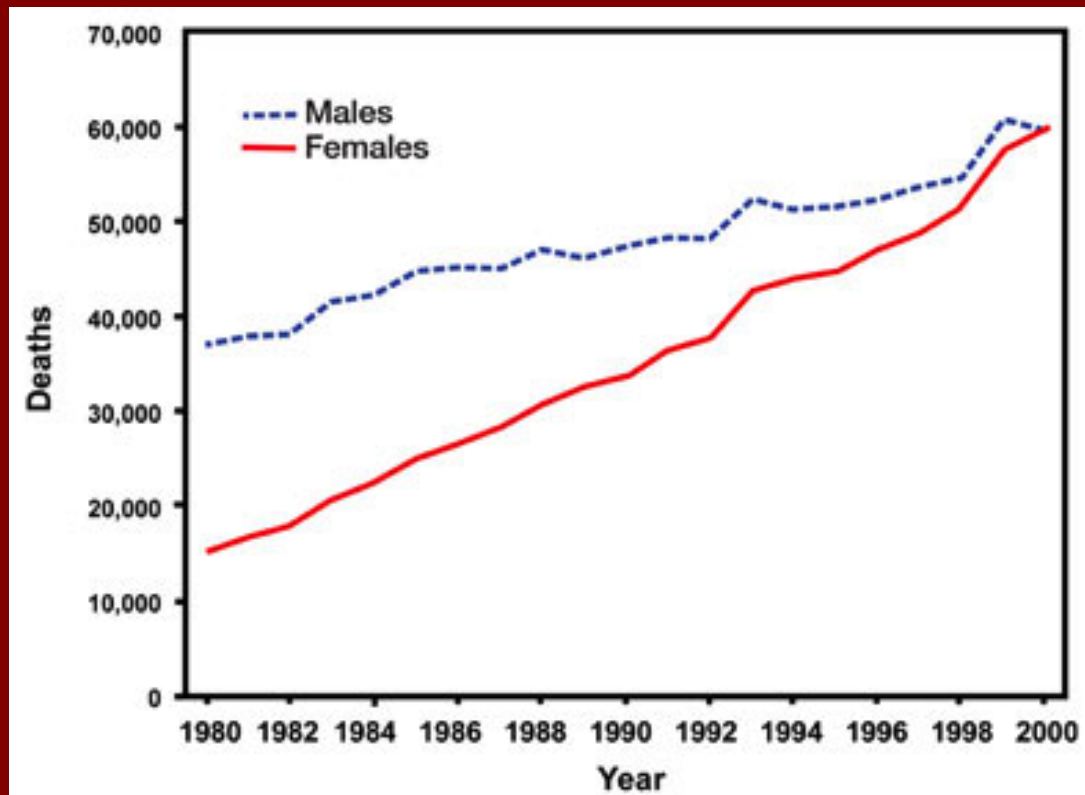
**Ask yourself (*as an owner*) . . .**

**“Is there something an experienced respiratory therapist can do to reduce recidivism?”**

# COPD

- ✧ **Prevalent yet treatable disease**
  - ❖ **Affects 12-24 million**
- ✧ **4<sup>th</sup> leading cause of death**
  - ❖ **Third by 2020 (*if not sooner!*)**
- ✧ **Mortality now greater in women than men**
  - ❖ **64,000 vs. 59,000 deaths in 2003**
- ✧ **Huge economic impact**
  - ❖ **\$42.6 billion in 2007; \$28 billion for hospital care**

# COPD Mortality by Gender





# COPD

## *The Cost Impact on Hospitals*

	1993	2002	2006
Hospitalizations	461,000	619,000	720,000
Length of stay	7.2 days	5.1 days	5.0 days
Cost per stay	\$10,500	\$15,400	\$24,000

**Recidivism the primary driver of repeat hospitalizations**

**Caused by patient's unwillingness/inability to remain  
adherent with prescribed controller medications**

# COPD Care - - A Few Facts

## ✧ Evidence based practice guidelines exist

### ❖ GOLD Guidelines (*November 2009*)

- Collaboration between WHO & NIH

### ❖ International framework to standardize:

- How COPD is defined
- How COPD can be prevented
- How COPD is diagnosed
- How COPD disease severity is staged
- Appropriate COPD treatment strategies

