What will we cover?

- Why training and education is more important today than it has ever been.
- Why COPD patients are particularly difficult to train.
- Training vs. education and who can provide each.
- Learn your Learning Style.
- Why we should match our training to the patient’s style.
- Who is the COPD patient.
- How to overcome some of the barriers and challenges to training the elderly – With attention focused on visual and hearing impairments.

Why is training the COPD patient suddenly so important?

- Acute care providers (hospitals)
  - PPACA – readmissions could cost $millions
- DME providers
  - 36-Month Cap – reimbursement ↓ 22%
  - Competitive Bidding - ↓ O₂ 33%
  - Reimbursement now 52.3% of 2008 level (in NCB areas)
- Providers MUST reduce operating expenses.
  - Patient visits
    - $50 - 70 Delivery Technician
    - $70 - 120 Respiratory Therapist

Why is training COPD patients so hard?

- True
- False

COPD is a disease of breathing, but it has no effect on cognitive function.
Neuropsychologic Impairment and Severity of COPD
- 4 groups matched for age & education
  - Control (n=99)
  - Mild COPD (n=86)
  - Moderate COPD (n=155)
  - Severe COPD (n=99)
- Memory and neuro-performance tests compared to control

<table>
<thead>
<tr>
<th>Group</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance deficit</td>
<td>27%</td>
<td>61%</td>
<td></td>
</tr>
</tbody>
</table>

Grant I, et al. Arch Gen Psychiatry 1987;44(11):999-1006

Placing a hypoxic COPD patient on oxygen immediately improves their cognitive skills.
- True or False

Acute Oxygen and Neuropsychologic Outcomes
- 10 COPD patients tested for:
  - Speed of information processing
  - Recognition of correct sequences
  - Serial memory
- Patients then randomized to O2 or RA x 6 hrs.
- Testing was then repeated
- Outcome: No difference in the two groups


Placing a hypoxic COPD patient on oxygen eventually improves cognitive skills.
- True or False

NOTT: Neuropsychologic Outcomes
- 150 patients and matched controls tested at months 0 & 6
- Outcomes after 6-months on LTOT

<table>
<thead>
<tr>
<th>Area Tested</th>
<th>% Improvement LTOT Patients</th>
<th>Matched Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>25.5</td>
<td>7.6</td>
</tr>
<tr>
<td>Simple sensory</td>
<td>21.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Simple motor</td>
<td>41.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Global Judgment</td>
<td>41.8</td>
<td>5.6</td>
</tr>
</tbody>
</table>


THE “RESTORATIVE EFFECT”*
1. Reversal of systemic inflammation
2. Elimination of oxidative stress (source of direct cellular damage)
3. Restoration of oxygen dependant enzyme pathways

* O’Donohue VJ. Effect of oxygen therapy on increasing arterial oxygen tension in hypoxic patients with stable chronic obstructive pulmonary disease while breathing ambient air. Chest 1991;100:568-72.

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Education vs. Training

Education, is concerned with the development of the mind, of the intellect, while training deals with learning specific skills.


What’s Your Learning Style?

• For these 10 questions, write down the letter to the first answer that comes to mind (A, B or C).

• Don’t spend too much time thinking about any one question.

Question 1: When you study for a test, would you rather:

a) Read notes, read headings in a book, and look at diagrams and illustrations.

b) Have someone ask you questions, or repeat facts silently to yourself.

c) Write things out on index cards and make models or diagrams.

Question 2: Which of these do you do when you listen to music?

a) Daydream (see things that go with the music).

b) Hum along.

c) Move with the music, tap your foot, etc.

Question 3: When you work at solving a problem do you:

a) Make a list, organize the steps, and check them off as they are done.

b) Make a few phone calls and talk to friends or experts.

c) Make a model of the problem or walk through all the steps in your mind.
Question 4: When you read for fun, do you prefer:

a) A travel book with a lot of pictures in it.
b) A mystery book with a lot of conversation in it.
c) A book where you answer questions and solve problems.

