

# “How and Why You Want to be Published!”

Bob Kacmarek PhD, RRT

Harvard Medical School

Massachusetts General Hospital

Boston, Massachusetts

9-20-07 Minn-Wis

# Why I Want to be Published!

- Because I want to promote my career!

# Why I Want to be Published!

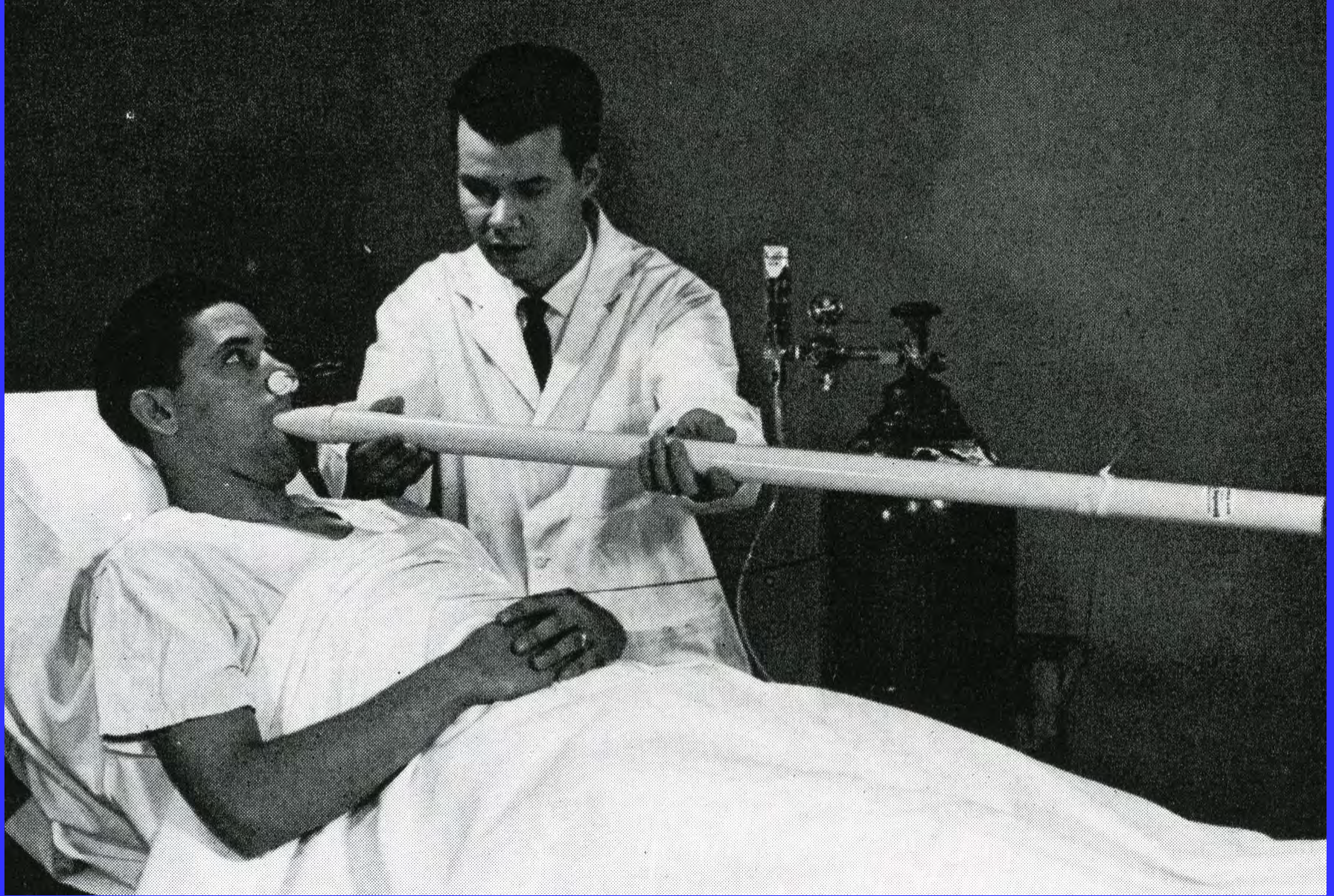
- Because I want to promote my career!
- Because I want to give my opinion, I have something to say!

