

THE FATAL FOUR

pennsylvania
DEPARTMENT OF HUMAN SERVICES

Disclaimer

- The information presented today is intended to increase knowledge in support of individuals with intellectual and developmental disabilities
- The information is not intended to replace recommendations or instructions from an individual's health care practitioner

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Objectives


- Review four common medical conditions that are associated with preventable health complications and death
- Review for each condition:
 - Complications
 - Causes and risk factors
 - Treatment and prevention
- Discuss planning for:
 - Risk mitigation
 - Staff education
 - Quality assurance

What are the Fatal Four?



- Four major health concerns seen frequently in individuals with intellectual and developmental disabilities which if untreated can progress to serious illness or death.
- These conditions are often preventable or at least able to be managed effectively with attentive care.
- Deaths associated with these conditions are often preventable deaths

What are the Fatal Four?

Aspiration	Constipation
Dehydration	Seizures

Aspiration

Definitions and Complications

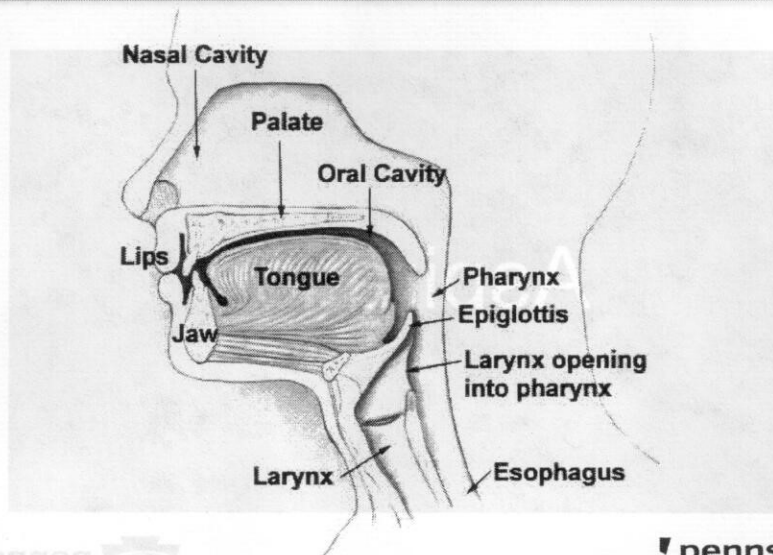
- **Aspiration:** When fluid, food, saliva or medication enters the lungs
- Aspiration can lead to refusal to eat, weight loss, poor nutrition, wheezing, difficulty breathing, hypoxia, and/or pneumonia which can cause death.
- **Choking:** When food or other items become lodged in the back of the throat.
- Choking can lead to a blockage in the airway, preventing oxygen from entering the lungs and the blood stream.
- This can quickly lead to irreversible brain damage and death.



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Anatomy



<http://training.seer.cancer.gov/head-neck/anatomy/overview.html>

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Signs and Symptoms

Aspiration

- Coughing or excessive drooling with eating or drinking
- Difficulty breathing or shortness of breath
- Wheezing
- Statement such as "food is getting stuck"
- Frequent throat clearing
- Eating too fast or packing the mouth

Choking

- Anxious or agitated state
- Reddened face
- Difficulty or noisy breathing
- Severe coughing or gagging
- Hands to throat
- Not able to talk
- Not able to breath
- Skin turning gray or blue
- Loss of consciousness

Aspiration/Choking

Causes

- Difficulty swallowing - dysphagia
- Gastroesophageal reflux disease
- Eating too rapidly
- Being fed too quickly
- Improper positioning
- Improper consistency or texture of food/liquids

Risk Factors

- Dysphagia diagnosis
- Medical disorders, including neurological disorders
- Low muscle tone
- Gastroesophageal reflux disease, esophageal strictures, feeding tubes
- Decayed or missing teeth, ill-fitting dentures
- History of pneumonia

