“Crapper”

- Sir Thomas Crapper (1836-1910)
  - Sanitary Pioneer, Innovator, Inventor (9 patents)
  - Inventor: First bath/toilet/sink showroom (1966)
  - Improver & Promoter “Water Waste Preventer”
  - NOT the “Inventor of the flush toilet”
  - Improved it’s function
  - 1917: American Servicemen -London WW1

“Crapper”

- 1592 Sir John Harington (Bath, Somerset)
  - “Ajax”: Seat, bowel, cistern of water
- 1730s: new mechanical flushing loos
- 1778: Joseph Bramah -1st practical WC* patent
- 1852: George Jennings –flush-out toilet patent
  *WC=water closet

Constipation: “¡Oh Poop!”

Continuum of Care Training
Kathy Burke, M.D.
Lourdes Vazcara, M.D.

September 25, 2015
Introductions:

Presenters:
- Kathy Burke, M.D.
  - Family Medicine Physician
  - Medical Consultant
- Lourdes Vizcarra, M.D.
  - Family Medicine Physician
  - Medical Consultant

Audience:

Disclosures

None

DD Nurses - Pop Quiz:

What are “The Fatal Four” major medical conditions associated with IDD at greater rate and severity than in the general population?

A. Seizures, Dehydration, GERD, Pneumonia
B. Dehydration, Aspiration, GERD, Diarrhea
C. Aspiration, Dehydration, Constipation, Seizures
D. Diarrhea, Dehydration, Aspiration, Seizures
"The Fatal Four"^2
- Aspiration
- Dehydration
- Constipation
- Seizures

Challenging/complex:
- Multiple chronic conditions
- Atypical presentations: nontraditional, subtle
- Communication challenges
- Unpredictability

Objectives:
- Overview:
  - Constipation – definition
  - Symptoms of Constipation
  - Evacuation Facilitators
  - What do disabilities, chronic disease bring to the table?
  - Additional factors
    - Complications
  - Fecal Microbiota Transplant (FMT)

Objectives cont.:
- Management:
  - Diagnostic:
    - History, Physical Exam, Studies
  - Treatment:
    - First “Do no harm”: Fluids, Foods, Fiber, Physical activities
    - Bowel training
    - Medications
    - Natural remedies
    - Physical Intervention
    - PREVENTION!
WebMD: Quiz
"The Scoop on Poop"

Q1: Your poop should always be an S-shape:
- True
- False

Healthy stool -> all sorts of shapes:
curvy, sausage, snake-like, etc.
Appearance depends on amount of fiber and water, as well as how fast things move along through colon.
See doctor if: stool looks thin and narrow like a pencil for several weeks. This can be a sign of a GI (gastrointestinal) problem.

Q2: If you don’t poop every day, dangerous toxins can build up in your body:
- True
- False
WebMD: Quiz
“The Scoop on Poop”

Q2: If you don’t poop every day, dangerous toxins can build up in your body: **FALSE**

- Widespread Myth: obsession with regularity -- over-relying on laxatives or using risky colonic machines.
- Colon is pretty good at fighting bacteria. After all, its job is to get rid of toxins.

Q3: What makes stool float?

- Gas
- Fatty foods
- Both

Food that's digested in the lower intestine creates excess gas: hydrogen or methane. Makes stool less dense and more likely to float.

Floaters: pretty common & generally nothing to worry about.

See doctor if: >2 weeks duration
    May have trouble absorbing nutrients because of celiac disease or another GI problem.
WebMD: Quiz
"The Scoop on Poop"

Q4: Brown-colored poop is a sign of good health?

- True
- False

Healthy stools: variety of colors, including yellow, tan, and green.

Most common causes of an unusual stool color are medications or foods:
- Tomatoes & fruit punch can turn stools -> red
- Spinach & leafy vegetables -> green
- Grape juice can darken -> black

Q5: How often does the average person pass gas?

- 3 to 4 times a day
- 14 times a day
- 50 times a day
WebMD: Quiz
“The Scoop on Poop”

Q5: How often does the average person pass gas? 14 times a day

- Majority: burp or fart about 14 times a day
- Gassiness is typically caused by air that gets swallowed while eating or drinking or undigested carbs in the digestive tract

Human Anatomy: Intestines

- Small Intestine: (small bowel)
  - 20’ long, 1” diameter
  - Absorb most - nutrients, water
- Large Intestine: (large bowel or colon)
  - 5’, 3” diameter
  - Absorbs water from wastes - create stool

Overview: Constipation

- One of the most common digestive complaints in US
- Great variation from person to person
- More common: women, people over age 65
- Increased incidence:
  - During pregnancy
  - After birth
  - After surgery
  - Certain medications (opioids)
  - Some medical conditions
- Chronic:
  - At least 3 days/month for more than 3 months
WebMD: Quiz
“The Scoop on Poop”

Q6: How long does it usually take for something you ate to come out in your poop?

