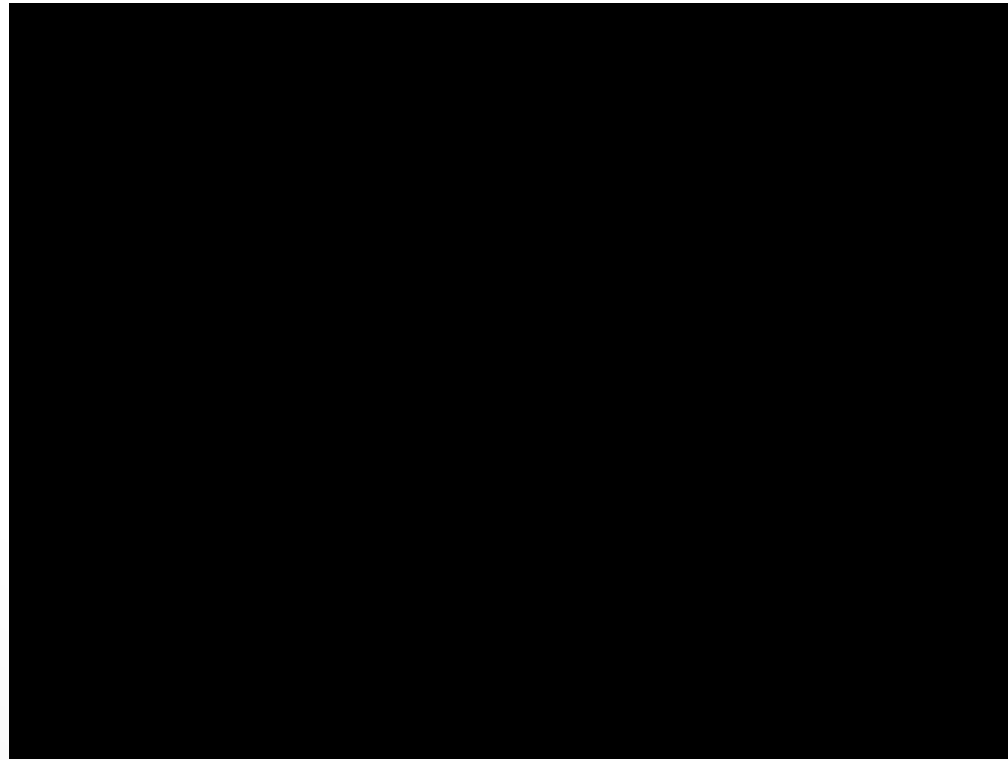


The Dangers of Obstructive Sleep Apnea and Post- Surgical Care

A presentation by Justin Locke and Jared
Burkholder

Video Overview of Sleep Apnea



Why does this matter to the medical community?

- Because it can KILL you
 - OSA and anesthesia
 - Monitoring Techniques
 - Screening for OSA

What did we do?

- Partnered with Dr. William Cale, Medical Director of the RMH center for sleep medicine.
- Goals:
 - Educate the necessary members of the surgical staff
 - Screen to identify high risk patients
 - Proper treatment and monitoring of OSA patients before and after surgery

Target Audience

- What we thought
 - Monitor techs
 - Surgeons
 - Anesthesiologists
 - Nurses
- Who was actually there
 - 20 people
 - Gender: 18 women, 2 men
 - Jobs: 18 nurses, 1 specialty clinic practice manager, 1 orthopedic surgeon
 - Age: Early 20's to about 60

More about Target Audience

- What we thought
 - Little to no knowledge about OSA
 - Inexperienced
 - Uninterested in topic
- Who they actually were
 - Extensive knowledge of OSA facts, dangers, and procedures
 - First hand experience with OSA patients
 - Very engaged throughout entire presentation

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Mean Scores
Before this presentation, I was aware of OSA and some of its dangers	8	9	1			4.4
This presentation added to my knowledge of OSA and its dangers	14	4				4.8
I knew how to properly manage OSA patients before this presentation	2	4	8	4		3.2
I understand the correct process for the management of OSA patients	3	10	4			3.9
This presentation was a valuable use of my time	13	5				4.7
The information was presented in a clear manner	15	3				4.8
The information was presented in a way that enhanced my learning	15	2	1			4.8
I was fully engaged throughout the entire presentation	14	4				4.8
I found the examples and information relevant to my position	13	4	1			4.7
I believe that I am capable of using the information that was presented	15	2	1			4.8
I feel as though I have gained a useful skill that can be used in my workplace setting	11	7				4.6

Learning Theories

- Keller's ARCS
- Elaboration Theory
- Meaning Reception Learning
- Andragogy
- Situated cognition

Keller's ARCS

- ARCS
 - Attention
 - Relevance
 - Confidence
 - Satisfaction
- Creates a framework for the motivation required for learning
- “[Keller] assumes that students’ motives (or values), together with their expectancies (efficacy and outcome expectations), will influence the degree of attention and effort they will supply to a learning task”
 - (Driscoll, 2005, p. 332).