Question 5: To learn how a computer works, would you rather:

a) Watch a movie about it.
b) Listen to someone explain it.
c) Take the computer apart and try to figure it out for yourself.

Question 6: You have just entered a science museum, what will you do first?

a) Look around and find a map showing the locations of the various exhibits.
b) Talk to a museum guide and ask about exhibits.
c) Go into the first exhibit that looks interesting, and read directions later.

Question 7: What kind of restaurant would you rather not go to?

a) One with the lights too bright.
b) One with the music too loud.
c) One with uncomfortable chairs.

Question 8: Would you rather go to:

a) An art class.
b) A music class.
c) An exercise class.

Question 9: Which are you most likely to do when you are happy?

a) Grin.
b) Shout with joy.
c) Jump for joy.
Question 10: If you were at a party, what would you be most likely to remember the next day?

a) The faces of the people there, but not the names.

b) The names but not the faces.

c) The things you did and said while you were there.

What is Your Learning Style?

Total you’re A’s, B’s, and C’s.

A’s ___________ Visual
B’s ___________ Auditory
C’s ___________ Kinesthetic

Your answers may fall into all three groups, but one group will likely contain the most answers. The dominant group indicates your primary learning style

Adapted from Instructor Magazine, 8-89

Learning Styles

Visual Learners
– Take detailed notes
– Usually neat and clean
– Like to see what they are learning
– Benefit from illustrations & use of color
– Prefer to isolate from auditory & kinesthetic distractions
– Find passive surroundings ideal

Auditory Learners
– Sit where they can hear but needn’t pay attention
– May not coordinate colors or clothes
– Hum or talk to themselves or others when bored
– Acquire knowledge by reading aloud
– Remember by verbalizing lessons

Kinesthetic Learners
– Need to be active and take frequent breaks
– Speak with their hands and with gestures
– Find reasons to tinker or move when bored
– Remember what was done, but have difficulty recalling what was said or seen
– Communicate by touching and appreciate physically expressed encouragement

Can Non-licensed Personnel Provide Patient Education?

• In a state in which Respiratory Care Practice is licensed (all states except HI), the administration of respiratory therapy (including medications) and disease related education can be conducted only by practitioners who’s scope of practice authorizes the activity.

• AZ*, CA*, CO*, FL, MI, OH*, OR, TN*, TX, UT

*State has specific rules governing homecare

Respiratory care practice defined as “Administering, monitoring, recording the results of, and instructing in the use of medical gases, aerosols, ... employed in the treatment of cardiopulmonary impairment and provided in collaboration with other licensed health care professionals responsible for providing care.”

Ohio Respiratory Care Board – Ohio Revised Code: http://codes.ohio.gov/orc/4761

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Example: O2 Concentrator

<table>
<thead>
<tr>
<th>Training</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecting cannula</td>
<td>All that, plus:</td>
</tr>
<tr>
<td>Setting flow</td>
<td>Disease information</td>
</tr>
<tr>
<td>Clean filters</td>
<td>What to expect from O2</td>
</tr>
<tr>
<td>Alarms</td>
<td>When to call Dr.</td>
</tr>
<tr>
<td>Circuit breaker</td>
<td>Proper ADLs</td>
</tr>
<tr>
<td>Testing O2 flow</td>
<td>Explain POx Readings</td>
</tr>
</tbody>
</table>

Who are the COPD patients that we train?