# Why I Want to be Published!

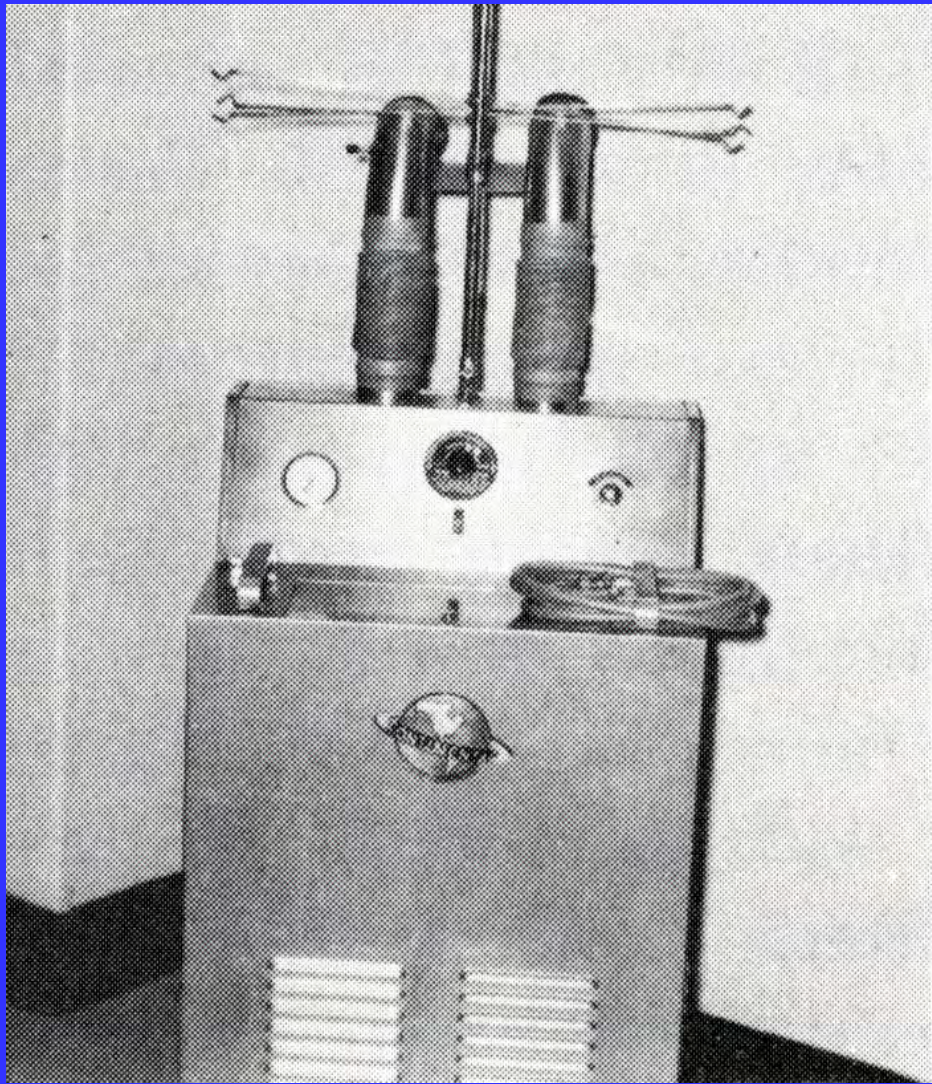
- Because I want to promote my career!
- Because I want to give my opinion!
- Because I want to share what we do well!

# Why I Want to be Published!

- Because I want to promote my career!
- Because I want to give my opinion!
- Because I want to share what we do well!
- Because I want to understand why,  
I want to do research!



Schwartz Rebreathing Tube



# Oxygen Tents

# Why I Want to be Published!

- Because I want to promote my career!
- Because I want to give my opinion!
- Because I want to share what we do well!
- Because I want to understand why!
- Because I am interested in everyone providing the best quality care!

# Why I Want to be Published!

- Because I want to promote my career!
- Because I want to give my opinion!
- Because I want to share what we do well!
- Because I want to understand why
- Because I am interested in providing everyone the best quality care!
- Because evidence is the name of the game!

# Evidence Based Medicine

- The practice of evidence based medicine is the integration of:
  - An individual's clinical experience with
  - The best available clinical evidence from systematic research and the integration of
  - The patient's values and expectations!

