Constipation is defined as a decrease in bowel movement frequency or difficulty defecating for more than 2 weeks (Benninga, Voskuijl, & Taminiau, 2004). Encopresis is the repeated involuntary loss of stool by a child older than 4 years developmentally and is associated with functional constipation (without organic or anatomic cause) (Loening-Baucke, 1996). It is estimated that as much as 5%-10% of the pediatric population has constipation and/or encopresis and 95% of childhood constipation is functional (Youssef & Di Lorenzo, 2001). Despite rarely being associated with a pathological condition, constipation accounts for approximately 25% of referrals to our pediatric gastroenterology clinic whereas 5% of new patients are seen for encopresis. The purpose of this study was to assess constipation and encopresis treatment strategies of primary care providers and determine reasons to refer to a pediatric gastroenterology specialist.

**Methods**
A questionnaire was developed with the majority of questions being closed-ended and focusing specifically on treatment modalities. Reasons to refer to a gastroenterology specialist and the primary care provider’s estimated
percentage of success in managing constipation and encopresis were also included in the questionnaire. Clarity and appropriateness of the questionnaire were reviewed by a pediatric gastroenterologist. The final questionnaire had a total of 23 questions.

The study was granted exemption status by the Mary Bridge Children’s Hospital institutional review board. A convenience sampling of 237 pediatricians, advanced registered nurse practitioners, and physician assistants within Western Washington State were mailed the questionnaire. A letter explaining the purpose of the survey and a stamped return envelope were included. A follow-up mail was not sent to those who did not complete the survey.

Results

Ninety-one responses were returned from 237 mailed questionnaires with a 38% response rate. Of the responders, 74 (81%) were pediatricians and 17 (19%) were nurse practitioners. The majority of responders (71%) had practiced in pediatrics for more than 10 years and of these, 44% had more than 20 years’ experience. Seventy-three percent (n = 78) estimated a 75%-100% success rate when managing constipation, whereas 19% (n = 72) estimated a greater than 80% success rate with encopresis patients.

The majority of responders recommended pharmacologic treatment and diet changes (Table 1). The number one reason for referring a child with constipation or encopresis to a gastroenterology specialist was unresponsiveness to treatment (71%; n = 79), followed by parents want a second opinion (15%), rule out organic cause (9%), and management is too time-consuming (5%).

Discussion

The study findings revealed that primary care providers use medication to treat constipation as recommended in the North American Society of Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) clinical guideline; however, there is a disparity in diet management (NASPGHAN, 2006a, 2006b). The guideline proposes a well-balanced diet whereas the majority of providers who were surveyed instruct families to increase fiber, eliminate constipating foods, and reduce dairy from their children’s diet.

When treating constipation, studies show conflicting data on the benefit of fiber supplementation. A time-limited trial of cow’s milk removal from the diet is recommended only if the child is unresponsive to standard medical and behavioral therapies (NASPGHAN, 2006a, 2006b). Furthermore, diet modifications can be especially difficult to follow if the child is already a selective eater and there is no proof that diet reduces functional constipation when there is stool withholding and retention (Loening-Baucke, 2002).

Most of the providers had a wealth of pediatric clinical experience. It can be assumed that their treatment strategies are based not only on current recommendations but also on trial and error. Focht, Baker, Heubim, and Moyer (2006) discovered that most pediatricians are unaware of the NASPGHAN guideline although they use a wide selection of treatment strategies, including a variety of medications and education, as recommended in the guideline.

In contrast to this study’s findings, Borowitz et al. (2005) reported that 87% of children seen with constipation in their study were prescribed medication by their primary care providers, about 50% were recommended dietary changes, approximately 33% were instructed to use a type of behavioral intervention, 45% were disimpacted followed by daily medications, 35% were prescribed daily medications without disimpaction, 5% were provided diet interventions only, 9% were prescribed intermittent laxatives only, and 7% were given no treatment. Fishman, Rappaport, Schonwald, and Nurko (2003) found medications and regular sitting times to be the most common encopresis management strategies used by providers. Eighteen to 23% of patients, however, reported that a specialty referral was made without first receiving encopresis treatment.

