

1 ☐ **Strangulation Assessment for Health Care Providers**

2 ☐

3 ☐ **Kim Basinger**
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4 ☐

Wolf Legal Nurse Consultants, Inc.

5 ☐ **ALLYSON CORDONI**
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6 ☐ **Introduction and
Course Description**

- ▶ Course Expectations:
 - ▶ Complete the entire activity
 - ▶ Complete and submit an evaluation post activity

7 ☐ **Introduction and
Course Description**

- ▶ Course Objectives:
 - ▶ Define strangulation and the possible mechanisms of action
 - ▶ List potential signs and symptoms of non-fatal strangulation
 - ▶ Recognize injuries related to non-fatal strangulation
 - ▶ Understand discharge instructions for non-fatal strangulation patients

8 ☐ **Evaluation and Certificates**

- ▶ A link will be provided via email after completion of this webinar.
- ▶ Please complete the evaluation and return via email. Your certificate for 4 continuing education hours will be emailed to you.

9 ☐ **Definition:
Strangulation vs. Choking**

- 1 ► Strangulation: a form of asphyxia characterized by the closure of the blood vessels and/or air passages of the neck as a result of external pressures on the neck



- Choking: obstruction of the air passages due to a foreign body such as a piece of food

10 ☐ **Facts:**

- 50% of non-fatal strangulation cases have NO visible injury
 - Of the 50% WITH visible injury
 - 35% are too minor to appear in photographs
 - 15% are sufficient enough to appear in photographs

11 ☐ **Facts:**

- Most non-fatal strangulation injuries are internal
 - Death can occur up to and beyond 36 hours after the event, even without visible injury
-

12 ☐ **A Little Perspective
Regarding Visible Injury**

13 ☐

Relying on traditional visible injury in assessment of non-fatal strangulation can cause an increase in mortality and morbidity.

14 ☐ **MISUNDERSTOOD**

- Providers expect to see significant external injury
- Lack of external injury translates to a threat not considered to be serious
- Will look at a black eye, or a cut on the head... but not necessarily slight redness



15 ☐ **MISUNDERSTOOD**

- Often attribute symptoms to other causes
- Preconceived notion of how a patient should respond to a trauma reaction
 - What is a "normal" response to trauma
 - Does everyone react the same in similar circumstances

16 ☐ **Misdiagnosed and Mistreated**

-

Medically and
In the criminal justice system

17 ☐ **Sexual Assault and non-fatal strangulation**

Sexual assault was the motive in 66% of female victims of ligature non-fatal strangulation and in 52% of those due to manual strangulation

Sexual Assault Victims' are strangled 35% of the time.

18 ☐ **Non-Fatal Strangulation and Domestic Violence**

In the context of an abusive domestic violence relationship, non-fatal strangulation is not usually used to kill the victim... it is used by the perpetrator to let the victim know that he is capable and willing to do so at any given point in time

19 ☐ **Non-Fatal Strangulation and Domestic Violence**

In the context of an Intimate Personal Violence (IPV) relationship, why does the abuser use strangulation?
Power & Control...

20 ☐ **Power and Control**

.... to let the patient know that he could kill him/her! That he is capable and willing to do so at any given point in time.



21 ☐ **Non-Fatal Strangulation and Domestic Violence**



▶ It *directly* and *immediately* places a victim's life in the hands of the abuser

▶ Practicing homicide

▶ Desensitizing murder

▶ Power & Control: Victim more submissive

22 ☐ **Highest risk of homicide?**

- ▶ When she/he leaves the relationship.
 - ▶ Statistically, separating from an abuser increases a victim's risk of being killed by 75%.
- ▶ At all times victims are making safety assessments/planning. What is the safest thing for me to do?
 - ▶ Even if that means not cooperating with law enforcement.

23 ☐ **Fact:**

Strangulation represents an escalation of force

24 ☐ **Continuum of Violence**

25 ☐

26 ☐

27 ☐ **Duration of Applied Force**

Effects of Non-Fatal Strangulation

- Pressure released immediately; consciousness will be regained in 10 seconds.
- 50-seconds is the "point of no return" because a person's bounce-back reflexes become inoperative.
- Brain damage can occur in less than a minute.
- Death will occur within 1 to 5 minutes, if strangulation persists.

