

**Integration/Analysis of a Multifaceted Medication and Health Management Information  
System in a Community Setting (Grant #75)**

**Final Report  
to the  
Community Pharmacy Foundation**

**March 2012**

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## **Project summary**

This project explored the design, implementation and evaluation of web-based information services that provided drug information directly to the public. The project represented a partnership effort of West Virginia University and the University of Michigan colleges of pharmacy. This report discusses web site design issues, the creation of partnerships to promote web site use, web site use and factors influencing such use, the character of the questions submitted to the site and lessons learned.

This report provides an overview of information gained. Further analyses of specific data related to drug information requests and the population that used the service are underway.

## **Background**

It is important that patients receive appropriate lifestyle, health behavior, and medication counseling to reduce their health risks and optimize management of medical conditions. Self-efficacy is essential to this process. Patients must understand their medical conditions and drug therapy, help set treatment goals, and actively engage in self-monitoring and reporting practices. Pharmacists, especially those in community practices, are ideal health professionals to undertake a proactive counseling role due to their education, training and public accessibility.

Patients differ in their knowledge, health status, and practice of desirable health behaviors and lifestyles. As a result, effective programs and health systems should employ a variety of patient care services using different delivery modes. Two approaches can be used to offer services to broad-based populations across large geographical regions: 1) developing a network of providers that can collectively meet service demands, and 2) effectively use communications technology, particularly the Internet and telephone, to provide services. Both approaches have potential limitations, the former in ensuring uniform high quality care and documenting care processes and outcomes, and the latter in effectively reaching and providing information to meet an individual's personal needs in a private, secure manner. Offering a combination of these approaches may be optimal to ensure effective and efficient care delivery.

Much research involving the face-to-face delivery of pharmacist services exists. However, investigation of the effectiveness and patient/provider acceptability of telephone and Internet-based services is lacking. Little has been published about the use and marketing of communications technology for pharmacist delivered patient care services. While for-profit pharmacies and others offering Internet-based counseling services likely have internal data on the provision and profitability of these services, the results of such evaluations are not shared in the public domain. A non-profit, university-based evaluation of the implementation and use of these technologies was proposed, with the findings and tools developed from this project to be widely shared with pharmacists, health plans and others interested in supporting such services through the Community Pharmacy Foundation.

## **Project goal and objectives**

The overall goal of this project was to implement a web-based medication and health information service (web site) that united two online information services: For Your Health-Tailored Information for Patients (HTip) and an Ask a Pharmacist service that would provide consumers with medical and health information in response to their specific requests. These services were

offered via one web site named JustAskBlue.com. A second goal, implemented during the no-cost extension period of the grant, was to develop and evaluate a patient-driven model for educating patients in community pharmacies. This effort also expanded use of the project web site.

The objectives for the first part of the project were to:

1. Develop, pilot-test, and launch a web site that will allow easy access to two new services, each with a different focus:
  - a. HTip (For Your Health – Tailored Information for Patients). This service provides users with links (sent directly to them via e-mail) to selected high quality health and medication information web sites in response to their specific requests. HTip enables users to locate high quality web sites without the need for them to perform their own web searches and decide on their own whether or not the information found was trustworthy. Simply clicking on the links e-mailed to users allows them to access the requested information directly on their computer.
  - b. Ask Your Pharmacist - This service allows users to submit specific questions about their medications or any other health or medical condition to the JustAskBlue.com pharmacist investigators and receive individualized answers via e-mail.
2. Determine the best way(s) to inform consumers of the availability of these services
3. Track use of the project's web-based medication and health services
4. Determine users' satisfaction with the services provided

The objectives for the second part of the project (i.e., the no-cost extension period) were to:

1. Develop a simple, easy to complete form to allow patients to request medicine and health-related information from community pharmacists
2. Track the number of questions generated and use of the web site by patients in community pharmacists using the information request form

### **Web site development**

During the initial planning phase of this project a web site was developed that provided access to the HTip and Ask a Pharmacist services. A web designer consultant assisted with this process. West Virginia University (WVU) Center for Drug and Health Information already had designed the HTIP site with use of the site targeted to West Virginia residents. Previous research by Dr. Abate had examined the HTip use by patients and primary care physicians. The Ask a Pharmacist service was new to this project. Other Ask the Pharmacist sites offered by chain pharmacies, healthcare organizations and individuals were reviewed to select optimal features to include in this service.