Aspiration/Choking

Treatment

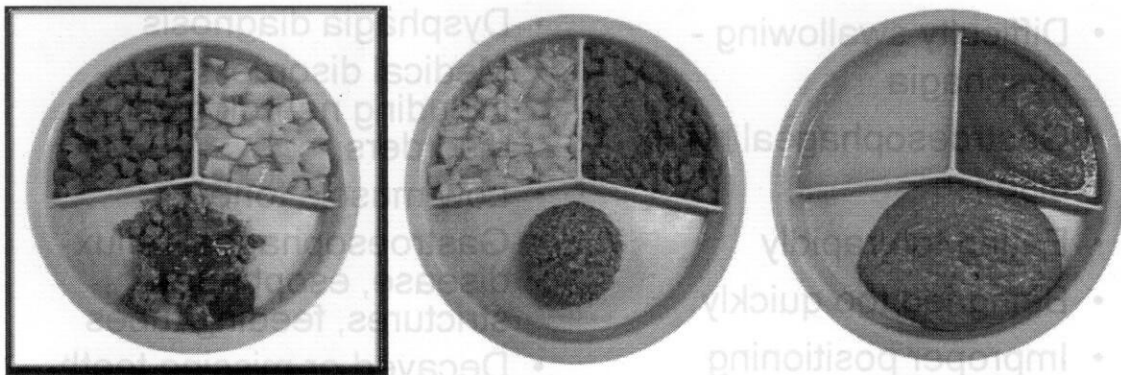
- Identify symptoms of aspiration or choking
- Notify health care practitioner for appropriate treatment options
- Treatment of complications of aspiration
- If individual is choking
 - THIS IS AN EMERGENCY: **CALL 911 IMMEDIATELY!**
 - Initiate first aid with abdominal thrusts
 - If individual becomes unresponsive, move him/her to the floor and begin CPR

Prevention

- Staff training for identification, documentation, modified food and drink consistency
- Notify health care practitioner, so appropriate diagnosis can be made
- Notify health care practitioner of every choking event
- Review and follow care plans
 - Provide supervision and assistance
 - Always follow the prescribed diet
 - **Prepare food as instructed**
 - Avoid foods that were identified to increase risk
 - Dentures are in place and properly secure and oral hygiene is completed per ISP.



Food Consistencies



<http://www.dbhds.virginia.gov/library/quality%20risk%20management/qrm-standard%20guidance%20for%20food.pdf>








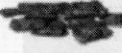

Constipation


Constipation

- Definition
 - Infrequent, hard, or hard to pass stool
 - Infrequent is often defined as fewer than three bowel movements a week
 - Normal frequency of bowel movements vary from person to person
- Complications
 - Discomfort/pain
 - Behavioral changes
 - Hemorrhoids (swollen blood vessels)
 - Anal fissures (small tears and bleeding)
 - Rectal prolapse (intestinal lining pushing through anus)
 - Fecal impaction (stool blocks the colon/rectum)
 - Bowel obstruction (complete blockage and a medical emergency)
 - Bowel perforation
 - Death

Constipation


BRISTOL STOOL CHART

	Type 1 Separate hard lumps	Very constipated
	Type 2 Lumpy and sausage like	Slightly constipated
	Type 3 A sausage shape with cracks in the surface	Normal
	Type 4 Like a smooth, soft sausage or snake	Normal
	Type 5 Soft blobs with clear-cut edges	Lacking fibre
	Type 6 Mushy consistency with ragged edges	Inflammation
	Type 7 Liquid consistency with no solid pieces	Inflammation




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<http://cdn.intechopen.com/pdfs-wm/46082.pdf>




Constipation Symptoms

- Hard and dry feces
- Hard, protruding abdomen
- Bloating and complaints of stomach pain
- Vomiting digested food that smells like feces
- Anorexia (loss of appetite)
- Behavioral outbursts
- Fever
- Overflow incontinence



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<http://cdn.intechopen.com/pdfs-wm/46082.pdf>



Constipation

Causes

- Inadequate fluid intake
- Inadequate fiber intake
- Uncoordinated muscle contractions
- Immobility
- Polypharmacy
- Iron supplements
- Calcium supplements
- PICA (eating non-food substances)

Risk Factors

- Cerebral palsy
- Cystic fibrosis
- Muscular dystrophy
- Spinal cord injury
- Neurological damage
- Illness or injury
- Poor swallowing
- Down syndrome

Constipation

Treatment

- Juice (apple/prune)
- Suppositories
- Laxatives
- Disimpaction (removing stool)
- Stool softeners
- Enema
- Nasogastric tube

Prevention

- Track bowel movements
- Adequate fluid intake
- Adequate fiber intake
- Regular exercise
- Probiotic agents
- Bulking agents
- Laxatives

Dehydration



Dehydration Definitions/Complications

- Loss of the amount of water in the body and may have alteration in electrolyte levels
 - Sodium, potassium, calcium, chloride, magnesium
- Complication can be serious and include
 - Constipation
 - Heat injury
 - Acute kidney injury/kidney failure
 - Seizure from abnormal electrolyte levels/cerebral edema
 - Loss of consciousness/coma
 - Loss of blood volume or shock which can lead to death



Dehydration Symptoms

Mild/Moderate Dehydration

- Dry mouth
- Dry eyes
- Increased thirst
- Dark concentrated urine
- Decrease urine volume
- Muscle weakness
- Headache
- Dizziness

Severe Dehydration

- Extreme thirst
- Confusion
- Lethargy/coma
- Sunken eyes
- No sweating
- Low blood pressure