▶

28 ☐ **Urination/Defecation**

▶ *If the brain is deprived of oxygen for long enough, the body is unable to maintain the muscle tones that it takes to maintain continence... prolonged lack of oxygen to the brain can cause loss of bowel and bladder control.*

29 ☐ **We MUST Ask**

- ▶ Do you think she will mention this voluntarily? Be sensitive.
- ▶ Do you think she even knows it is a sign of strangulation/attempted murder?

30 ☐ **We MUST Ask!!**

- ▶ Often Patients do not consider non-fatal strangulation, or "choking" as that serious in IPV
- ▶ Some Patients say he/she does it "just to shut me up"
- ▶ Patients are embarrassed they lost control of their bowels or bladder and do not mention it

▶

▶

31 ☐ **Texas Penal Code 22.01 (b-1)(3)**

THIRD DEGREE FELONY

▶

"The offense is committed by intentionally, knowingly, or recklessly impeding the normal breathing or circulation of the blood of the person by applying pressure to the person's throat or neck or by blocking the person's nose or mouth."

32 ☐ **3 Forms of Strangulation**



▶ Manual

▶ Ligature

▶ Hanging

▶ Suicide

▶ Autoerotic-asphyxia

33 ☐ **Combination**

Combination of strangulation and suffocation can be more serious and is common in fatal cases.

Ex: while strangling, they pinch nose, cover mouth, resulting in the chest being unable to expand (i.e., sitting on chest)



34 ☐ **Vessels: Arteries and Veins**

35 ☐ **Applied Force to Render Someone**

36 ☐ **Occlusion**

▶ Jugular vein Occlusion

▶ Lateral neck – superficial

▶ 4.4 psi 10 seconds



37 ☐ **Occlusion**

▶ Carotid artery occlusion

▶ Anterior neck – deeper

▶ 11 psi for 10 seconds



38 ☐ **Occlusion**

▶ Tracheal Occlusion

- ▶ 30 psi for 10 seconds



39 ☐ **Perspective**

40 ☐ **Perspective**

41 ☐ **Perspective**

42 ☐

43 ☐ **Effects of Non-Fatal Strangulation**

44 ☐ **Effects**

- ▶ The brain needs 20% of the oxygen you breathe to function normally (which comes in the form of fresh blood coming from the heart)
- ▶ “Lightheaded” = brain being suffocated
- ▶ “warm and fuzzy feeling” = brain cells dying!

45 ☐ **Nurse Joanna Explains:**

46 ☐ **Signs & Symptoms**

- ▶ Voice changes
 - ▶ 50% of victims
 - ▶ Dysphonia (hoarseness)
 - ▶ Aphonia (loss of voice)



47 ☐ **Signs & Symptoms**

- ▶ Swallowing changes
 - ▶ Dysphagia (difficulty swallowing)
 - ▶ Odynophagia (painful swallowing)
- ▶ Tongue swelling due to venous congestion



48 ☐ **Signs & Symptoms**

- ▶ Breathing changes
 - ▶ Dyspnea
 - ▶ Apnea
 - ▶ Hyperventilation

- ▶ Stridor (may be premortal)



49 ☐ **Signs & Symptoms**

- ▶ Neck swelling
 - ▶ Venous engorgement
 - ▶ Soft tissue injury
 - ▶ Internal hemorrhage
 - ▶ Laryngeal fracture
 - ▶ Subcutaneous emphysema
 - ▶ Hemoptysis
- ▶ Muscle spasms of the neck



50 ☐ **Visual Signs & Symptoms**



- ▶ Bruising
- ▶ Scratches
- ▶ The accused may have more injuries as the victim tries to fight back
- ▶ Hyoid bone fracture (generally found post-mortem)
 - ▶ Supports the tongue and floor of the mouth
 - ▶ May close off airway in a matter of hours
 - ▶ If isolated fracture, as a rule, only in strangulation

51 ☐ **Comprehensive Physical Examination**

- ▶ Examination should spread beyond a brief glance at the neck and should extend to other areas
- ▶ Examination needs to look for injuries beyond a handprint on the neck
- ▶ Consider swabbing the neck during evidence collection (AFTER the patient has been medically cleared)