### Selection of web site name

A key decision point was the selection of a web site name. Consideration was given to names that would describe the services offered and thus words such as medications, meds and information were considered. We also wanted a name that would be easily remembered when advertised and reflected that the site was a shared effort of WVU and the University of Michigan (U-M) colleges of pharmacy. In discussing names with the designer it was decided to choose an easy-to-remember name paired with a logo that would reflect the provision of medication information. The name JustAskBlue was chosen to incorporate the idea that information could be requested and “blue” reflected the school colors representing WVU and the U-M. Permission was sought and received for the exclusive name and web address of both JustAskBlue.com and JustAskBlue.org so that individuals would arrive at the site irrespective of the domain searched.

### Web site design and question response procedures

Given that HTip already resided on the WVU University Health Sciences Center’s server it was decided that JustAskBlue would be similarly located there. Planning the site required adding the Ask the Pharmacist pages as well as linking these with the existing HTip site. Mock-ups of web pages were produced by the investigators and reviewed with the web designer. Considerations in design included ease of use of the web pages, availability of needed links for navigating the system, and clarity of the information presented. Forms were also designed for question submission.

A collaborative of WVU and U-M faculty members was developed to respond to questions submitted to the web site. All had clinical and/or drug information experience with several providing specialty care (e.g., geriatrics, complementary medicine). A system was designed that notified all participating pharmacists of a inquiry for the Ask A Pharmacist service. This system provided flexibility in program contributions among the pharmacists and allowed questions requiring certain expertise to be addressed by pharmacists practicing in these specialty areas.

To create uniformity in the responses to questions, standard response templates for all inquiries received through JustAskBlue (for both HTip and Ask a Pharmacist) were developed. Standard formats were created for inquiry receipts, requests for additional patient information, and e-mail responses to all inquiries.

### **Promotion of web site use**

Promotion of web site use occurred through two initiatives. The first was creating web site features that encouraged repeat use and the second was developing partner relationships to promote site use.

### Web site features designed to promote use

Offering additional web site features beyond responses to questions was thought to encourage users to access the site as medication questions arose in their daily lives. They were also thought to encourage word-of-mouth advertising about the sites. The first feature was the addition of a monthly newsletter. This newsletter was posted to the site and e-mailed to individuals who subscribed to this service through the web site. The newsletters covered common health themes (e.g., hypertension, diabetes, drug interaction prevention) and encouraged the user to visit and

use the JustAskBlue web site. During the course of this study 21 newsletters were posted to the site. A joke of the month was also added to the site as a means to entertain users and encourage repeat visits.

Promotional materials were designed to create awareness about the site. Materials created included rack (display) cards and posters, Post-it notes, pens and magnets with the JustAskBlue logo and web address. A poster presentation for events was developed as well as a PowerPoint presentation that was used for talks with partner groups and consumers. These materials were used at presentations and health and social events and placed at partner locations. An additional concise single page form was created for use by patients in the participating community pharmacies when requesting information from their pharmacist.

### Partnerships for promotion of web site use

This project sought to promote the use of the web site through partnerships with specific organizations rather than advertising to the general public. This approach was taken for two reasons. First it was thought that a partnership approach would have a synergistic marketing effect. Having an employer, union, community organization or pharmacy co-promote the site would create credibility in the sight of potential users. In addition, reminders about the web site in partner publications and web sites would be additive reminders about the services. Second, linking web site use to particular partners versus the general public allowed a gradual adoption of the program thus providing opportunities for modifications as needed. It also gave the investigators some control over the time demand associated with responding to queries. As described below, several partnerships were explored with varying degrees of success.

Specific criteria were used when choosing partner organizations. They needed to be associated with frequent web site users, or have an incentive to seek medication information due to high medication use (e.g. seniors) or medication cost limitations due to prescription drug benefits. Potential partners were contacted by investigators and relationships developed if interest was expressed. Without the resources to do a formal market analysis, the degree to which organization met the criteria were based on investigator experiences, contacts, discussions with potential partners, and trial and error.

### Employers

This project was initially intended to complement an employer-based wellness program designed for a county government in Michigan. This employer had been involved in a previous pharmacist-provided service, the Medication Assessment Program, and had expressed interest in continued services. The proposal for an array of services, including the web-based service was discussed and approved by county administration. However, the plan met resistance at the county executive board level since it was felt that service provision was not aligned with current county health services and may create duplication of services. There was also a desire for services to be offered by professionals based within the county rather than from universities outside the region.