**“ The best evidence changes over time”!**

# “ The Best Evidence Changes Over Time”!

- Tidal Volume during management of ARDS
- The use of NPPV
- Ventilator circuit change frequency
- Antibiotics for the treatment of specific infections
- Best functioning piece of equipment

# Individual Clinical Expertise

- Based on clinical skills and clinical judgment
- The right patient, the right time, the right place, the right dose, the right resources.....
- Used to determine if the evidence applies to the individual patient!

# Evidence Based Medicine is NOT:

- Cook book medicine
  - Best evidence needs extrapolation to the patients' unique pathophysiology and values
- Cost cutting medicine
  - Evidence Based medicine may increase, decrease or not affect costs

# Levels of Evidence

- A number of RCT's with the same results
- Meta – analysis of RCT's
- Individual RCT
- Systematic reviews of observational studies
- Observational studies
- Physiologic studies
- Unsystematic clinical observations
- Laboratory studies

# How to get Published!

- Send a letter to the editor regarding an already published article!
- Write a case study - of an unusual case!
- Report on a series of patients managed in a particular way!
- Do a review of the literature!
- Compare the operation of a number of pieces of equipment!
- Evaluate the physiologic effect of a specific intervention!
- Do a randomized controlled trial!

# Send a letter to the editor regarding an already published article!

- Express your agreement with the findings!
- Express your concerns about the findings !
- Indicate your experiences are the same as the authors or very different from that of the authors!

# Write a case study - of an unusual case!

- First time we used a particular approach to managing a patient and were very successful!
- First time a patient with this diagnosis was managed at your institution!
- Any patient case that the rest of the respiratory care community may find interesting or instructive?

# Report on a series of patients managed in a particular way!

- We managed a series of patients for the first time with NPPV or HFO or Heliox and our outcome was!
- We introduced a change in practice, we used RM immediately after stabilization in a series of ARDS patients and our outcome was!
- We use a new mode of ventilation on a series of post-op patients and found that?

# Do a Review of the Literature!

- The Historical Development of PEEP devices!
- Do a review of a new textbook!
- The use of NPPV in DNI/DNR patients!
- The evidence supporting the development of ventilator induced lung injury!
- The use of CPAP in post operative respiratory failure!
- The management of asthma with helium!

# RCT's: Ventilator Circuit Change Frequency and Risk of VAP

patients	change freq C	change freq Rx	pneumonia control	pneumonia Rx
Adults	24h(106)	48h(127)	29.2%	14.2%*

Craven ARRD 1982;133:792

Adults	48h(35)	none(28)	31.4%	28.5%
--------	---------	----------	-------	-------

