Let's Go Shopping: A Tool for Pediatric Resident Education

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ABBREVIATION. OTC, over-the-counter.

Residency training is designed to allow trainees to develop the clinical skills and the knowledge base necessary to practice their specialty independently. Most pediatric residency programs have been hospital-based, usually in tertiary care institutions. Even required primary care continuity experiences are often based within urban hospital clinics. As a result, pediatric residency graduates have good preparation to care for critically ill children or children with special needs, but may be less prepared to care for generally healthy children or to answer the practical questions that will comprise the bulk of a primary care pediatrician’s practice. In fact, many pediatric residents complete training without exposure to many of the practical aspects of primary care and community pediatrics.

It is difficult to teach residents many key aspects of community and ambulatory pediatrics effectively. Certain issues and skills require active, hands-on involvement. Participatory teaching formats have equal or more efficacy than traditional didactic lectures in many instances and are well-received by the learners. The participatory format particularly enhances practical skill and knowledge acquisition.

There are many practical aspects of primary care and community pediatrics that cannot be taught in a lecture and might be more appropriately taught through hands-on involvement. Many of these involve issues dealt with regularly by parents, such as administering unpleasant tasting medication. Physicians may be unaware that such an issue can create an obstacle for parents. Another issue for parents, especially new or inexperienced parents, relates to the purchase of items needed for routine care of healthy infants (such as car seats and formulas) or items to help with minor acute illness (such as thermometers and humidifiers). Parents who receive little guidance in item selection can find this a perplexing and frustrating experience. Families who are financially disadvantaged or who live in an underserved area may face the additional barriers of inadequate finances or lack of transportation to stores not readily accessible. Pediatricians, including pediatric residents, should understand the cost, accessibility, and convenience of use for items that they recommend to parents; however, unless they are themselves parents, many pediatricians lack this understanding. This type of practical information is rarely taught in a traditional residency curriculum.

We introduced a resident “shopping trip” to our ambulatory curriculum in the academic years 1996–1997 and 1997–1998. The purpose of the shopping trip was to provide residents with an experience simulating that of a new parent attempting to purchase items necessary for infant care. We initially assessed resident knowledge regarding the prices of commonly used child care items, such as diapers, infant formula, and commonly used over-the-counter (OTC) medications, via a written pretest asking residents to price items. Residents were then assigned to a focused shopping trip, either during the ambulatory rotation or the continuity clinic, looking for items such as routine and unusual infant formulas, car seats, OTC medications (generic and brand name items), and disposable diapers (see Table 1). Store locations were not specified, so residents generally chose stores convenient to their homes. Residents then took a posttest, both within 1 month of going on the shopping trip, and again at least 6 months after the shopping trip. Objective gains in knowledge regarding prices were assessed by asking residents to price the same items that were on the pretest. Residents were also asked to evaluate the experience.

Over a 24-month period, 59 pediatric residents completed all components of the study. Because the shopping trip was introduced into the intern curriculum, interns comprised the majority (79.7%) of the participating residents. Only 4 (6.8%) of the residents were parents at the time that they went on the shopping trip.

Residents demonstrated a 20.7% improvement in knowledge of the costs of the items after the shopping trips; after 6 months, there was some decrease of knowledge, but it was still 12.4% improved from baseline. Twenty-four percent of residents found that items were less accessible than expected, 82% found that the variety of choices offered made it difficult to choose, and 71% found that items were,

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in general, more expensive than they had anticipated. In particular, residents were impressed with the high cost of OTC medications. Almost three-quarters (74%) said that they are now more likely to give out medication samples to decrease the financial burden on parents. A total of 37% are more likely to recommend a prescription antifungal cream rather than recommend an OTC alternative, if the patient had a prescription plan via their health insurance. Anecdotally, several residents commented that this experience made them realize the importance of being sure that an OTC medicine would be effective before asking parents to spend money on it.

Most residents did not encounter any problems during the shopping trip. Problems encountered included: not enough time to complete assignment (2 residents), difficulty getting to the stores (1), and difficulty finding 1 or more items (35). Most residents in this last category could not find 24-calorie formula, despite going to multiple stores. It never occurred to them that this formula would not be easily available in supermarkets or pharmacies. Similarly, it may be difficult for parents to obtain other specialty formulas (such as elemental formulas) or pediatric formulations of medications that pediatricians have deemed necessary for the health of the child. Physician awareness of the availability of items is critical so as to avoid creating additional barriers for families. Pediatricians must also be cognizant of resources available to parents when they cannot buy necessary items, such as infant car seats, because of lack of finances, no transportation, or other difficulties.

Through this shopping trip, we learned the particularly valuable and relevant fact that no stores in the District of Columbia sell infant car seats. Many of our residents are now well-versed in using available resources to obtain loaner car seats for families.