As an alternative to this employer, we proposed adding this project to an existing employee medication therapy management (MTM) program offered by the University of Michigan College of Pharmacy. While initial interest was expressed, additional discussions determined that the university would prefer a web-based program that was wholly operated using its own resources.

## Unions

The search for an appropriate program partner continued in early 2009 with a review of potential employers based in Morgantown, WV and Ann Arbor, MI. Investigators approached an Ann Arbor-based union, U.A. Local 190 - Plumbers, Pipefitters, Service Technicians and Gas Distribution Workers. The union has approximately 1,500 members in the Ann Arbor area and northern Ohio, and is affiliated with the International United Association. Its members include both active and retired workers and their prescription benefits were capped at a certain level, thus potentially motivating members to seek information on ways to lower medication costs. Skill-based training was offered through on-line courses, which suggested that the members were likely Internet users. When approached, U.A. Local 190 expressed interest in the project. A presentation to the Union's officers was well received, with program approval obtained by their Board of Trustees in February 2009.

The program was launched in June 2009 at a kick-off picnic event for UA Local 190 members that was well attended by active and retired members in the area. Throughout the next year, JustAskBlue.com, was marketed to the members in a variety of ways, including presentations at monthly Union meetings and at a large social dinner event for Union members. A link to JustAskBlue was posted on the Union's web site and notices about the service were included with paychecks. Rack cards, brochures and posters about the JustAskBlue.com service were prominent in the Union office. Raffle prizes such as local restaurant coupons were offered as incentives to submit questions to the web site.

Members did use the services, however, service use was less than expected. It was thought that since most union members were male, wives may be the ideal audience for the web site but reaching spouses was difficult since they rarely were involved in union activities. Realizing that the investigators had the capacity to respond to a higher degree of web site queries, it was decided to pursue additional ways to increase JustAskBlue use while continuing to work with UA Local 190. Thus, we explored adding another union group to the project, the Michigan Laborers' Health Care Fund (MLHCF). While a proposal was sent to the Fund, sufficient interest was not present to actively pursue a partnership.

## Public libraries

Since public libraries often serve as informational sources for their communities and promote use of Internet resources through the availability of computers, two libraries were contacted to promote JustAskBlue.com to their constituents. Both libraries responded positively. The Rochester Hills Public Library in Michigan posted a link to JustAskBlue on its health page for use by library patrons and their librarians. The Wheeling, WV public library provided promotional JustAskBlue materials to its library staff. Few questions, however, were generated from library users.

## Retiree groups

Seniors commonly use multiple medications and thus have a vested interest in gaining information about medications. Therefore, two investigators gave a JustAskBlue presentation, which included a hands-on demonstration to a group of seniors residing in a retirement housing complex in Morgantown (WV). This presentation did generate a number of inquiries to the site.

## Pharmacists

Discussions with project-affiliated clinical pharmacists indicated that they would value use of a JustAskBlue.com service for assistance with their MTM interventions. They spent significant time researching complex patient questions and would welcome a drug information source that would save them time by researching patient questions for them. Thus the investigator team decided to explore whether pharmacists would use the site to support their patient counseling and drug therapy management efforts.

Two groups of pharmacists were approached: members of the Michigan Pharmacists Association and members of the Oakland County Pharmacists Association (OCPA). Messages were sent to their members containing the following information along with program contact information. Several follow-up notices were sent to OCPA members. An example message is presented below.

*“Free Web-based Medication Information Service Available to Michigan Pharmacists  
posted: 03/24/2010*

The University of Michigan College of Pharmacy is now offering a free web-based medication information service in partnership with the West Virginia University Center for Drug and Health Information. The Web site, [www.justaskblue.com](http://www.justaskblue.com), assists pharmacists in answering patient questions by researching specific medication information. The site also offers links to other professional resources that provide medical or health information”

In response to these notices, several pharmacists did send inquires to the JustAskBlue, with some still continuing to use this service.