# GOLD Guidelines

## I: Mild

- $FEV_1/FVC < 0.70$
- $FEV_1 \geq 80\%$  predicted

## II: Moderate

- $FEV_1/FVC < 0.70$
- $50\% \leq FEV_1 < 80\%$  predicted

## III: Severe

- $FEV_1/FVC < 0.70$
- $30\% \leq FEV_1 < 50\%$  predicted

## IV: Very Severe

- $FEV_1/FVC < 0.70$
- $FEV_1 < 30\%$  predicted or  $FEV_1 < 50\%$  predicted plus chronic respiratory failure

Active reduction of risk factor(s); smoking cessation, flu vaccination

Add short-acting bronchodilator (as needed)

Add regular treatment with long-acting bronchodilators; Begin Pulmonary Rehabilitation

Add inhaled glucocorticosteroids if repeated acute exacerbations

Add LTOT for chronic hypoxemia.  
Consider surgical options

# Asthma

- ✧ **22 million affected**
  - ❖ > 6 million children
- ✧ **Since 1998, deaths are down**
  - ❖ < 4,000/yr
- ✧ **497,000 admissions**
  - ❖ Failure to **control** symptoms
- ✧ **\$19 billion annual expenditures**
  - ❖ > 75% for direct medical costs
  - ❖ 12 mm lost school days; 14 mm lost work days

# Stepwise Approach for Managing Asthma in Children 0-4 Years of Age

**Intermittent  
Asthma**

**Persistent Asthma: Daily Medication**  
 Consult asthma specialist if step 3 care or higher is required.  
 Consider consultation at step 2

**Step 1**

**Preferred  
SABA *prn***

**Step 2**

**Preferred  
Low dose  
ICS**  
*Alternative*  
 Montelukast  
 or Cromolyn

**Step 3**

**Preferred  
Medium  
Dose ICS**

**Step 4**

**Preferred  
Medium  
Dose ICS**  
  
**AND**  
  
 Either:  
 Montelukast  
 or LABA

**Step 5**

**Preferred  
High  
Dose ICS**  
  
**AND**  
  
 Either:  
 Montelukast  
 or LABA

**Step 6**

**Preferred  
High  
Dose ICS**  
  
**AND**  
  
 Either:  
 Montelukast  
 or LABA  
  
**AND**  
  
 Oral  
 corticosteroid

**Step up if  
needed**

(first check  
adherence,  
environmental  
control)