52 ☐ **Comprehensive Physical Examination**

- ▶ Consider the significance of injuries, signs & symptoms, and how the lack of either or both can impact sequelae
- ▶ Goal: Every victim should receive a forensic exam by a qualified medical professional
- ▶ A medical evaluation may be crucial in detecting internal injuries and saving a life



53 ☐ **Examine Beyond the Neck**

54 ☐ **Swelling**

55 ☐ **Bruising Behind Ears: Battle's Sign**

56 ☐ **What is the cause of
Bruising behind the ear or "Battle's Sign
(Mastoid Process)**

- ▶ Basilar Skull Fracture
- ▶ Tearing of the sternocleidomastoid muscle
- ▶ Traumatic Brain Injury

57 ☐ **Thumbprint Bruise**

58 ☐ **Fingernail Marks**

59 ☐

60 ☐

61 ☐ **Defensive Wounds on Victim**

62 ☐

63 ☐

64 ☐ **Scrapes/Scratches**

65 ☐

66 ☐

67 ☐

68 ☐

69 ☐

70 ☐

71 ☐72 ☐73 ☐ **Neck**74 ☐ **Visual
Signs & Symptoms**

- ▶ Subconjunctival Hemorrhage
 - ▶ Capillary rupture in the sclera
 - ▶ Intermittent compression, release of the victim's neck (peaks & valleys)

75 ☐ **Subconjunctival Hemorrhage**76 ☐ **Visual Signs & Symptoms**

- ▶ Petechiae – due to venous congestion
 - ▶ Eyes
 - ▶ Skin
 - ▶ Scalp
 - ▶ Behind ears
- ABOVE the point of constriction
- ▶ Subconjunctival hemorrhage
- ▶

77 ☐ **Over the Eyelid**78 ☐79 ☐80 ☐ **Petechiae –
one red spot in eye**81 ☐ **Petechiae on Ear**82 ☐83 ☐84 ☐ **Guess What??**

"If there is petechiae on the skin surface, there is petechiae in the brain."

- Dean Hawley MD
Forensic Pathologist

85 ☐ **Petechiae on the brain**

86 ☐ **Remember: Visible Injury**

87 ☐ **What is Going on Inside**

88 ☐ **Signs & Symptoms**

▶ Neurological Effects

▶ Early

▶ Restlessness

▶ Combativeness

▶ Panic attacks

▶ Flat affect

▶ Dizziness

▶ Vision Changes

89 ☐ **Signs & Symptoms**

▶ Early, cont.

▶ Sensory defects

▶ Seizures

▶ Loss of consciousness

▶ Incontinence

▶ Headaches

▶ Tinnitus

▶ Eyelid droop

▶ Paralysis

▶

90 ☐ **Signs & Symptoms**

▶ Neurological Effects

- ▶ Late
 - ▶ Psychosis
 - ▶ Amnesia
 - ▶ Progressive dementia
 - ▶ Anoxic encephalopathy may lead to brain death
- ▶ Vomiting
- ▶

91 ☐ **Signs & Symptoms**

- ▶ Negative pleuritic pressures
 - ▶ Pneumonia
 - ▶ ARDS
 - ▶ Pulmonary Edema
- ▶

92 ☐ **Physiological Effects**

- ▶ Traumatic Brain Injury (TBI)
- ▶ Carotid dissections and occlusions may occur later
 - ▶ TIA
 - ▶ Stroke
 - ▶ Death
- ▶

93 ☐ **Thyroid storm**

- ▶ Thyroid storm is a crisis or life-threatening condition characterized by an exaggeration of the usual physiologic response

94 ☐ **Thyroid storm**

- ▶ Thyroid storm is generally seen in patients with Graves' disease but should also be suspected in patients with fever, tachycardia, altered mental status, and risk factors including local trauma to the neck, such as non-fatal strangulation
- ▶

95 ☐ **Thyroid storm**

- ▶ Symptoms of thyroid storm
- ▶ Symptoms of thyroid storm are similar to those of hyperthyroidism, but they are more sudden, severe, and extreme. People with thyroid storm might not be able to seek care on their own.
- ▶

96 ☐ **Thyroid storm**

- ▶ Common symptoms include:
 - ▶ racing heart rate (tachycardia) that exceeds
 - ▶ 140 beats per minute, or atrial fibrillation
 - ▶ High fever
 - ▶ Persistent/profuse sweating
 - ▶ Shaking
 - ▶ Agitation
 - ▶
 - ▶