Use of the web site to support a program that encouraged community pharmacy patient counseling was also piloted. Under the Omnibus Budget Reconciliation Act of 1990 (OBRA '90), pharmacists are legally obligated to offer counseling to patients for dispensed prescriptions. Patients have a right to decline pharmacist counseling. However, patients are often asked to simply sign a form indicating they have received the opportunity for counseling. It can be difficult for patients to make an informed decision about whether they wish to be “counseled” without knowing what this counseling could entail. Proactive, patient-driven ways to provide patient education and counseling in community pharmacies are needed. One possible approach is to ask patients to simply indicate the types of information they wish to receive when they present a prescription to the pharmacy. The approach also needs to fit within the community pharmacists’ work environment and time constraints. Using a paper request form that included e-mail as an option for providing information to patients, as well as asking an established information provider (West Virginia Center for Drug and Health Information) to render any needed assistance to community pharmacists in responding to requests, was felt to have potential advantages for both patients (more privacy, less wait time in pharmacy) and pharmacists (better time management for needed responsibilities, ability to provide more information to patients).

Thus, project work during the no cost extension period focused on the development and testing of a simple form to be used by patients for requesting information and to also provide patients with JustAskBlue contact information. Patients coming to the pharmacy to receive a prescription were to be given the request form and asked to indicate information they wished to receive. The pharmacist or a pharmacy student who was completing an experiential rotation at the four

participating community pharmacies (two chain pharmacy sites and two independent pharmacies) had two options for answering the patient's information request: they could provide the information themselves using resources available in the pharmacy, or they could fax the completed form to the West Virginia Center for Drug and Health Information (WV CDHI). In this case, the WV CDHI staff would locate the requested information and either forward it directly to the patient via e-mail or to the pharmacist/pharmacy student who would then provide it to the patient.

Commitments to participate in this project were received from the community pharmacies. Forms were developed, pilot-tested, and distributed to the pharmacies. Form use was implemented in the pharmacies over a six-month period from March to August 2011. Pharmacy students were only available to participate in this project from June to August at three of the community pharmacies. Investigators visited each at least twice to check on project status and drop-off/retrieve forms and called periodically all four participating community pharmacies.

All forms received (completed and not completed) and questions received through JustAskBlue.com and from the community pharmacies were collated.

### **Materials and tools developed**

A number of different materials (attached) were prepared through this project that may be particularly useful for sharing with the Community Pharmacy Foundation community.

1. Rack cards (JustAskBlue information) for HTip and Ask a Pharmacist that were distributed at the sites involved in this project
2. Newsletters (called *News Capsules*) – 12 representative issues are provided; all 21 can be accessed by going to [www.JustAskBlue.com](http://www.JustAskBlue.com) and clicking on Archived News Capsules
3. Copies of the online forms patients completed to request information through Ask a Pharmacist and HTip
4. Response templates (to ensure consistency of response formatting) used for answering Ask a Pharmacist and HTip requests
5. Representative examples questions answered through JustAskBlue
6. Fax response template used by WV CDHI for preparing answers to questions sent by the participating community pharmacies
7. Copy of JustAskBlue logo
8. Overview of JustAskBlue project prepared for talk to seniors
9. The Know Your Medicines form used by patients in the community pharmacies to request information



## Project results

### Use of the JustAskBlue web site generated through partnerships

Data regarding web site use was gathered through the use of Constant Contact, a commercial service that supports the marketing of web sites. This service provided weekly reports of page loads, unique visits, first time visits and returning visits.

The JustAskBlue web site was visited frequently during the project, with the following use statistics:

**Table 1. JustAskBlue web site use**

Year	Number of visits (page loads)	Number of first time visits
2009*	146	63
2010	1,663	752
2011*	990	319
<b>Total</b>	<b>2,799</b>	<b>1,134</b>

\*Not complete years since project started July, 2009 and ended August, 2011

The use statistics reflected all JustAskBlue.com visits including accessing the *News Capsules* newsletters, information queries, or simple viewing of web pages. Quarterly review of utilization data showed the visits increased from 63 first time visitors in fourth quarter 2009 to the highest number of first time visitors occurring in the first and second quarters of 2010 (204 and 254 visitors, respectively). Use of the site continues through today with 34 first time visits occurring in first quarter 2012.

The number of repeat use visits varied over the course of the project with the number of return visits increasing from 8 in fourth quarter 2009 to 27 in first quarter 2011 and then declining to 9 in first quarter 2012. Both first time and repeat web site use declined after August 2011 when site features such as the newsletter were not updated with the end of the project. It should be noted that web site views did not always generate queries. Thus individuals appeared to be viewing the web site for interest purposes only or to read the newsletters.