- 12 hours
- 1 to 3 days
- 1 week

Usually ~day before a meal starts showing up in the toilet
Can take up to 3 days before -> fully digested
Diarrhea: food rushes through much faster
- Body may not be able to absorb much fluid or many nutrients
- Ongoing diarrhea: at risk of dehydration and malnutrition

Toilet Paper: Over vs Under?
Overview: Definition

Symptom -> not a disease
- Infrequent (≤ 3 per week)
- Hard to pass
- Sensation: incomplete evacuation
- Severe: obstipation, impaction
- Incidence: 2 – 30% general population

Overview: Constipation Def.

cont’d Rome III Criteria

- The last 3 months with symptom onset at least 6 months prior to diagnosis:
  must include 2/more of the following
  - Straining: ≥ 25% of defecations
  - Lumpy/hard stools: ≥ 25% of defecations
  - Sensation of incomplete evacuation: ≥ 25%
  - Sensation of anorectal obstruction: ≥ 25%
  - Need for manual maneuvers to facilitate: ≥ 25%
  - < 3 BMs per week
  - Insufficient criteria for IBS

Overview: Signs of Constipation

- Fever
- Anorexia
- Vomiting
- Abdominal bloating, rigidity
- Decreased bowel sounds
- Seizures
- Decreased level of consciousness
- Behavioral outbursts
  etc.
Overview: Symptoms of Constipation

- Refusal to eat
- Irritable, aggressive behaviors, outbursts
- Fever
- Vomiting
- Abdominal bloating/rigidity
- New/on-going UTIs
- Seizures

Bristol Stool Chart

Overview: Evacuation Facilitators

- Fiber: dietary or as supplements
- Fluids
- Coordinated Propulsive Muscle Activity:
  - Includes control of the rectal muscles that facilitate voluntary defecation

Most expensive toilet in the world?

- Solid Gold Throne:
  - Hang Fung jewelers
  - Hall of Gold, Hong Kong
  - Closed 2008
  - 24K solid gold
  - One ton (32,000 ounces)
  - $32 million
Overview: What do disabilities, chronic disease bring to the table?

- Challenges & Complexity!

Musculoskeletal:
- Hypotonia (Down, Prader-Willi, CP)
- Uncoordinated muscle control
- Poor balance for toilet sitting
- Contractures
- Muscular Dystrophy (MD)

Gastro Intestinal (GI):
- Limited muscle function of the bowel and abdominal muscles
- Poor rectal sphincter control
- Poor sensation of fullness in rectum
- Feeding Issues
- Risk of aspiration
- Dysphagia
- Inadequate fluid intake

Neuromuscular degenerative disorders
- Spasticity, Paralysis, Weakness
- Lack of physical activity:
  - Poor ambulation or immobility
- Poly-Pharmacy
- Pica
  - 1,440 items found stomach
  - Glore Psychiatric Museum, Missouri
- Prior history of constipation
Overview: Additional Factors

- Medications:
  - Pain medications (Opioids)
  - Antidepressants
  - Antihistamines
  - Antispasmodics
  - Anticonvulsants
  - Antipsychotics
  - Antacids: containing Aluminum, Calcium
  - Iron supplements

Overview: Additional Factors cont’d

- Psychological:
  - Voluntary withholding
    - Fear of pain, fear of public restrooms etc.
  - Repression of the urge to defecate

Overview: Additional Factors cont’d

- Positioning: (easily correctable for many)
  - Footstool high enough to bring knees slightly up
  - Lean back a little bit (straighten spine)
  - Tighten and loosen stomach muscles
    - Try “looking thinner”, then release 😊
Overview: Complications of Chronic Constipation

- Affects:
  - Quality of life
  - Behaviors
- Medication Toxicities (meds not voided in urine)
- Impaction:
  - Intestinal ruptures
  - Deaths (severe impactions)

WebMD: Quiz “The Scoop on Poop”

Q7: Streaks of blood on your stool or toilet paper are most likely caused by:

- Hemorrhoids
- Cancer
- IBS

Hemorrhoids
- Swollen blood vessels: rectum/around anus
- Often bleed w/ straining to push out a BM.
- Can be caused by tiny tears in the lining of the anus called fissures
- Both usually resolve on their own
- Always get rectal bleeding -- minor or not -- checked out by doctor
- Wiping too hard - try a lighter touch/softer TP
Overview: Complications cont’d

- Fecal incontinence:
  - Overflow incontinence caused by fresh fecal matter bypassing the inspissated obstructing bolus
  - May confuse the diagnosis of chronic constipation unless a rectal examination is performed
  - Odds ratio for developing fecal incontinence with chronic constipation is 1.7

- Hemorrhoids:
  - Prolonged straining and increase of intra-abdominal pressure raises the venous pressure in the plexus and arteriovenous anastomoses of the anorectal junction
  - Relative risk for development of hemorrhoids with constipation is up to 4.1

- Anal fissure:
  - Trauma and sudden tear of the anal mucosa during evacuation of hard stool is usually an initiating event, but spasm of the internal anal sphincter leading to relative ischemia is thought to be the perpetuating factor
  - It is estimated that anal fissure is 5 times more likely to develop with chronic constipation

- Organ prolapse:
  - Chronic constipation is a known risk for prolapse of pelvic organs such as the uterus, rectum, urinary bladder, and vagina and their recurrence
  - Odds ratio for having rectal prolapse = 2.3

WebMD: Quiz
“The Scoop on Poop”

Q8: Always get tarry, black stool checked out by a doctor.

- True
- False
Q8: Always get tarry, black stool checked out by a doctor. True
- Can be a sign of bleeding or an injury in the stomach or parts of the intestine. The blood isn't red anymore because it's partially digested
- Always get this checked out by a doctor
- Keep in mind - can be a sign of less interesting things, like eating beets or taking some medications

Overview: Complications cont’d
- Fecal impaction and bowel obstruction:
  - Prolonged stasis of fecal matter leads to impaction and giant fecolith obstructing the large bowel, necessitating surgery
  - Retrospective analysis revealed a 5- to 6-times increased risk of fecal impaction resulting from chronic constipation
- Bowel perforation and stercoral peritonitis:
  - Extremely impacted feces (fecaloma) can compress the colonic wall, causing an ischemic ulcer and subsequent perforation, culminating in stercoral peritonitis and sometimes death.
  - Not a common condition
  - < 90 cases have been reported in the medical literature from 1894 to 2006

Q9: Doctors can transplant stool from one person to another to help with unhealthy bowels.
- True
- False
WebMD: Quiz
“The Scoop on Poop”

Q9: Doctors can transplant stool from one person to another to help with unhealthy bowels. **True**

- Donated stool is injected into a person’s colon
- More than 90% of the time, healthy bacteria from the donor stool start to grow in the patient’s colon
- These good bacteria get rid of an overgrowth of bad bacteria called *Clostridium difficile* or C. diff.

Intro: FMT

- **Fecal Microbiota Transplant (FMT)**
- **Procedure:**
  - Fecal matter (stool) collected from tested donor, mixed with saline/other solution, strained
  - Placed in patient - colonoscopy, endoscopy, sigmoidoscopy or enema
- **Purpose:**
  - Replace good bacteria (killed/suppressed)

Intro: FMT cont’d

- **Fecal Microbiota Transplant (FMT)**
- *Clostridium difficile* (“C. diff”)
- Colitis: debilitating, sometimes fatal diarrhea
- Promising results in:
  - Irritable Bowel Syndrome (IBS)
  - Crohn’s Disease
  - Ulcerative Colitis (UC)
Management: Outline

- Diagnostic:
  - History
  - Physical Exam
  - Studies

- Treatment:
  - Bowel Training
  - Intake/Hydration
  - Lifestyle changes
  - Medications
  - Natural Remedies
  - Physical Intervention
  - PREVENTION!

"Give him this laxative and run like hell."

Bathroom Break

**OUR AIM IS TO KEEP THIS BATHROOM CLEAN**

**GENTLEMEN**
Your aim will help to keep it clean. It’s shorter than you think.

**LADIES**
Please remain seated for the entire procedure.

Management: Outline

- Diagnostic:
  - History
  - Physical Exam
  - Studies

- Treatment:
  - Bowel Training
  - Intake/Hydration
  - Lifestyle changes
  - Medications
  - Natural Remedies
  - Physical Intervention
  - PREVENTION!