Elaboration Theory

“Progressively more detail is to be elaborated in each level of the instruction (from the most general, inclusive content to the most specific) until the desired level of detail is reached.”

(Driscoll, 2005, p.144)



Topical Areas

What OSA is (Slides 1-6)

Why OSA is a problem (Slides 7-16)

RMH looking into OSA (Slides 17-26)

Screening tools (Slides 27-36)

What RMH wants to do (Slides 37-40)

Strategies to help patients (Slides 41-50)

Questions/ Discussion (Slide 51)



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OSA Facts

- **OSA is common – occurs in up to 9% of women, 24% of men, or approximately 18 million total in US population (National Sleep Foundation report on Sleep Apnea)**
- **Approximately 12-15% of the surgical population has OSA**
- **Clear relationship between OSA and other morbidities such as coronary artery disease, hypertension, and stroke.**
 - Michaelson, P., Allan, P. Chaney, J. Mair, E., 2006.
- **The medical community tends to under diagnose OSA**
 - Gupta, V., Reiter, E, 2004.

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Why you need to care: Just the facts...

- Surgical patients with OSA have higher complication rates, mostly respiratory, including pulmonary edema, bronchospasm, pneumothorax, and hypercapnea.
- Increased need for reintubation, even hours after surgery.
- Anesthetic, sedative, and analgesic drugs all selectively impair upper airway activity. In patients with OSA, these drugs may further jeopardize upper airway patency, especially during sleep
 - Liao, P., Yegneswaran, B. et al, 2006;
 - Rennotte, M., Baele, P., Aubert, G., Rodenstein, D., 1995.

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RMH Task Force

Purpose

- To assure patient safety and optimal perioperative care of patients with Obstructive Sleep Apnea (OSA)

Objective

- To bring awareness of OSA in all facets of perioperative care and to encourage practitioners to develop a consensus and standardize care within their disciplines to better manage Obstructive Sleep Apnea (OSA) in the perisurgical setting
- “At VCUHS we are managing OSA patients whether we acknowledge it or not...how good of a job we are doing, is the question.”
 - Task Force Member (VCU/MCV)

I have appropriated MCV's purpose and objectives as our own



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STOP BANG Model

1. Snoring

Do you snore loudly (louder than talking or loud enough to be heard through closed doors) Do not select yes if snoring is not loud?

Yes No

2. Tired

Do you often feel *tired*, fatigued or sleepy during your **normal waking hours**? Do not select yes if the tiredness/sleepiness is not often.

Yes No

3. Observed

Has anyone **observed** you *stop* breathing during your sleep?

Yes No

4. Blood pressure

Do you have or are you being treated for high blood *pressure*?

Yes No

5. BMI -

BMI greater than 35 (BMI = Pounds (lb) x 703 ÷ (Height in inches)²)?

Yes No

6. Age -

age over 50 years old?

Yes No

7. Neck Circumference

- *neck* circumference greater than 15.75 inches (measured around the base of neck)?

Yes No

8. Gender

- *gender*-male?

Yes No

STOP BANG continued

High risk of OSA – ‘yes’ to four or more items or ‘yes’ to three items if one of those items are either numbers 1, 3, 5, or 7

Low risk of OSA – ‘yes’ to less than three items

If you are at a high risk of having obstructive sleep apnea (OSA), it is important that you consider talking to your healthcare professional regarding the possibility of a sleep related breathing disorder. You may also self-refer to RMH Sleep Center to be evaluated by a board certified sleep physician at 540-437-8230.

If you would rather RMH Sleep Center call you regarding your self-referral, we would be happy to do so and we would be happy to answer any questions you may have regarding sleep disorder breathing. Please print your name and sign below, if you would like RMH Sleep Center to contact you.

