Intestinal problems are common in older adults and have a significant impact on quality of life. There is an increase with age in self-reported constipation and laxative use among institutionalized and community-dwelling, as well as frail, older adults (Ginsberg, Phillips, Wallace, & Josephson, 2007). Prevalence rates range from 15% to 20% in older adults living in the community and up to 75% among elderly nursing home residents (Bosshard, Dreher, Schnegg, & Büla, 2004). Initiating constipation management for those at risk for constipation can alleviate suffering and promote the ability to lead a fuller life (Spinzi, 2007).

This article is a summary of the evidence-based practice guideline Management of Constipation (McKay, Fravel, & Scanlon, 2009), available for purchase from The University of Iowa Hartford Center of Geriatric Nursing Excellence at http://www.nursing.uiowa.edu/excellence/evidence-based-practice-guidelines. The purpose of the guideline is to reduce the frequency and severity of constipation among older adults. The goal is to maintain bowel frequency within normal limits for each individual. This will vary with the individual’s perception. Regular bowel movements are commonly defined in the literature as at least two to three times weekly with straining at stool less than 25% of the time (Arce, Ermocilla, & Costa, 2002; Hsieh, 2005; Morley, 2007). The guideline is applicable to older adults who are hospitalized, residing in long-term care or skilled care facilities, or living in the community.

The guideline is not intended for individuals who are internally fed, paraplegic, or quadriplegic.

DEFINITION OF CONSTIPATION
Constipation is a reduction in the frequency of stool or difficulty in formation or passage of stool. At an International Congress of Gastroenterology in Rome, a working group of experts recommended operational definitions, named the “Rome Criteria,” for chronic constipation in adults as two or more of the following for at least 12 weeks in the preceding 12 months (Arce et al., 2002; Corazziari, 2004; Folden et al., 2002; Garrigues et al., 2004; Morley, 2007):
- Straining with defecation more than 25% of the time.
- Lumpy or hard stools more than 25% of the time.
- Sensation of incomplete emptying more than 25% of the time.
- Manual maneuvers used to facilitate emptying in more than 25% of defecations (e.g., digital evacuation or support of the pelvic floor).
- Fewer than three bowel movements per week.

INDIVIDUALS AT RISK FOR CONSTIPATION
Numerous factors place older adults at risk for constipation. Examples include age older than 65 (Crane & Talley, 2007; Higgins & Johanson, 2004; Panchal, Müller-Schwefe, & Wurzelmann, 2007), limited physical activity (Bosshard et al., 2004; Tariq, 2007), inadequate diet (Eberhardie, 2003; Norton & Chelvanayagam, 2000; Talley, 2004; Tariq, 2007), and history of chronic constipation (Eberhardie, 2003; Folden et al., 2002; Norton & Chelvanayagam, 2000; Tariq, 2007). In addition, particular drugs and comorbidities are known to be associated with an increased risk of constipation (Tables 1 and 2). If an individual is at risk for constipation, an assessment needs to be made to determine whether symp-
toms of constipation are present, and if they are, the interventions described in Management of Constipation (McKay et al., 2009) can be implemented.

**ASSESSMENT**

It is important to determine whether constipation is actually present before initiating interventions, so the first step in managing constipation is to identify and assess older adults at high risk for constipation (Eberhardie, 2003). Untreated constipation may lead to fecal impaction and bowel obstruction (Arce et al., 2002).

Recall of bowel frequency has been found to be unreliable when establishing the presence of constipation. Therefore, the documentation of bowel movement frequency by using a bowel diary has been shown to be more accurate in determining the presence of constipation (Eberhardie, 2003; Folden et al., 2002; Norton & Chelvanayagam, 2000). Sample questions include: “How many minutes did you sit on the bedpan or toilet before you had your bowel movement?”, “How much did you have to strain before you had your bowel movement?”, and “Do you think you are constipated? (If you think you are constipated, why do you think so)?” In addition to getting an accurate assessment of stool consistency, a 7-point visual scale may be helpful (Norton & Chelvanayagam, 2000).

If the presence of constipation is established, the individual should have a physical assessment. Physical assessment should begin with observation, auscultation, percussion, and palpation. Bowel sounds are assessed to assure active motility and transit to rule out bowel obstruction. The presence and/or absence of bowel sounds should be auscultated, most often heard in the right lower quadrant. If bowel sounds are not present, the primary care provider (PCP) should be contacted to rule out bowel obstruction.