Based on subjective comments and objective gains in short-term and long-term knowledge about costs, we feel that the shopping trip is a successful teaching tool. Although we have not interviewed patients to determine changes in resident behavior, subjective comments indicate that this experience changed many residents’ attitudes and practices in counseling parents. However, we realize that long-term knowledge of prices was less accurate than the

**TABLE 1. Items Included in Shopping Trip**

<table>
<thead>
<tr>
<th>Category</th>
<th>Items Priced*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulas</td>
<td>Similac with iron (ready to feed)</td>
</tr>
<tr>
<td></td>
<td>Prosobee concentrate</td>
</tr>
<tr>
<td></td>
<td>Powdered Gerber formula</td>
</tr>
<tr>
<td></td>
<td>Progestimil or Nutramigen or Alimentum (ready to feed)</td>
</tr>
<tr>
<td></td>
<td>Neocate</td>
</tr>
<tr>
<td></td>
<td>Any 24-calorie/oz premature formula</td>
</tr>
<tr>
<td>Disposable diapers (Pampers or Huggies)</td>
<td>For each size (newborn, 1, 2, 3, 4, 5), list the weight range, the number of diapers/package, and the price</td>
</tr>
<tr>
<td>Convertible car seats</td>
<td>Identify the 3 main styles of convertible seats and list one brand and model name, with price, for each style</td>
</tr>
<tr>
<td>Oral rehydration fluids</td>
<td>Pedialyte or Infalyte</td>
</tr>
<tr>
<td></td>
<td>Generic oral rehydration fluid</td>
</tr>
<tr>
<td></td>
<td>Oral rehydration popsicle/ice pop</td>
</tr>
<tr>
<td>OTC medications</td>
<td>Syrup of ipecac</td>
</tr>
<tr>
<td></td>
<td>Tylenol or Tempra elixir and chewable tabs (80 mg)</td>
</tr>
<tr>
<td></td>
<td>Generic acetaminophen infant drops</td>
</tr>
<tr>
<td></td>
<td>Children’s Motrin elixir</td>
</tr>
<tr>
<td></td>
<td>Hydrocortisone 1% cream</td>
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<tr>
<td></td>
<td>Diaper ointment with zinc oxide</td>
</tr>
<tr>
<td></td>
<td>Cough syrup with guifenesin</td>
</tr>
<tr>
<td></td>
<td>Chewable multivitamins with iron</td>
</tr>
<tr>
<td></td>
<td>Ferrous sulfate drops</td>
</tr>
<tr>
<td></td>
<td>Mylicon drops</td>
</tr>
<tr>
<td></td>
<td>Eucerin cream</td>
</tr>
<tr>
<td></td>
<td>Any antifungal cream appropriate for treatment of tinea corporis</td>
</tr>
</tbody>
</table>

* Residents documented the quantity in the container, price, and location of the store for each item.

**DISCUSSION**

Pediatric training should provide residents with the ability to care for both ill and well children. To provide excellent care, a pediatrician must be familiar with the resources available to patients in the community. This includes not only resources such as home health agencies and medical equipment agencies, but also the sources for purchasing items required for routine care, such as car seats and syrup of ipecac. Pediatricians often expect that parents have these items in the home. In addition, when a child becomes ill, pediatricians recommend that the parent take the child’s temperature, use a humidifier, buy oral rehydration fluids, or give the child an OTC medication. Although most pediatricians are increasingly sensitive to the cost of prescription medications, many, particularly those who are not parents, are inexperienced and unaware of the costs and availability of many of the “nonprescription” or “routine” items. Items that are commonly ordered in intensive care nurseries and pediatric wards may not be readily available to parents. For instance, 21 residents expressed frustration because they were unable to find 24-calorie formula, despite going to multiple stores. It never occurred to them that this formula would not be easily available in supermarkets or pharmacies. Similarly, it may be difficult for parents to obtain other specialty formulas (such as elemental formulas) or pediatric formulations of medications that pediatricians have deemed necessary for the health of the child. Physician awareness of the availability of items is critical so as to avoid creating additional barriers for families. Pediatricians must also be cognizant of resources available to parents when they cannot buy necessary items, such as infant car seats, because of lack of finances, no transportation, or other difficulties.

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short-term knowledge, suggesting that with time, the quantitative benefits begin to fade. A single intervention may not be adequate for maintenance of knowledge; periodic reinforcement over time may be required. This reinforcing may be done through approaches such as repeat shopping trip experiences, didactic formats, or the use of laminated cards with prices of commonly used items.

A focused shopping trip is effective in educating residents on the complexities and difficulties involved in buying child care items in particular and thinking in more practical terms when counseling parents in general. The shopping trip can be accomplished during a half-day session, and residents consider it to be a valuable experience that can impact on their attitudes and practice as primary care pediatricians.

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