**Assess  
control**

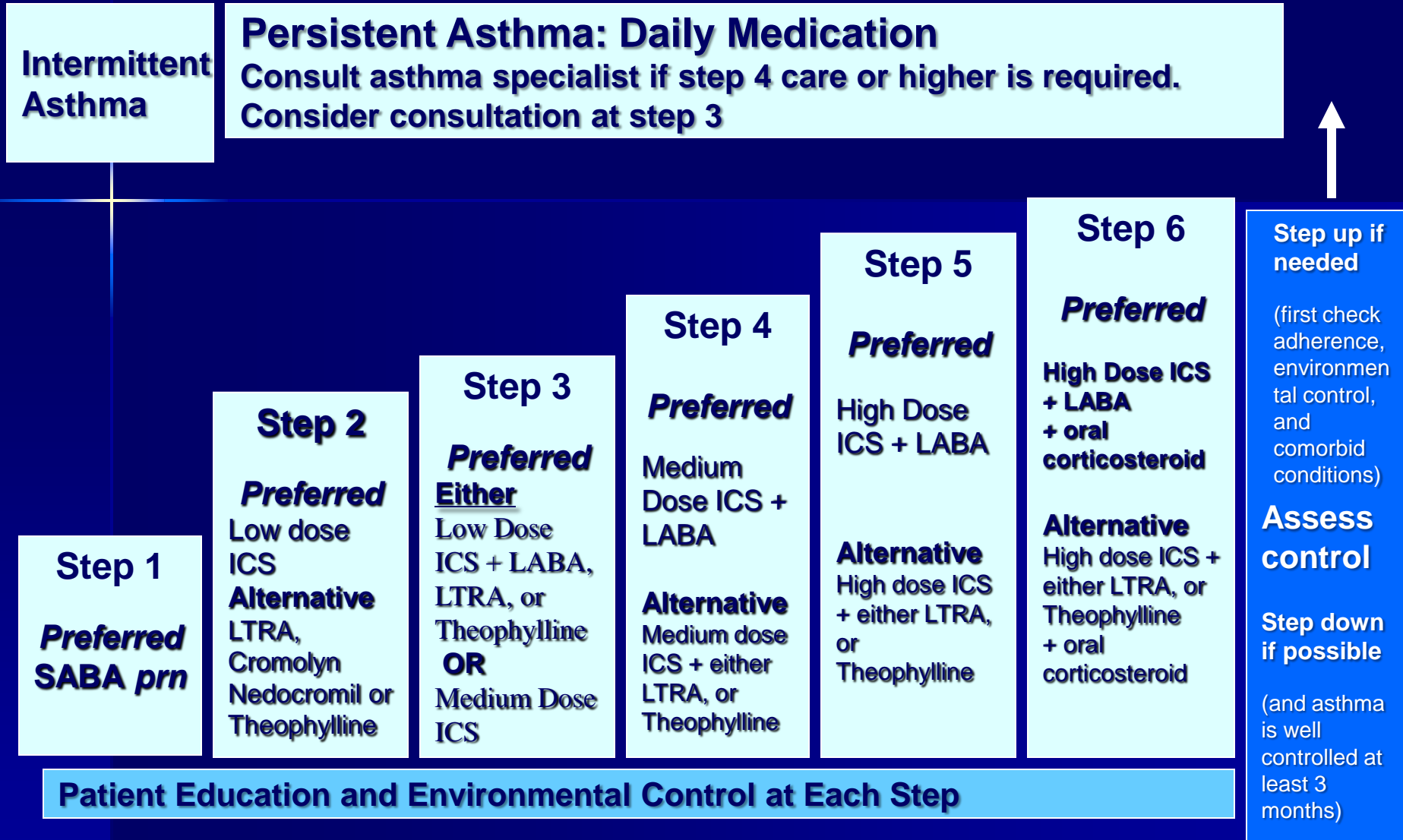
**Step  
down if  
possible**

(and asthma  
is well  
controlled at  
least 3  
months)

**Patient Education and Environmental Control at Each Step**

Quick-relief medication for **ALL** patients -SABA as needed for symptoms.  
 With VURI: SABA every 4-6 hours up to 24 hours.  
 Consider short course of corticosteroids with (or hx of) severe exacerbation

# Stepwise approach for managing asthma in children 5-11 years of age



Quick-relief medication for **ALL** patients  
SABA as needed for symptoms.  
Short course of oral corticosteroids maybe needed.

# Stepwise Approach for Managing Asthma in Youths $\geq 12$ Years of Age & Adults

**Intermittent  
Asthma**

## ***Persistent Asthma: Daily Medication***

Consult asthma specialist if step 4 care or higher is required.  
Consider consultation at step 3

### **Step 1**

**Preferred:**  
**SABA prn**

### **Step 2**

**Preferred:**  
Low dose ICS

**Alternative:**  
Cromolyn,  
LTRA,  
Nedocromil or  
Theophylline

### **Step 3**

**Preferred:**  
Low-dose ICS +  
LABA  
**OR – Medium  
dose ICS**

**Alternative:**  
Low-dose ICS +  
either LTRA,  
Theophylline, or  
Zileuton

### **Step 4**

**Preferred:**  
Medium Dose  
ICS + LABA

**Alternative:**  
Medium-dose  
ICS + either  
LTRA,  
Theophylline,  
or Zileuton

### **Step 5**

**Preferred**  
High  
Dose ICS +  
LABA

**AND**

Consider  
Omalizumab  
for patients  
who have  
allergies

### **Step 6**

**Preferred**  
High dose ICS  
+ LABA + oral  
corticosteroid

**AND**

Consider  
Omalizumab  
for patients  
who have  
allergies

**Step up if  
needed**

(first check  
adherence,  
environmental  
control &  
comorbid  
conditions)

**Assess  
control**

**Step  
down if  
possible**

(and asthma  
is well  
controlled at  
least 3  
months)

**Each Step: Patient Education and Environmental Control and management of comorbidities**

**Steps 2–4: Consider subcutaneous allergen immunotherapy for patients who have allergic asthma**

• Quick-relief medication for **ALL** patients -SABA as needed for symptoms: up to 3 tx @ 20 minute intervals prn. Short course of o systemic corticosteroids may be needed.

• Use of SABA >2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control & the need to step up treatment.