97 ☐ **Thyroid storm**

- ▶ Restlessness
- ▶ Confusion
- ▶ Diarrhea
- ▶ Unconsciousness
- ▶

98 ☐ **Thyroid Gland**

99 ☐ **Neurobiology of Trauma**

100 ☐ **Neurobiology of Trauma**

Trauma reactions can impact how patients may present after they have been non-fatally strangled

101 ☐ **Neurobiology of Trauma**

We must understand trauma reactions and the impact that non-fatal strangulation can have on how patients may present to the facility.

102 ☐

Hypoxic Brain

Injury -

How it Can Make the Victim Appear:

- ▶ No blood flow to the brain
- ▶ Brain isn't recording
- ▶ No memory of event
- ▶ The patient is "inconsistent"
- ▶ Evidence instead of impeachment

103 ☐ **Neurobiology of Trauma**

Also, consider hypoxic brain injury and the altered mental status as a result of the non-fatal strangulation.

- ▶ Don't jump to conclusions.
- ▶ Document the patient's presentation

104 ☐ **Neurobiology of Trauma**

105 ☐ **What is Going on Inside the Brain**

106 ☐ **The *Amygdala***

- ▶ The body's alarm circuit for fear lies in an almond-shaped mass of nuclei deep in the brain's temporal lobe. The *amygdala*, from the Greek word almond, controls autonomic responses associated with fear, arousal, and emotional stimulation and has been linked to neuropsychiatric disorders, such as anxiety disorder and ...
 - ▶ Fight, Flight, or Freeze
 - ▶ Adrenalin and Cortisol release

107 ☐ **The *Hippocampus***

- ▶ The *hippocampus* belongs to the limbic system and plays important roles in the consolidation of information from short-term memory to long-term memory, and in spatial memory that enables navigation. The *hippocampus* is located under the cerebral cortex and in primates in the medial temporal lobe
- ▶ Cortisol facilitates and impairs the actions of stress in the brain memory process

108 ☐ **911 "Take a Deep Breath – Calm Down"**

109 ☐ **ED Order Set**

110 ☐ **ED Order Set**

- ▶ Measure neck circumference
- ▶ Apply C-Collar

►Dysphasia Screening

111 ☐ **ED Order Set**

►CT C-spine, or CTA of the Neck with IV Contrast:

►Altered mental status

►Intoxication

►Distracting injury

►Tenderness over c-spine

►Neurological deficit

►LOC

►Incontinence during event

►

►

►

112 ☐ **ED Order Set**

►Dysphasia, abnormal voice, subcutaneous emphysema
or respiratory s/s present

►Labs: (as indicated)

►ABG's

►Thyroid Panel

►CK – muscle tissue damage

►Tox screen

►BAL

►PT/PTT

►Pregnancy

113 ☐ **ED Order Set**

►Consider:

►Carotid Doppler

►Trauma Services Consult

►ENT Consult

114 ☐ **ED Order Set**

►OB/GYN Consult

►OB Consult on all pregnant patients

- ▶ Cramping/spotting if pregnant >24 weeks



115 ☐ What we Must Know

116 ☐ What we Must Know

- ▶ Questions to ask
- ▶ How to ask the questions
- ▶ How to document the signs/symptoms in their report
- ▶ How to properly examine a non-fatal strangulation victim



117 ☐ What we Must Know

- ▶ How to do follow-up (Secondary Assessment)
- ▶ Defensive wounds in non-fatal strangulation cases and trauma reactions
- ▶ Utilize non-fatal strangulation Supplement



118 ☐ Who Needs to Know

- ▶ Cadet Training/Patrol Training
- ▶ Detective Training
- ▶ EMS
 - ▶ Documentation
 - ▶ Encourage Transport/Forensic Exam
- ▶ SANE
- ▶ Hospital staff

119 ☐

120 ☐ MISSED

- If we do not ask, the Patient most likely will not tell... WHY?
 - ▶ Often downplay serious symptoms.
- Patients are focused on the here and now!
- 1/3 of female patients in the ER are there for a domestic violence related injury.



121 ☐ **Remember:**

"You cannot have suspicion without knowledge."