- 80-90% of COPD results from cigarette smoking¹
- Who smokes?
  - Education²
    - High school education 32.0%
    - College graduates 13.3%
  - Income²
    - Below poverty level 36.5%
    - At or near poverty level 32.8%
    - Above poverty level 22.5%
- Average age when started on LTOT: 74±8 years³


Patients started on oxygen in 2012

- Were born in 1930 – 1946
- Turned 18 yrs old in 1948 – 1964
  - 1948: 35% graduated HS, 7% college (4-years)
  - 1964: 49% graduated HS, 12% college (4-years)

Additional Confounding Factors

- 17% of Alzheimer’s patients have COPD¹
  - One in eight people aged 65 and older (13%) has Alzheimer’s disease.
  - Nearly half of people aged 85 and older (43%) have Alzheimer’s disease.
- The incidence of cognitive dysfunction is higher in hypoxemia².
- Cognitive dysfunction in COPD pts is associated with increased morbidity and mortality².
- The prevalence of depression in COPD is 26%⁴.
- Racial, ethnic & cultural influences.


Principles of Adult Learning*¹

- Adults are goal-oriented
  - They need to know what they will be learning
  - Tell them why what you are going to tell them is important
- Adults are relevancy-oriented
  - They must see a reason for learning something
  - Use examples
- Adults are autonomous
  - Need to be actively involved in learning
  - Actively involve patients in instruction
- Adults are practical
  - They focus on the most useful information


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Overcoming Potential Barriers to Teaching Older Adults

- Vision Changes
  - Pupil admits 50% less light for a person of 50 than for someone that is 20.
  - Face the patient directly when speaking
  - Ensure good light with no glare
  - Use other forms of sensory input like touch
  - Special attention to written materials

Written Materials

- Use largest reasonable letter size
  - Minimum 12-point type
- **Thicker letters are easier to read**
  - Use both UPPER and lower case
  - Plain, medium & **bold** letters, familiar styles
  - Don’t use a variety of type in a single piece
  - Use a lot of white space (always double space)
  - Contrast – dark ink on light paper
  - No more than 5th-6th grade reading level

Written Reinforcement

Flesch-Kincaid Grade Level Index

- Index computes readability based on the average number of syllables per word and the average number of words per sentence. The score indicates a grade-school level. For example, a score of 6.0 means that an eighth grader would understand the document.
- Test is automatically calculated in Microsoft Word documents. After Microsoft Word completes a “Spelling & Grammar” check, readability statistics are displayed. Generally it must be “turned on” manually to have the program do the readability statistics when a Spelling & Grammar check is done on a document.
- To “turn on” the function:
  1. Go into your MS Word Program.
  2. Click on the “Tools” bar.
  3. Click on “Options”.
  4. Click on “Spelling, Grammar”.
  5. Place a checkmark on “Show Readability Statistics”.

Overcoming Potential Barriers to Teaching Older Adults

- Hearing Changes
  - Primarily caused by atrophy of inner ear structures. Higher frequencies go first.
  - Keep your face visible to the patient and do not cover your mouth with your hands.
  - Ensure good light with no glare.
  - Enunciate clearly & slowly in a low pitched voice.
  - Use shorter sentences and repeat or rephrase important areas of instruction.

90/20/8 Rule*

- No module should be more than 90-min
- Longest “listen with understanding” period
- Change pace every 20-min
- Longest “Listen with retention” period
- Involve people in content every 8-min


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Can Homecare RTs Influence the 30-Day Readmission Rates for COPD?

- Retrospective analysis
- Regional 30-day COPD readmit rate ≈ 25%
- 180 pts enrolled in program (10 months)
  - Patient referrals from 23 area hospitals
- Program components
  - Pre-discharge assessment
  - Home RT visits (days 2, 7 and 30)
  - 12 Care Coordinator phone calls
- 30-day readmission rate decreased to 3%

 BW Carlin, N Rees, D Easley. COPD: Transition of Care and Rehospitalization Rates. Respir Care 2010;55(11):1535 (abstract)

Parting thoughts…

- Be patient! If you don’t invest the time now – it will cost you later…
- Speak slowly with an even tone.
- Ask the patient to tell you what you just told them – Teach Back (reinforcement).
- Hands-on! Have the patient show you how they would do everything you want them to be able to do (reinforcement).

Thank You
Questions?

bmessenger@invacare.com

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