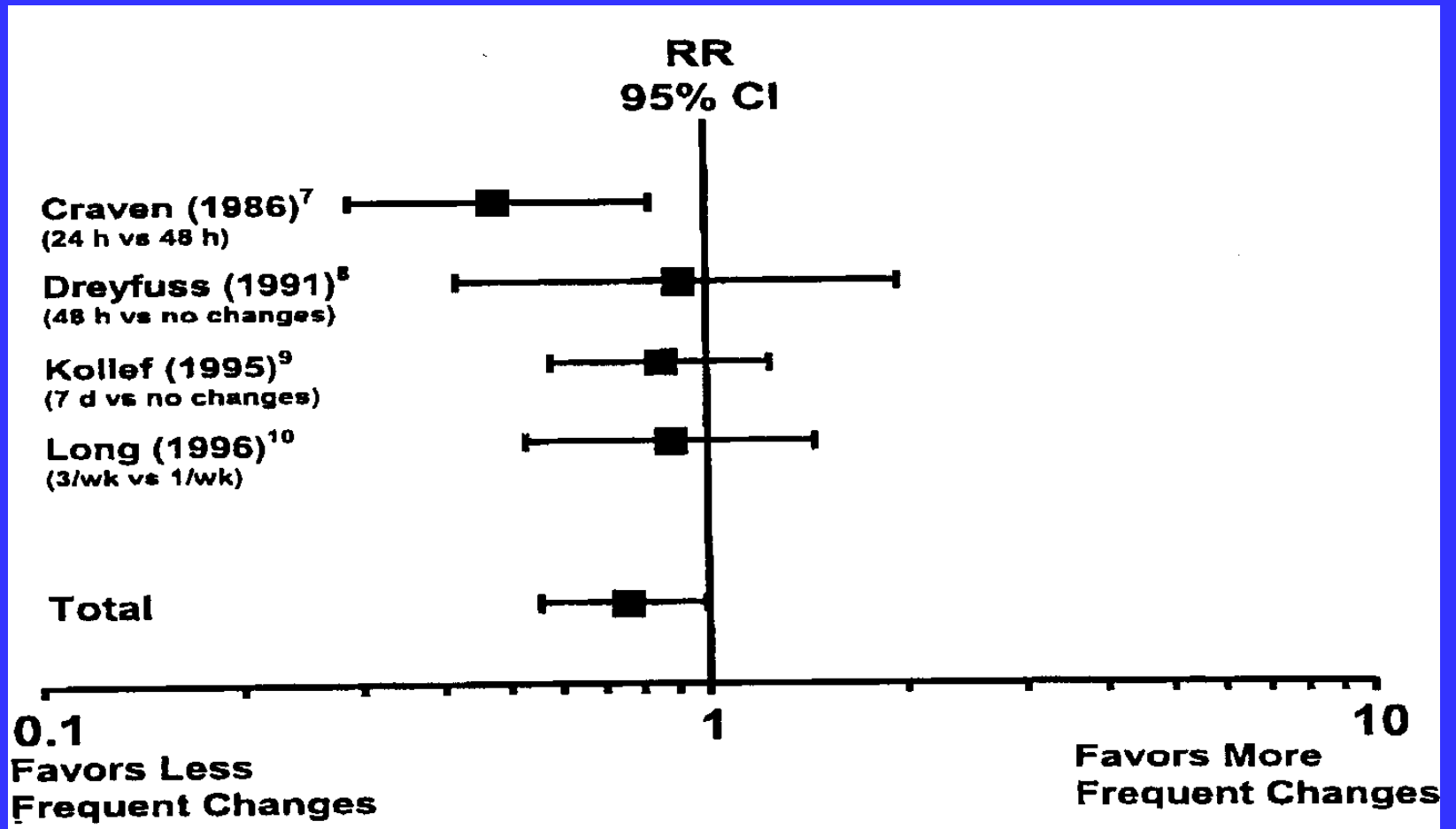
Dreyfuss ARRD 1991;143:738

Adults	7d(153)	none(147)	28.8%	24.5%
--------	---------	-----------	-------	-------

Kollef Ann Inten Med 1995;123:168

A/Child	2.3d(213)	7d(234)	12.7%	11.1%
---------	-----------	---------	-------	-------

Long Infect Control Hosp Epidemiol 1996;17:14



**RR 0.76, 95% CI 0.57 to 1.00, p=0.05**

# Observational Studies: Ventilator Circuit Change Frequency and VAP

- 1 study: 8 hr vs 24 hr circuit change

Lareau ARRD 1978;118:493

- 5 studies: 2 or 3d vs 7d circuit change

Hess Anes 1995;82:903

Kotilainen Am J Infect Control 1997;25:117

Fink Chest 1998;113:405

Han Respir Care 2001;46:891\*

Lien Zhonghua Yi Xue Za Zhi 2001;64:161

- 1 study: 7 vs 14 d circuit change

Thompson Respir Care 1996;41:601

- N=9003, 4.1% vs 9606, 3.8% pneumonia



# Heyland JAMA 1998;280:2013

- Meta-analysis: Total parenteral nutrition in the critically ill patient.
- At a time all ICU patients received TPN
- This analysis indicated that TPN in ICU patients significantly increases complications and mortality!