### TABLE 1. Constipation and Encopresis Management Strategies of Primary Care Providers

<table>
<thead>
<tr>
<th>Treatment Recommendations</th>
<th>Enemas/Suppositories (n = 77)</th>
<th>Dairy Elimination (n = 80)</th>
<th>Dairy Reduction (n = 80)</th>
<th>Constipating Food Elimination (n = 84)</th>
<th>High Fiber (n = 88)</th>
<th>Daily Medications (n = 88)</th>
</tr>
</thead>
<tbody>
<tr>
<td># with “Yes” answer</td>
<td>53</td>
<td>32</td>
<td>57</td>
<td>74</td>
<td>88</td>
<td>87</td>
</tr>
<tr>
<td>% “Yes”</td>
<td>69%</td>
<td>40%</td>
<td>71%</td>
<td>88%</td>
<td>100%</td>
<td>99%</td>
</tr>
<tr>
<td># with “No” answer</td>
<td>24</td>
<td>48</td>
<td>23</td>
<td>10</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>% “No”</td>
<td>31%</td>
<td>60%</td>
<td>29%</td>
<td>12%</td>
<td>0%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Copyright © 2010 Society of Gastroenterology Nurses and Associates. Unauthorized reproduction of this article is prohibited.
This study identified that the most likely reason for referral to be the child is unresponsive to treatment. The majority of providers, however, reported a high success rate when managing constipation but not encopresis. Encopresis referrals have not changed over a 20-year period, but children are now being referred at an earlier age (Fishman et al. 2003). Borowitz et al. (2005) found that primary care providers underrate childhood constipation although greater than 80% of providers believed that they were successful. Their data suggest that successful treatment occurs only about 60% of the time and when constipation includes the symptom of painful defecation, success occurs less than half the time. Early and aggressive treatment, including some type of disimpaction and daily medications, results in better constipation management.

The second most common reason for referral was that parents wanted another opinion. It is not known why the parents made such a request, but it is likely that their child’s constipation or encopresis was not improving. This may be due to a number of reasons including noncompliance, a lack of understanding the treatment plan and condition by the parents, and inadequate medication dosage. Farrell, Holmes, Coldicutt, and Peak (2003) found that healthcare providers can be perceived as insensitive and unconcerned when managing children with constipation. In turn, parents become less trustful of the healthcare provider. They may instead use expensive hospital services such as the emergency department when constipation could be best managed in a primary care setting.

To rule out an organic cause was the third most likely reason for referral, yet only 5%-10% of constipated children have an organic cause (Youssef & Di Lorenzo, 2001). Lastly, a few providers felt that the main reason to refer was that management was too time-consuming. Certainly, it can be a challenge to provide sufficient constipation and encopresis treatment, including education to children and their families, in a demanding primary care setting; however, it is an inappropriate use of healthcare dollars to refer to a specialist only because the primary care provider is too busy. As mentioned before, pediatric constipation is a financial burden on healthcare and is the second most referred condition to pediatric gastroenterologists, yet it is predominantly a functional condition. If more time is spent managing constipation and encopresis in the primary care setting, referral to a specialist may not be necessary.

Focht et al. (2006) identified similar reasons for referral. Their data found the three most common reasons for referral to be parental pressure, concern about missing another diagnosis, and failure of initial therapy.

According to the NASPGHAN clinical guideline, referral to a pediatric gastroenterology specialist is warranted for the following reasons: (1) therapy is unsuccessful, (2) there is concern of organic disease, or (3) management is complicated. Consultation by a specialist includes reevaluation of the constipation and previous management; ruling out organic causes; performing specialized tests such as an endoscopy to exclude celiac disease; providing counseling resources; and medication adjustments such as higher doses and different or supplementary medications.

It is recommended that the primary care provider consider laboratory tests to help exclude organic causes prior to referral. These include blood tests to assist in identifying hypothyroidism, hyperparathyroidism, celiac disease, and lead toxicity. Depending on the results, evaluation by a different specialist such as an endocrinologist would be appropriate (NASPGHAN, 2006a, 2006b).

Limitations
There are a number of limitations to this study, including the sample size and response rate; therefore, the findings are limited. Unfortunately, when mailed questionnaires are used, it is difficult to control the number of replies. Another limitation is that the survey tool included only general questions regarding treatment strategies. Specific inquiries such as names of medications, doses, and length of therapy were not included. Future research addressing detailed medication strategies and length of therapy would be beneficial especially because the number one reason for referral is unresponsiveness to treatment. Exploring topics related to family education, compliance, and methods primary care providers use to stay current on constipation and encopresis treatment may also help to explain why most children are referred because of treatment failure.

Conclusion
Constipation is a common condition in the primary care setting. The majority of constipation and encopresis cases are functional, yet children with these conditions are referred for further evaluation. This study revealed that primary care providers and pediatric gastroenterologists use medication treatment strategies but diet recommendations are not the same. The main reason for referral is unresponsiveness to treatment. If aggressive management with close follow-up can occur in the primary care setting at the onset of constipation and encopresis, costly specialty services may be avoided and possibly reduce healthcare costs.

REFERENCES
Borowitz, S. M., Cox, D. J., Kovatchev, B., Ritterband, L. M., Sheen, J., & Sutphen, J. (2005). Treatment of childhood constipation by...
Primary Care