<table>
<thead>
<tr>
<th><strong>TABLE 1</strong></th>
<th><strong>DRUGS THAT MAY INDUCE CONSTIPATION</strong></th>
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<tbody>
<tr>
<td><strong>Class</strong></td>
<td><strong>Agent</strong></td>
</tr>
<tr>
<td>Analgesic</td>
<td>Nonsteroidal anti-inflammatory agents</td>
</tr>
<tr>
<td>Antacid</td>
<td>Bismuth subsalicylate (Pepto-Bismol®)</td>
</tr>
<tr>
<td>Calcium and aluminum compounds</td>
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</tr>
<tr>
<td>Anticholinergic</td>
<td>Benztropine (Cogentin®)</td>
</tr>
<tr>
<td>Anticonvulsant</td>
<td>Carbamazepine (Equetro® and others)</td>
</tr>
<tr>
<td>Antidepressant</td>
<td>Monoamine-oxidase inhibitors</td>
</tr>
<tr>
<td>Tricyclic: amitriptyline</td>
<td></td>
</tr>
<tr>
<td>Antihistamine</td>
<td>Diphenhydramine (Benadryl® and others)</td>
</tr>
<tr>
<td>Antimotility</td>
<td>Diphenoxylate (Lomotil®)</td>
</tr>
<tr>
<td>Loperamide (Imodium®)</td>
<td></td>
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<tr>
<td>Antimuscarinic</td>
<td>Oxybutynin ( Ditropan®)</td>
</tr>
<tr>
<td>Tolteradine (Detrol)</td>
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<tr>
<td>Benzodiazepine</td>
<td>Alprazolam (Xanax®)</td>
</tr>
<tr>
<td>Calcium-channel blocker</td>
<td>Verapamil (Calan® and others)</td>
</tr>
<tr>
<td>Diuretic</td>
<td>Thiazide type</td>
</tr>
<tr>
<td>Ganglionic blocker</td>
<td>Trimethaphan camsylate (Afronad®)</td>
</tr>
<tr>
<td>Lipid lowering</td>
<td>Cholestyramine (Prevalite®)</td>
</tr>
<tr>
<td>Pravastatin (Pravachol®)</td>
<td></td>
</tr>
<tr>
<td>Simvastatin (Zocor®)</td>
<td></td>
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<tr>
<td>Muscle relaxant</td>
<td>Cyclobenzaprine (Flexeril®)</td>
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<tr>
<td>Metaxolone (Skelaxin®)</td>
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<tr>
<td>Opiate</td>
<td>Codeine</td>
</tr>
<tr>
<td>Morphine</td>
<td></td>
</tr>
<tr>
<td>Parkinsonism agents</td>
<td>Carbamazepine (Equetro® and others)</td>
</tr>
<tr>
<td>Levodopa (Dopar®)</td>
<td></td>
</tr>
<tr>
<td>Psychotherapeutic</td>
<td>Phenothiazines</td>
</tr>
<tr>
<td>Sedative-hypnotic</td>
<td>Phenobarbital (Luminal®)</td>
</tr>
<tr>
<td>Zolpidem (Ambien®)</td>
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</tr>
<tr>
<td>Other</td>
<td>Barium sulfate</td>
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<tr>
<td>Iron</td>
<td></td>
</tr>
<tr>
<td>Memantine (Namenda®)</td>
<td></td>
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<tr>
<td>Phenelzine (Nardil®)</td>
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<tr>
<td>Sucralfate (Carafate®)</td>
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<tr>
<td>Vinca alkaloids (Oncovin®)</td>
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</table>

*Note. Adapted from Hsieh (2005) and Krinsky (2011).*
before further intervention. The abdomen should be palpated for abdominal masses, rigidity, distension, and tenderness, and the PCP should be contacted if any of these abnormalities are present (Eberhardtie, 2003; Folden et al., 2002; Seidel, Ball, Dains, & Benedict, 2002; Tariq, 2007).

If the above abnormalities are ruled out and the presence of constipation is established, the individual should be assessed for rectal impaction by digital examination, following institutional policy (Eberhardtie, 2003). If stool is present, disimpaction or other interventions may be warranted (Norton & Chelvanayagam, 2000).

**INTERVENTIONS TO MANAGE CONSTIPATION**

**Prevention**

Initial management of constipation (i.e., prevention) is recommended through a combination of fluid intake, diet, physical activity, and toileting regimen after identifying an individual at risk for constipation (Folden et al., 2002; Hsieh, 2005; Tariq, 2007).

**Fluid Intake.** Older adults may consume insufficient amounts of fluid that can predispose them to constipation. Fluid intake of at least 1.5 liters per day is recommended to avoid constipation (Folden et al., 2002; Hsieh, 2005; Mentes & Kang, 2011; Tariq, 2007). Fluid can come from all beverages, including water, juice, coffee, tea, and carbonated drinks; however, caffeinated fluids do not make a significant difference in hydration (Institute of Medicine, 2005).