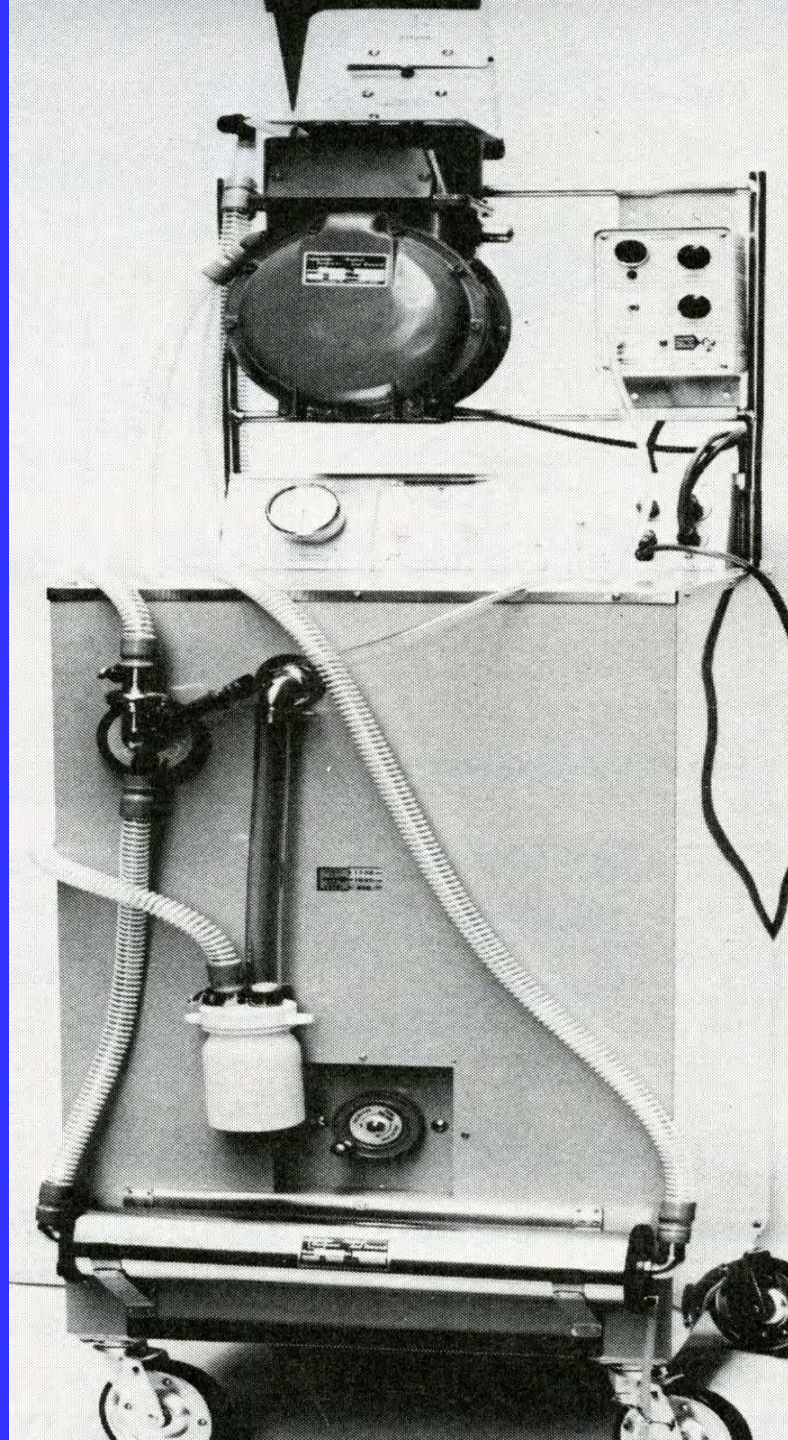
# Compare the operation of a number of pieces of equipment!

- Response of ICU ventilators
- Comparison of adult ICU ventilators neonatal mode to a neonatal ventilator
- Comparison of the function of transport ventilators
- Comparison of the operation of mid-level ICU ventilators
- Comparison of the PRVC mode on a series of ICU ventilator



Morch Volume Ventilator

# Emerson Post-op Ventilator





PB 840



Maquet  
Servo i

# Compare the operation of a number of pieces of equipment!

- Comparison of the performance of:
  - Nebulizers
  - Modes of ventilation
  - Work of breathing
  - Computerized lung models
  - Mask for NPPV
  - Endotracheal tubes
  - Tracheostomy tubes
  - Speaking valves
  - Inline suction catheters

# Evaluate the physiologic effect of a specific intervention!

- Pressure Regulated Volume Control
- Volume support
- Proportional Assist Ventilation
- Neurally Adjusted Ventilatory Support
- Airway Pressure Release Ventilation
- BiLevel Ventilation
- Automatic Tube Compensation
- Adaptive Support Ventilation
- Smart Care