# Obstructive Sleep Apnea

- ✧ **18 million Americans affected**
  - ❖  $\approx$  6 million with moderate to severe
  - ❖  $\leq$  10% diagnosed & under treatment
- ✧ **Morbidity/mortality data lacking**
  - ❖ 38,000 due to cardio-vascular co-morbidities
  - ❖ # 1 contributor to post-op complications
- ✧ **Drowsy driving**
  - ❖  $\geq$  100,000 MVAs per year
  - ❖  $\approx$  40,000 injuries; 1,550 deaths
  - ❖ Unknown number work-related injuries

# Respiratory Diseases

- ✧ **Affect millions & cost billions!!!**
  - ❖ Millions more yet to be diagnosed
  - ❖ Once diagnosed, recidivism driven
  - ❖ Usually a critical care component
- ✧ **Are predominantly chronic**
- ✧ **Usually diagnosed later rather than sooner**
- ✧ **Hospital has limited impact after discharge**
  - ❖ *Chronic care different than acute care*

# The Quality of Obstructive Lung Disease Care for Adults in the US as Measured by Adherence to Recommended Processes\*

- ✧ 260 asthma patients with 2,394 *care events*
- ✧ 169 COPD patients with 1,664 *care events*
- ✧ *Findings:*

*“Americans with obstructive lung disease receive only 55% of recommended care.*

*The deficits and variability in the quality of care present ample opportunities for quality improvement”*

\* Mularski RA, Asch SM, et al. Chest: December 2006

# Discrepancy in the Use of Confirmatory Tests in Patients Hospitalized with the Diagnosis of COPD or CHF \*

## ✧ Confirmatory tests

- ✧ For COPD → spirometry

- ✧ For CHF → 2-D echocardiography

## ✧ 553 pts discharged with Dx of COPD

- ✧ 173 (31%) had spirometry

## ✧ 789 pts discharged with Dx of CHF

- ✧ 619 (78%) had 2-D echo

*“We must raise awareness of the need to confirm the diagnosis of COPD and its severity with spirometry”*

***How can respiratory therapists  
make a difference?***

***By developing and implementing  
a hospital-wide COPD Transition Protocol***



# COPD Transition Protocol

- ✧ **First step: ask the right questions**
  - ❖ **How many admissions in past year?**
  - ❖ **Is spirometric data current?**
  - ❖ **What is frequency of patient's SABA use?**
  - ❖ **Is patient prescribed long-acting bronchodilator(s)?**
  - ❖ **Is patient capable of using MDI, DPI?**
  - ❖ **Is patient hypoxemic breathing room air?**

# COPD Transition Protocol

- ✧ *How many admissions in past year?*
  - ❖ *First time (this is good)*
  - ❖ *2 or more (not so good)*
    - *A hospitalization for exacerbation of COPD is, in and of itself, a risk factor for subsequent re-admissions*
    - *Share with every COPD patient importance of keeping symptoms under control to avoid rehospitalization*
    - *Help patients/family identify “early warning signs” and when to contact their physician*

# COPD Transition Protocol

## ✧ *How current is spirometric data?*

- ❖ **Ideally, within past 24 months**

- ❖ **Chart review & patient interview**

- *When did you have your last breathing test?*

- *Do you remember where you had your test?*

- *Get existing results into chart*

- ❖ **If needed, advocate for replacement tests**

- *Data required to effectively stage disease severity to properly align appropriate therapy*

# COPD Transition Protocol

- ✧ *Frequency of SABA use?*
  - ❖ Ideally,  $\leq 2$ -3 times per week; (*Never  $\geq 1$  inhaler/month*)
- ✧ *Is patient prescribed long-acting bronchodilator(s)?*
  - ❖ LABA (*arformoterol<sup>†</sup> formoterol<sup>†</sup> salmeterol \**)
  - ❖ LAAC (*tiotropium \**)
  - ❖ Advair (*salmeterol & fluticasone\* \*\**)
  - ❖ Symbicort (*formoterol & budesonide\*\**)