Dr. Nancy Kellogg

122 ☐ **Documenting Emotion**123 ☐ **Documenting Emotion**

▶What did the abuser say during the strangulation?

▶"are you ready to die bitch?"

▶"tonight is the night"

▶"say goodbye"

▶

124 ☐ **Documenting Emotion**

▶What did the abuser say during the strangulation?

▶"you made me do this"

▶"I'm going to kill you"

▶"DIE ALREADY"

▶"look at me while you're dying"

▶

125 ☐ **How did the Patient's Body/Head Feel...**

1 ▶No strength; like a noodle

▶Woozy

▶Felt like water in her head

▶Throbbing; wavy

▶Pressure in head

▶

▶

▶

2 ▶Tingling sensation around

lips

▶Felt was trying to blow up a tiny water balloon

▶

▶

126 ☐ **How did the Patient's Body/Head Feel...**

- 2 ▶ Felt like eyes were popping out
- ▶ Felt like heartburn
- ▶ Head felt big and red
- ▶ Felt tight
- ▶
- 4 ▶ Felt like water in ears
- ▶ Spinning
- ▶ Could feel heartbeat in head

127 ☐ **Did the Patient have any *change* or *loss of vision* during/after the non-fatal strangulation/suffocation?**

- 1 ▶ Went black
- ▶ Went white
- ▶ Saw stars
- ▶ Got blurry
- ▶ Room closed in
- ▶ Tunneling
- ▶
- ▶
- 2 ▶ Felt like a slow blink
- ▶ Everything faded
- ▶ Fuzzy around the edges
- ▶ Cloudy
- ▶ Felt like an old timey movie

128 ☐ **Did the Patient have any *change* or *loss of vision* during/after the non-fatal strangulation/suffocation?**

- 2 ▶ Could not see
- ▶ Darker and darker
- ▶ Saw dots
- ▶ Narrower and narrower
- ▶ Saw flashes

- ▶
- 4 ▶ Felt like cameras flashing
- ▶ Saw dark shadows closing in her vision
- ▶

129 ☐ **Did the Patient have any *change* or *loss of vision* during/after the non-fatal strangulation/suffocation?**

- 1 ▶ Couldn't hear anything
- ▶ Gurgling
- ▶ It got quiet
- ▶ Muffle
- ▶ Ringing
- 2 ▶ Sounded like sound was coming through a can
- ▶ Sounded like a tunnel, sound was fading
- ▶ Sounded like a shell over my ear

130 ☐ **Did the Patient have any *change* or *loss of vision* during/after the non-fatal strangulation/suffocation?**

- 2 ▶ Buzzing sound
- ▶ Ears felt like they were popping
- ▶ Felt her face get hot and could hear a rushing sound in her ears
- ▶
- 4 ▶ Felt like she had cotton in her ears
- ▶ Feeling of being temporarily disoriented like from the noise the first time she shot a gun
- ▶

131 ☐ **Unconscious**

- ▶ "Passed out"
- ▶ "Blacked out"
- ▶ "He choked me out"
- ▶ Memory lapse or memory loss
- ▶ Unexplained positional change

132 ☐ **Unconscious**

133 ☐ **LOSS OF CONSCIOUSNESS**

Did the Patient lose consciousness? Can't remember? Not sure? Probably did.

- ▶ Does the Patient have an unexplained injury? (bump on the head, lower leg injury)
- ▶ Loss of memory?
- ▶ Standing up but then waking on the floor?
- ▶ Bowel or bladder incontinence?
- ▶ Signs of losing consciousness: fuzzy, went black, room spinning, felt like my head was going to explode, eyes bulging (vs. "white"—coming back from consciousness)
- ▶

▶

134 ☐135 ☐136 ☐137 ☐ **Interpreting Injuries/Defensive Wounds**

- ▶ On patient: self-inflicted defensive injuries (neck, chest, face)
- ▶ Usually a patient's hands are either clawing at her own neck or the suspect to get the suspect to release his grip

138 ☐ **Interpreting Injuries/Defensive Wounds**

- ▶ Accused may have more (and seemingly worse) visible injuries than the victim
- ▶ Scratches, claw marks on both Perp and patient
- ▶ Bite marks
- ▶ Evidence of the terror the patient experienced
- ▶

139 ☐140 ☐141 ☐142 ☐ **What We Have Learned**143 ☐ **Drowning**

144 ☐ **Drowning**

- ▶ Why include Drowning in a Strangulation lecture?
 - ▶ Impediments of airflow
 - ▶ Purposefully submerging the airway of another or pouring water down the airway of another with the intent of killing that person
- ▶

145 ☐ **Drowning**

"Drowning is the second leading cause of unintentional injury death for children ages 1 to 14 years, and the fifth leading cause for people of all ages" as reported by the CDC.