'It's cured'
Management: Diagnostic

- **History:** See Nursing Manual (Oregon.gov)
  - Description of symptoms
  - Dietary Habits
  - List of Medications

- **Physical Exam:**
  - Palpation of abdomen: "scybala", fecoliths
  - Rectal exam: manual, anoscopy
    - Sphincter tone
    - Presence of feces/consistency of feces
    - Hemorrhoids/Blood
    - Tumors/Polyps

Management: Diagnostic cont’d

- **Studies:** 
  - Investigations include
    - **Blood tests:**
      - Such as complete blood count, serum glucose, and thyroid and renal functions maybe useful despite limited evidence
    - **Colon transit time:**
      - Radiograph study with the Sitz marker has been a standard test in distinguishing prolonged transit from normal transit but is unreliable in measuring segmental transit
      - Scintigraphy with radioisotope is more accurate in measuring transit in different segments of the colon but is more expensive and limited to centers with access to radioisotopes

Management: Diagnostic cont’d

- **Studies:** 
  - Investigations cont’d
    - **Anorectal manometry:**
      - Pressure exerted by the anal sphincter at rest (normal >80 mm Hg) and with defecatory attempt (normal >180 mm Hg) is measured with a balloon catheter in the anal canal
    - **Balloon expulsion test:**
      - Patient is asked to expel a 50 mL rectal balloon (filled with air or water) within 60 seconds; failure to do so suggests pelvic floor dysfunction
Management: Diagnostic cont’d

- Studies:
  - Investigations cont’d
  - 5. Defecography:
    - Serial radiographs of the anorectum are taken when the patient is asked to expel thick barium paste from the rectum.
  - Movement of the pelvic floor and anorectal angle is measured with reference to the sacro-coccygeal line.

- 6. Dynamic pelvic MRI:
  - Gives better visualization of the pelvic floor dynamics than does conventional barium defecography.
  - Also reveals other anatomic defects contributing to impaired defecation.

Management: Treatment

- Bowel Training
  - Scheduled toilet breaks:
    - Once early in the morning.
    - 30 - 60 minutes after meals (gastrocolic reflex).

Management: Treatment cont’d

- Intake/Hydration
  - Fluids:
    - 64 ounces/day
  - Limit intake: caffeine.
  - Fiber: (see next slide)

Give water first then fiber in water.

***Fluid intake needs to be sufficient if dietary fiber is increased***
Management: Treatment cont’d

Intake/Hydration cont’d

Fiber:

- Male:
  - 9-13yrs: 31 grams
  - 14-50yrs: 38 grams
  - 50-70yrs: 30 grams
- Female:
  - 9-18yrs: 26 grams
  - 19-50yrs: 25 grams
  - 50-70yrs: 21 grams

WebMD: Quiz
“The Scoop on Poop”

Q10: As long as you eat a healthy diet, your poop shouldn’t smell bad.

- True
- False

WebMD: Quiz
“The Scoop on Poop”

- Of course, poop should be stinky! FALSE
- Contains all sorts of nasty things: undigested foods (similar to rotten vegetables), gas, bacteria, water, and salts.
- Most of the bacteria in there are good - they help digestion. But viruses and some harmful bacteria also can be passed in stool. The bad smell naturally -> warning to stay away
Management: Treatment cont’d

Lifestyle Changes

Physical activity:
- 20-30 minutes at least 3-4 days/week
- Special Olympics
- Swimming

Do NOT ignore the urge to have a BM!

Reduce stress

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WebMD: Quiz “The Scoop on Poop”

Q11: A BM can make you giddy:

○ True
○ False

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WebMD: Quiz “The Scoop on Poop”

Q11: A BM can make you giddy: TRUE

- Ever feel energized or elated after a BM?
- Passing a large stool can stimulate the vagus nerve in the brain
- That triggers a drop in heart rate and blood pressure.
- This whole bathroom event can cause you to feel a tad lightheaded and giddy
Q12: Do prunes really help constipation? **Yes**

Like many high-fiber fruits and vegetables, prunes (which are really dried plums) encourage regular bowel movements.

Prunes are also high in sorbitol, a natural sugar that acts as a laxative.

Studies suggest that prunes may help more with constipation than using fiber supplements.