<sup>†</sup> Neb solution \* DPI \*\*pMDI

# An Intervention to Reduce over-dispensing of Asthma Medications\*

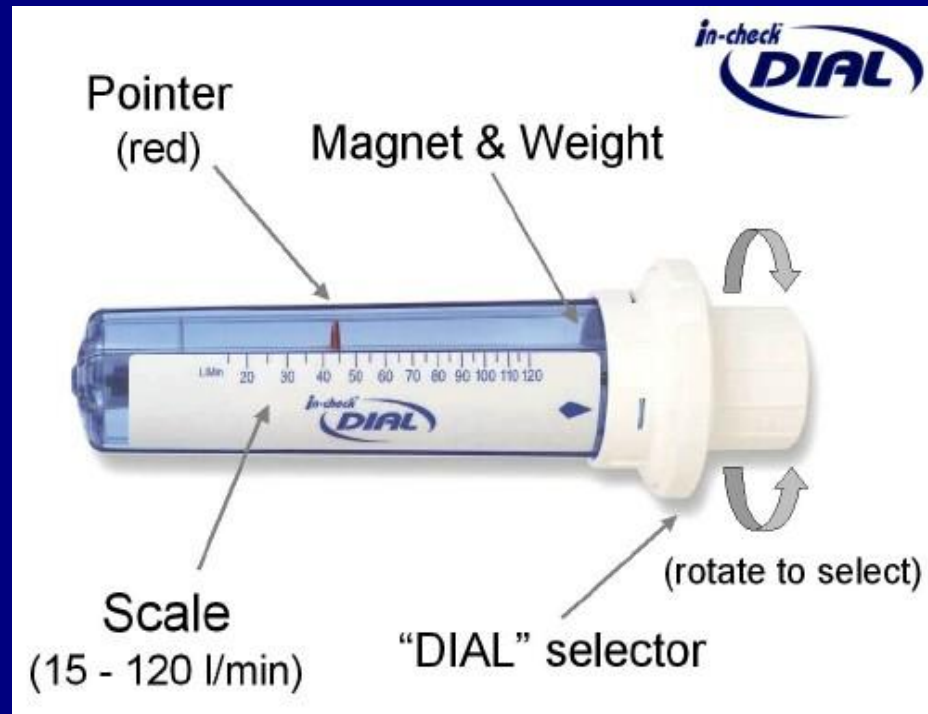
*The study revealed that when physicians were provided information about the consequences of excessive use of rescue inhalers, the number of new prescriptions dropped by 60 percent - - in essence a decrease of 200,000 fewer inhalers over a one year period.*

\* Presented at 2009 ACAAI Annual Meeting

# COPD Transition Protocol

- ✧ *Can patient effectively use an inhaler?*
  - ❖ For pMDI - - an anti-static, valved holding chamber
  - ❖ For DPI - - peak *inspiratory* flow rate  $\geq 30$  L/min
    - Unlikely when  $FEV_1 \leq 40\%$
  - ❖ SVN may be necessary for optimum effect
    - Consider high efficiency jet nebulizer (*BAN*)
  - ❖ Primary objective is to make it easy for patient to remain adherent on a daily basis

# Peak *Inspiratory* Flow Rate Meter



Provides an objective assessment of peak *inspiratory air speed/velocity* to determine patient's ability to *effectively* use a dry powder inhaler

Device - \$79 (KWM-510); 50 disposable mouthpieces - \$49 (KWM-2065)

[www.kw-med.com](http://www.kw-med.com)

# COPD Transition Protocol

- ✧ *Is patient hypoxemic breathing room air?*
  - ❖ Is resting  $\text{SpO}_2 \leq 89\%$ , and if so, what oxygen dose is needed to  $\geq 90\%$  ?
  - ❖ During ambulation, does resting oxygen dose prevent desaturation, and if not, how much must oxygen dose be increased ?

***"Only 32% of COPD patients with baseline hypoxia received home oxygen for routine management" \****

\* Mularski RA, et al. Chest; December 2006

# COPD Transition Protocol

- ✧ **First step: ask the right questions**
  - ❖ **How many admissions in past year?**
  - ❖ **Is spirometric data current?**
  - ❖ **What is frequency of patient's SABA use?**
  - ❖ **Is patient prescribed long-acting bronchodilator(s)?**
  - ❖ **Is patient capable of using MDI, DPI?**
  - ❖ **Is patient hypoxemic breathing room air?**

***Respiratory therapist can indeed make a difference by:***

- Helping COPD patients avoid unplanned rehospitalizations***
- Providing for transition of care to ensure COPD patients are properly equipped for self-care responsibilities***
- Advocating the application of evidence-based care guidelines for COPD***



# **Acute Care Hospitals: Facing the Perfect Storm**

**Patrick J. Dunne, MEd, RRT, FAARC  
HealthCare Productions, Inc.  
Fullerton, CA 92838**