Dehydration

Causes

- Decreased intake of fluids
- Increased loss of fluids

Risk factors

- Difficulty swallowing
- Limited mobility
- Poor communication
- Certain medications or medical illnesses
- Heat or humidity exposure



Dehydration

Treatment

- Fluid and electrolyte replacement
- IV fluids for severe dehydration
- Hospitalization for symptoms of circulatory collapse
- Potassium supplements
- Treat underlying cause

Prevention

- Drink plenty of fluids
- Increase fruits and vegetables
- Increase fluid intake with
 - Presence of vomiting and diarrhea
 - Strenuous exercise
 - Heat exposure
 - Other illnesses or certain medications
- Do not ignore your thirst
- Avoid caffeine and alcohol

Seizures

Seizures Definition/Complications

- Abnormal, unregulated electrical activity in the brain resulting in involuntary alterations in behavior or physical symptoms.
- Complications:
 - SUDEP (Sudden unexpected death in epilepsy)
 - Falls with injury
 - Other traumatic injuries
 - Aspiration
 - Automobile accidents
 - Tongue, lip or cheek injuries related to biting
 - Status epilepticus

Seizures Symptoms

- The symptoms of a seizure will depend on which area of the brain is affected. Symptoms vary with individuals common symptoms include:
 - Hearing or smelling things that are not there
 - Unresponsive or staring
 - Fluttering of eyes or rolling eyes up or in a specific direction
 - Lip smacking
 - Muscle spasms- on one side or full body
 - Loss of bladder or bowel
 - Numbness or tingling in extremities

Seizures

Causes

- Missing doses of anti-seizure medication
- Dehydration
- High fever
- Too high or low blood sugar
- Sensory stimuli (strobe lights, video games)
- Polypharmacy
- Severe constipation

Risk Factors

- Neurological disorders
- Cerebral palsy
- Down syndrome
- Traumatic brain injury
- Stroke
- Tuberous sclerosis
- Autism
- Infections
- Drugs or toxins
- Brain tumors
- Diabetes



Seizures Treatment

- If seizure lasts longer than 5 minutes or has repeat seizure with no return to base line this is an emergency: Call 911
- Ensure the individual's safety during seizure activity
- Documentation that includes: seizure activity, duration and individuals response
- Anti-seizure medications
- Elimination of cause
- Vagal Nerve Stimulators
- Dietary treatment
- Neurosurgical intervention



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Seizures Prevention

- Most seizure disorders cannot be prevented, effective management is key
 - Compliance with medication and monitoring
 - Avoid situations which trigger seizure
 - Avoidance of constipation
 - Avoidance of dehydration
 - Early treatment of infection and fevers
 - Reduce possible complications (do not drive or swim alone)
 - Refrain from use of recreational drugs

Actions to Mitigate the Risk to Individuals

- Review current and/or develop policies and procedures that:
 - Address measures to identify individuals at risk
 - Establish precautions to minimize or eliminate the causes
 - Ensure appropriate documentation and accuracy of records
 - Establish processes for emergency response and calling 911

Staff Education

- Establish education plan for staff
 - Contains information on identifying the at risk individuals
 - Reviews signs and symptoms
 - Ensures staff competency with all aspects of the individual's care plans
 - Medical evaluations/recommendations, assessments, ISPs, and any other treatment plans used
 - Competency with emergency response

Quality Assurance

- Establish Quality Initiatives program
 - Monitors compliance
 - Establishes policies to address non-compliance
 - Identifies opportunities for improvement
 - Addresses reporting and investigation of incidents

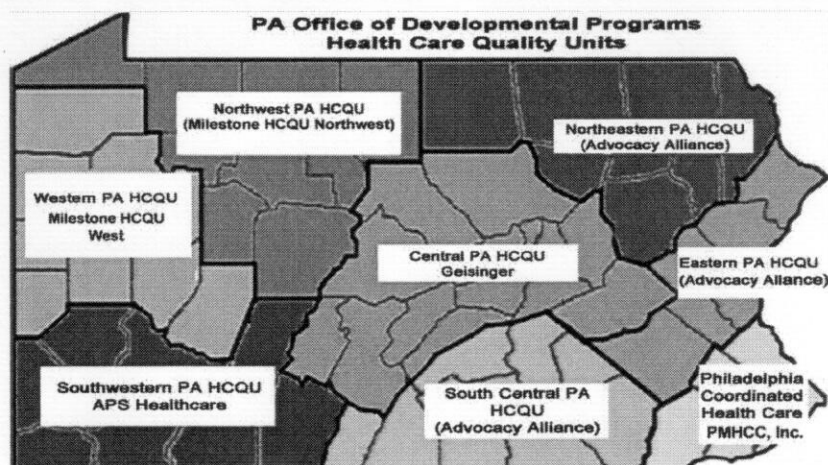
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Additional Information and Technical Assistance



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