Management: Treatment cont’d

- **Dietary Changes:**
  - **Foods:** (see handout)
    - Whole grains, bran, raw fruits/veggies, fiber-rich drinks
    - Prune, apricot or papaya juice w pulp or dried prunes, apricots
    - Minimize apples, bananas – increases constipation
  - **Eliminate:**
    - Wheat, orange, eggs, coffee, tea, chocolate, dairy especially milk, beet, corn, cane sugar, mushrooms, peas
    - Then reintroduce one food at a time, one every few days, and observe effects
  - **Increase:**
    - Root and green vegetables, whole and/or in juices
Management: Treatment cont’d

Dietary Changes:
- Fiber:
  - Increase intake by 3-5 grams/day to prevent discomfort
  - Think fiber cookies, muffins, snack bars
  - Remember bran
  - Psyllium: 1 rounded TBSP in glass of water or diluted juice; 2nd glass
  - Ground flaxseed meal (start low, go slow)
- Fluids:
  - ~64 ounces/day
  - Depending on weather, heat, activity level

Management: Treatment cont’d

Laxatives: there are several types
- Fiber supplements: (Bulk-forming agents)
  - Generally considered the safest of laxatives –> First line
  - Examples: FiberCon, Metamucil, Konsyl, Serutan and Citrucel
  - These agents must be taken with plenty of water
- Stool softeners:
  - Moisten the stool and help prevent dehydration
  - Examples include Colace and Surfak

Management: Treatment cont’d

Laxatives cont’d:
- Osmolics:
  - Retain water & enhance stool passage - colon
  - Examples include Cephulac, Sorbitol and Miralax
- Lubricants:
  - Enable stool to move through your colon more easily
  - Examples include mineral oil and Fleet
Management: Treatment cont’d

Laxatives cont’d:
- Stimulants:
  - Cause rhythmic contractions in the intestines
  - Examples include Correctol, Dulcolax and Senokot

- Saline laxatives:
  - Act like a sponge to draw water into the colon for easier passage of stool
  - Examples include milk of magnesia and Haley’s M-O

Other Medications:
*If lifestyle changes & over-the-counter medications don’t improve symptoms, doctor may recommend prescription medications, such as:
- Chloride channel activators:
  - Lubiprostone (Amitiza) is available by prescription and increases fluid content of stool

- 5-HT-4 agonists:
  - Stimulate release of compounds that increase fluid secretion in the intestines and decrease colonic transit time
  - Prucalopride is one such 5-HT-4 agonist
  - Not available in the U.S. -some concerns about the safety of their use

Other
- Probiotics: (Bacteriotherapy)
  - Lactobacillus acidophilus
  - Bifidobacteria
  - Yogurt with live culture, Kefir
- Biofeedback
  - good with pelvic floor dysfunction (PFD)
- Acupressure
  - to decrease stress; studies not impressive for constipation
- Magnesium
  - especially if on calcium; start with 1:1 ratio
Pluto Water

- Strongly laxative natural water
- Early 20th century
- Mineral salts: “within 1 hour”
- Sodium, MgSulfate, Lithium salts
- 1971: Lithium became Controlled Substance
- “America’s Laxative”
- “When Nature Won’t, PLUTO Will”
- Image of devil
- Pluto=Roman god of the underworld

Management: Treatment cont’d

- Other cont’d
  - A3309
  - accelerates colonic transit and loosens stool consistency in functional constipation patients
  - Abdominal massage
  - study 2011
  - Traditional Chinese Medicine, (Hemp seed pill)
  - quality of studies?

- Management: Treatment Natural Remedies
  - Barberry
  - Bladderwrack
  - Basil
  - Buckthorn
  - Cayenne
  - Cardamom
  - Dandelion
  - Fenugreek
  - Goldenseal
  - He shou wu
  - Honey
  - Milk thistle
  - Red raspberry
  - Slippery elm
  - Triphala
Cascarets Candy Cathartic

- First medicine to be marked nationally as candy
- Cascara: buckthorn bark (North America)
- 1877; as candy 1894
- "Pleasant taste – almost as pleasant as chocolate"
- Increased intestinal motility and lead to propulsive contractions
- Replaced Castor Oil

Management: Treatment
Natural Remedies

- Stress relievers: (for team and client!)
  - Chamomile as tea
  - Valerian as tea
  - Gotu kola as tea
  - Lavendar as aroma therapy
  - Acupuncture
  - Therapeutic touch

Management: Treatment cont’d

- Physical Intervention
  - Manual disimpaction
  - Surgery?
Management: Treatment cont’d

- PREVENTION!
- Read Journal of American Board of Family Medicine: Chronic Constipation: An Evidence-Based Review
- We don’t know what we think we know!
- Daily Bowel Charts
- Amount, description, discomfort

Conclusion:

- PREVENTION!
- Early recognition of signs and symptoms
- Daily bowel charting

Questions?
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Natural Medicines Comprehensive Database