The RMH solution that others have also modified.



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What we propose to do

- Identify patients with diagnosed or suspected OSA at pre-admission testing (PAT).
- Diagnosed OSA patients identified
 - Noted in allergy field of patient record
 - PAP settings documented
 - Bring equipment on the day of surgery
- No diagnosis of OSA'S but screen positive with modified STOP BANG.

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<u>Evaluation Period</u> (See criteria definition below)	<u>Initial Eval. Period</u> 30 min. after extubation or PACU admit (whichever occurs later)	<u>2nd Eval. Period</u> 30 min. after initial eval. (30 min after extubation or PACU admit)	<u>3rd Eval. Period</u> 30 min after 2 nd eval. (30 min after extubation or PACU admit)
Time of evaluation	__ __: __ __	__ __: __ __	__ __: __ __
<u>Hypoventilation</u> <8 respirations/minute (3 episodes needed for yes)	__ 0=No 1=Yes	__ 0=No 1=Yes	__ 0=No 1=Yes
<u>Apnea</u> ≥10 seconds (only 1 episode needed for yes)	__ 0=No 1=Yes	__ 0=No 1=Yes	__ 0=No 1=Yes
<u>Desaturations</u> Pulse Ox<30% with nasal cannula **If unable to wean pt. to nasal cannula counts as and event* (3 episodes needed for yes)	__ 0=No 1=Yes	__ 0=No 1=Yes	__ 0=No 1=Yes
<u>Pain/ Sedation mismatch</u> RASS score -3 through -5 and Pain scale score >5 (only 1 episode needed for yes)	__ 0=No 1=Yes __ RASS __ Pain	__ 0=No 1=Yes __ RASS __ Pain	__ 0=No 1=Yes __ RASS __ Pain
Highest FiO2 requirement each period	_____	_____	_____
PACU Instructions	If any of the above occur, inform anesthesiologist of possible need for monitored admission.	If any of the above occur, keep in PACU another 30 min. inform anesthesiology and ICU of possible admit.	If any of the above continue inform the anesthesiologist and ICU of monitored admission.

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Questions?



Meaningful Reception Learning

- “In reception learning, Ausubel (1961) stated that, ‘the entire content of what is to be learned is presented to the learner in its final form’ (p. 16). The learner is therefore required to internalize the information in a form that will be available for later use”
 - (Driscoll, 2005, p. 115).
- 3 conditions necessary for learning to become “meaningful”
 - Employ a meaningful learning set
 - Must view content as relevant
 - Must be able to relate new content to prior knowledge to make connections

Meaningful Reception Learning and ARCS

- Each condition for “meaningful” learning can be related to a step in ARCS
 - Meaningful learning set = Attention
 - View content as relevant = Relevance
 - Relate new content to prior knowledge = Confidence
- Using ARCS as instructional design model ensured that each condition was met and that meaningful learning could take place

Andragogy

- Malcolm Knowles developed the theory of Andragogy specifically for adult learners.
- Andragogy's assumptions about adults and the design of learning:
 - Adults need to know why they are learning something
 - Adults need to learn experientially
 - Adults approach learning as problem-solving
 - Adults learn best when the topic is of immediate value

How We Used Andragogy

- Showed Importance of learning content
- Discussions about experiences
- Strategies to caring for post surgery OSA patients

Situated Cognition

- Situated Cognition, as defined by Clancey (1997), claims that, “every human thought is adapted to the environment, that is, situated, because what people perceive, how they conceive of their activity, and what they physically do develop together” (p. 1-2). “Moreover, what people perceive, think, and do develops in a fundamentally social context”
 - (Driscoll, 2005, p. 157).

Our presentation and Situated Cognition

- Most nurses learn in a hands-on and practical environment
 - Slide was created that was meant to be used as a reference guide in day-to-day setting for nurses when monitoring high-risk or identified OSA patients
 - All material was related to RMH and actual workplace settings including what particular team members and departments would be involved
 - Most of the presentation was a step-by-step process that the audience could follow in their own workplace environments
- Nursing is a very social activity and learning often occurs through discussion and case studies
 - Presentation ran 30 minutes over allotted time due to rich discussion that added to shared meaning making
 - Some patients were patients of Dr. Cale's but almost all had some experience with OSA patients in the past and shared these stories
 - Dr. Cale presented his own experiences in the field of Sleep Medicine

Questions?