**Diet.** A high-fiber diet has been found to increase bowel frequency and to be effective in treatment of constipation. As fiber passes through the colon, it acts as a sponge by absorbing water. This results in bulkier and softer stools. Waste then moves through the body more quickly, allowing easier and more regular bowel movements (Folden et al., 2002; Hsieh, 2005; Tariq, 2007). A diet high in fiber is not recommended for individuals who are immobile or who do not consume at least 1,500 mL of fluids per day (Ginsberg et al., 2007). Recommendations for dietary fiber intake vary from 20 to 35 grams daily, when fluid intake is at least 1,500 mL per day (Hsieh, 2005; Tariq, 2007). One study showed that the use of the high-fiber recipe called “Pajala Porridge” was well tolerated, well liked, and reduced the need for laxative agents (Wisten & Messner, 2005).

**Physical Activity.** Poor mobility may be associated with constipation (Hsieh, 2005; Tariq, 2007; Tuteja, Talley, Joos, Woehl, & Hickam, 2005). Physical activity has been shown to improve quality of life but, at best, is controversial as to its effect on gastrointestinal transit time (Chin A Paw, van Poppel, & van Mechelen, 2006; Schnelle & Leung, 2004; Tuteja et al., 2005).

Activity recommendations must be tailored to the individual’s physical abilities and health condition. Walking 15 to 20 minutes once or
twice per day, or more as tolerated, is recommended for those who are fully mobile. Ambulating at least 50 feet twice per day is recommended for individuals with limited mobility. For individuals who are unable to walk or are restricted to bed rest, chair or bed exercises such as pelvic tilt, low trunk rotation, and single leg lifts are recommended. The exercises should be performed for 15 to 20 minutes at least twice per day (Chin A Paw et al., 2006; Tariq, 2007; Tutteja et al., 2005).

Toileting Regimen. Ignoring or suppressing the urge to defecate contributes to constipation. Establishing a routine toileting pattern has been found to be beneficial in management of constipation. Toileting is recommended 5 to 15 minutes after meals, especially after breakfast when the gastrocolic reflex is strongest, and as needed. Getting the individual into an upright position for toileting, such as to the bathroom or the commode, facilitates bowel evacuation (Folden et al., 2002).

Pharmacological Therapy
Pharmacological therapy is indicated if symptoms of constipation persist despite lifestyle modifications (Johnson, 2006). The pharmacological agents used to treat constipation can be classified into the following categories: bulk-forming laxatives, emollients, lubricants, osmotic laxatives, stimulants, and chloride-channel stimulators.

Bulk-Forming Laxatives. Bulk-forming laxatives are often used as first-line agents due to a low incidence of serious adverse effects and low cost. Common side effects include abdominal distention and flatulence. It is important to take these products with plenty of water to avoid obstruction in the esophagus, stomach, and intestine (Krinsky, 2011).

Emollients and Lubricants. Emollient laxatives, such as docusate sodium (Colace®), work to increase moisture content of fecal mass and are therefore often referred to as “stool softeners.” These medications have not demonstrated efficacy in the treatment of acute constipation. Instead, they are used primarily to prevent constipation in specific situations, such as during recovery from surgery when straining during a bowel movement may be harmful. Overall, these agents are relatively safe; however, they may promote intestinal absorption of other potentially harmful drugs (Krinsky, 2011).

Use of mineral oil should be avoided due to risk of serious side effects. One concern is the development of lipid pneumonia, which may occur with aspiration of mineral oil. Another adverse effect associated with long-term use of mineral oil is reduced absorption of fat-soluble vitamins (Tariq, 2007).

Osmotic Laxatives. Osmotic laxatives cause water retention in the colon. This leads to increased pressure, which induces intestinal motility. Each osmotic laxative poses a different risk based on the specific type of product. Saline osmotic laxatives, such as magnesium hydroxide (milk of magnesia) or sodium phosphate (OsmoPrep®), may lead to hypermagnesemia or hyperphosphatemia in those with renal insufficiency. Other osmotic laxatives, such as lactulose (Cephulac® and others) and sorbitol, may cause diarrhea, abdominal cramping, and gas. Newer osmotic laxatives, such as polyethylene glycol (PEG, Miralax®) 3350 powder, have been associated with less gas and bloating (Johnson, 2006).