# Do a randomized controlled trial!

- NPPV vs. Standard Care in a Group of Patients with hypoxemic respiratory failure
- The use of RM vs. standard care of post-op ARDS patients
- The use of a new endotracheal tube vs. standard care
- The use of a new protocol for ventilator management vs. standard care
- The use of moderate sized tidal volume vs. the ARDSnet protocol in patients without ALI

# Indications for NPPV

## Undisputed indications - State of the Indications

- Acute Exacerbation of COPD
- Acute Cardiogenic Pulmonary Edema

## General Indications for Use

- Post extubation Hypercarbic Respiratory Failure
- Hypoxemic Respiratory Failure in :
  - Immunosuppressed Patients
  - Patients Awaiting Transplantation
  - Patients Post Lung Resection
- Patients with DNI Status
- Acute Hypercapnic Respiratory Failure as a Result of Neurological or Neuromuscular Disease

## Controversial Indications

- Post –Extubation Hypoxemic Respiratory Failure
- Acute Lung Injury
- Acute Respiratory Distress Syndrome
- Asthma

Sadowski Am Heart J 1999;137:792

- Prophylactic lidocaine infusion was used on every patient with an acute myocardial infarction!
- 20 subsequent RCTs demonstrated that lidocaine reduced the incidence of ventricular fibrillation but significantly increased mortality

## Taubes Science 1996;272:22

- 1,000,000 RCTs have been carried out over the past 50 years!
- The outcomes from many of these RCTs conflict with each other!

# Horrobin Lancet 2003;361:695

- Medical practice should not change based on the results of a single positive RCT!
- A single trial represents only part of the evidence assessing the value of an intervention!

# Prospective study

Study\_\_\_\_\_Baseline\_\_\_\_\_Intervention\_\_\_\_\_Outcome  
Designed State Controlled Measured

# Retrospective Study

Outcome\_\_\_Baseline\_\_\_\_\_Intervention\_\_\_\_\_Study  
Identified State Identified Designed

# Retrospective Analysis

- VAP rates after introduction of ventilator bundle
- VAP rates after changing from manual ventilation to transport ventilators
- Incidence of inadvertent extubation after change to a new method of securing an endotracheal tube
- Incidence of post-op pneumonia after instituting the use of continuous CPAP

# How Do I Get Published?

- Be creative, be curious, be questioning!
- Come up with an idea!
- View everything as an opportunity to publish!
- Change your mind set regarding how you approach patient care!

# Find a Mentor!

- Someone who is willing to guide and help you publish!
- Should be experienced, should have published a number of articles themselves!
- Someone who will let you work in their lab!
- Someone who will let you work with them on their clinical project!
- Someone who is willing to put in the time needed to help you develop your ideas!
- Ideally another therapist or physician but could be any other professional!
- Ideally works at your institution!

# Start Out Simple

- You will not get a Nobel Prize for your first publication!!!!
- Write a letter to the editor of *Respiratory Care*
- Do a Case Study
- Compare equipment in the laboratory
- Become part of an existent group

# Develop Your Idea

- Put it on paper in an organized manner!
- Get the facts of your case study organized!
- Define how you will implement a new protocol!
- Define the outcome you want to retrospectively review!
- Define how you are going to compare specific types of equipment!
- Clearly define your methods!
- Realize you will need to write a number of drafts!

# Check Out Your Institutional Requirements, IRB

- Single case study
- Case series
- Retrospective review
- Physiologic intervention
- Randomized Control Trial

# Be Patient!

- You will have to rewrite most of what you have written many times to get it right!
- You will make mistakes and will have to revise the methods or redo the experiment many times!
- It will most likely require a lot of time to complete each project!
- You will need to put in a lot of work on your own time!

# Be Patient!

- Do not give up!
- Publication requires persistence and dedication!
- The personnel satisfaction is great!
- Publications will improve the way others in your institution view you!
- Your credibility will be increased!
- The feeling of accomplishment is fantastic!

.....One should continue asking questions and not permit oneself to be bound by unsubstantiated data.....

Fairly AJRCCM 2001;163:1049

- Realize what you believe to be correct today may not be correct tomorrow!
- Expect our approach to the practice of Respiratory Care to continue to change and change and change based on new Evidence

- Anyone can publish, it does not require exceptional ability!
- The profession of Respiratory Therapy needs you to publish!

**Thank You**