146 ☐ **Drowning**

- ▶ There are several types of homicidal drowning:
 - ▶ Punishment or torture by way of water
 - ▶ Quieting a child crying in a bathtub by head submergence
- ▶
- ▶

147 ☐ **Drowning**148 ☐ **Drowning**149 ☐ **Drowning**

- ▶ Negligence
 - ▶ Leaving children or challenged adults alone in or near water
 - ▶ Operating a boat while intoxicated and hitting a swimmer
 - ▶ Driving recklessly with a resulting crash into water with death of a passenger
- ▶
- ▶

150 ☐ **Drowning**

- ▶ Neonatal homicide
 - ▶ Giving birth into a toilet or other water environment and leaving the fetus or infant in the fluid with no attempt to save it
 - ▶ Purposefully drowning someone to "save them from evil"
- ▶

151 ☐ **Drowning**152 ☐ **Drowning**

- ▶ Sexual Abuse and Pedophilia

- ▶ Sexually assaulting a child in the privacy of a bathroom bathtub when it is considered acceptable for an adult to be touching a naked child in the washing and drying process. Such an assault can lead to intentional or unintentional airway submersion of the child.



153 ☐ **Drowning**

- ▶ Drowning or near-drowning must be investigated even when presented as an accident

- ▶ CPS

- ▶ APS

- ▶ Law Enforcement

154 ☐ **Drowning**

155 ☐ **Discharge Instructions After Non-fatal Strangulation**

156 ☐ **Discharge Instructions After Non-fatal Strangulation**

- ▶ Documentation by photographs sequentially for a period of days after the assault is very helpful in establishing a journal of physical evidence

- ▶ Have police take photographs as bruising appears or worsens

157 ☐ **Discharge Instructions After Non-fatal Strangulation**

- ▶ Victims should seek medical attention if they experience:

- ▶ Difficulty breathing

- ▶ Speaking

- ▶ Swallowing

- ▶ Severe nausea and vomiting



158 ☐ **Discharge Instructions After Non-fatal Strangulation**

- ▶ Victims should seek medical attention if they experience:

- ▶ Lightheadedness
- ▶ Continuous severe headache
- ▶ Involuntary urination and/or defecation, especially pregnant victims.

▶

159 ☐ **Discharge Considerations After Non-fatal Strangulation**

- ▶ Does the patient have a safe place to go
- ▶ Stealthy information to patients that do not wish to press charges
- ▶ Are your ER follow up policy and procedures in place?
- ▶ Strangulation supplement assessment:
- ▶ Training Institute on Strangulation Prevention: www.strangulationtraininginstitute.com

160 ☐ **Disclaimer**

- ▶ The purpose of this training, though primarily for healthcare providers, is also relevant to all First Responders and the Judicial System

161 ☐ **Questions???**

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- ▶ www.ForensicNurseExperts.com

162 ☐ **Resources**

- ▶ www.strangulationtraininginstitute.com (has an online training for officers along with other resources, including medical references).
- ▶ Article published in The Texas Prosecutor: Jan-Feb 2014 edition (online copies available on the TCDA Website)
- ▶ IDVSA, The Voice and Cadet Video
- ▶ DV/Strangulation ppt by Jen Markowitz from Aequitas: <http://www.aequitasresource.org/trainingDetail.cfm?id=50>
- ▶ AVS & Strangulation Supplements

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164 ☐ **Credits**

Thank you to:

Ruth Downing, MSN, RN, CNP, SANE-A

For allowing us to utilize some of her slides for this presentation

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165 ☐ **Credits:**

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For allowing us to utilize some of her slides for this presentation

166 ☐ **Please Complete and Submit the Evaluation to Receive your 4 hours of Continuing Education Credits**

167 ☐