Studies have assessed the efficacy of PEG 3350 in chronic constipation, and in general, researchers have concluded that PEG 3350 is safe and efficacious when used in constipation for up to 6 months (Corazziari et al., 2000; Dipalma, Cleveland, McGowan, & Herrera, 2007; Johnson, 2006).

Opioid-Induced Constipation
Opioid-induced constipation is a very common and problematic issue for many people and requires special attention due to the need for specific pharmacotherapeutic management. One of the most common laxative regimens recommended for
individuals with opioid-induced constipation is a stool softener plus a stimulant laxative (e.g., docusate plus senna). Older adults who do not respond to this combination may instead use an osmotic agent or lubricant. Bulk-forming laxatives should be avoided in these patients due to the risk of exacerbating constipation and causing bowel obstruction (Panchal et al., 2007).

The selective mu receptor antagonists methylnaltrexone (Relistor®) and alvimopan (Entereg®) possess a mechanism of action specific for reversal of opioid-induced constipation. These medications antagonize peripheral mu opioid receptors (i.e., gastrointestinal tract receptors). Due to their pharmacology, the two agents do not cross the blood-brain barrier, which allows the analgesic effect of opioid agents to be maintained. Although mechanistically ideal for treatment of opioid-induced gastrointestinal adverse effects, the agents have been studied in selected patient populations with small numbers of patients and currently possess limited therapeutic indications (GlaxoSmithKline, 2008; Salix Pharmaceuticals, Inc., 2012).

**EVALUATING PREVENTION AND MANAGEMENT OF CONSTIPATION**

**Patient Outcomes**

Evaluating the use of interventions for older adults at risk for constipation as recommended in the guideline is important. The major outcomes that should be monitored over time are:

- Patient interview reveals that bowel function has improved.
- Patient identifies satisfaction with management of constipation program.
- Documentation reveals at least three spontaneous bowel movements per week, unless the normal bowel movements are weekly or twice weekly.
- Bowel function documentation reveals an increase in frequency of bowel movements and/or a decrease in frequency of straining at stool.

We recommend using the Bowel Function Diary (Figure) to document the success of the constipation management plan. The diary allows continued audits to determine adequacy of the outcomes based on the Management of Constipation guideline (McKay et al., 2009). The Bowel Function Diary can be adapted as appropriate for individuals at risk for or having constipation. There is also a Management of Constipation Outcomes Monitor in the full guideline that elicits specific information regarding constipation in older adults that should be used on at least a weekly basis. Examples of information to obtain are asking whether the person feels bowel function has improved and whether he or she is satisfied with the constipation management program. Also included is a bowel function flowsheet that shows an increase in frequency of bowel movements and/or a decrease in frequency of straining at stool.

**Process Factors**

In addition to patient outcomes, it is important to evaluate the effectiveness of using evidence-based interventions and guidelines. A Process Evaluation Monitor in the full guideline (McKay et al., 2009) can be used with a sample of the health care providers, such as nurses or physicians, approximately 1 month following use of the guideline. The purpose of the monitor is to determine understanding of the guideline and assess the support available for carrying it out. Another process factor that can be assessed is knowledge.
about constipation in older adults. The Management of Constipation Knowledge Assessment Test is available in the full guideline and should be used as part of the initial training session for use of the guideline. For example, the test may be used as a pre- and posttest to assess learning.

CONCLUSIONS AND IMPLICATIONS FOR GERONTOLOGICAL NURSING PRACTICE

This evidence-based practice guideline can be used in various settings to prevent and manage constipation in older adults. This guideline was a collaboration of an interdisciplinary team composed of a nurse practitioner, a pharmacist, and a dietitian, offering state-of-the-art information for health care professionals who provide care and services to older adults. Professional nurses are key players in assuring that older adults are assessed and treated for constipation in an evidence-based and person-centered manner, with an emphasis on well-being and quality of life. Nurses can begin by ensuring that all members of the health care team are properly educated about the criteria that characterize constipation, stressing that constipation is not an inevitable or normal part of aging. Health care providers also need to be taught how to assess for constipation and risk for constipation, using evidence-based assessment tools and phrasing questions in an understandable and sensitive manner when interviewing older adults. When assessing for risk factors, one must determine whether the factors are modifiable. If so, it is important for nurses and the health care team to work with patients to reduce those risks (e.g., ensuring adequate hydration, increasing dietary fiber, improving activity level, modifying use of medications prone to causing constipation). Finally, no interdisciplinary team is complete without the older adult at the center, so the patient is regularly asked for input about how the constipation management is going (e.g., Is it perceived as effective? Is the program easy to follow?). Doing so keeps the focus of a constipation management program on target, helping older adults attain and maintain overall comfort and well-being.

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