A total of 63 questions/information requests were received through JustAskBlue.com and answered by the project investigators, often working with pharmacy students (see Table 2). Having students work on addressing information requests under the guidance and review of the project investigators provided an excellent educational experience for the students. Of the 63 questions, 16 were HTip requests and 47 were Ask a Pharmacist questions. Examples of several of the questions and answers received are attached. All questions and information requests were answered using a variety of literature resources, including Medline searches when needed. As can be seen from reviewing several of the questions seen, the answers were very thorough and complete. As a follow-up to this project, the investigators plan to perform more detailed analyses of the questions received along with a description of our work undertaken to submit for publication.

### User satisfaction

User satisfaction surveys were included on the JustAskBlue.com site with surveys being specific to the Htip or Ask A Pharmacist service. Individuals who made inquiries to the web site were encouraged to complete these surveys when they received answers to their inquiries. Reminder e-mails were also sent to users.

Eight users completed the feedback surveys, 6 for Ask a Pharmacist and two for Htip. In addition, 7 users responded directly to the e-mail address established for replying to the JustAskBlue requests. The librarian at the Rochester Hills Public Library e-mailed one of the project investigators with feedback as well (see response #8 listed below), giving a total of 16 users who provided feedback. The low response rate is not unexpected given that, in order to complete the online survey, users would most likely have needed to first read through the information provided to them (e.g., HTip the users would need to visit the web sites provided and read that information) and then return to JustAskBlue.com to respond to the survey.

When asked if they would use Ask a Pharmacist or HTip again, all 8 of the survey respondents said they would. Half of the 8 said they were “likely” to “highly likely” to make health-related changes because of the information received. All respondents found the information provided to be “mostly” to “completely helpful”. When asked how much of the information they received was easy to understand, all 8 individuals answered “All.” When asked the extent to which the information provided increased their knowledge, 7 of the 8 responded “moderately” to “greatly,” with the remaining individual responding “slightly.” The eight feedback notes received from users via e-mail are shown below and were all positive as well.

“Thank You for this information below. Incidentally, I have seen an ENT who operated on my nasal and sinus issues: three procedures in one operation. Nevertheless, the tinnitus was unaffected. Sometimes and recently Vitamin B has worked for extended periods of time during each day. I will try B-12 specifically. The ENT thinks it’s an allergy but my family could not afford the \$\$\$\$co-pay for the allergy testing.”

“Thank-you for your response. I read it to my dad and we both thank-you for this information-it was very helpful. I work in a library and am looking forward to adding [www.justaskblue.com](http://www.justaskblue.com) to our web site.”

“Thanks. I appreciate your information. It helped confirmed my research. It's wonderful having another "partner" helping care for our patients.”

“Thanks, This info is exactly what I was looking for. I had started doing the research initially because I remembered something about beta blockers and body temperature. I'm glad I didn't make it up! I appreciate that you gave me the layperson guides, so the patient will be able to comprehend. “

“Hi, Thank you so much for your answer and taking the time to research this. It was very helpful.”

“Good answer and a better answer than my question was.”

“Thank you!”

“I personally have asked a couple questions of JustAskBlue and found one of the responses to be very good-quite detailed. The other question I asked was answered equally well with referrals to related web sites, which was appropriate for my question. The response time to my questions was related to the difficulty of the question and I appreciated that the pharmacist sent out an initial response that explained he was working on the question.”

### Results from community pharmacist use to promote patient counseling

Although four community pharmacies agreed to participate in this phase of the project, only one of these (an independent pharmacy) was able to provide the forms to patients on a fairly regular basis. The other three pharmacies (two chain and one independent) only infrequently and inconsistently provided the forms to patients, with the chain pharmacies involved the least. Even with the actively involved independent pharmacy, use of the forms diminished over time with the primary reason being a lack of time to distribute and collect the forms. All four of these pharmacies are very busy stores (1500+ prescriptions a week) and generally had only one pharmacist on duty at a time. There were a total of five rotation students assigned to complete a 5-week rotation block at any of the participating pharmacies during the project period. The two independent pharmacies each had two rotation students, and one student completed a rotation at one of the chain pharmacies. Although these students provided project assistance, particularly in the independent pharmacies, they were limited in the extra time they could devote to this project due to the need to assist with the normal duties and responsibilities of the pharmacy.

It was impossible to obtain an accurate count of exactly how many Know Your Medicines forms were distributed to patients. Although pharmacists were asked to retain any forms given to a patient (whether completed or not), they usually delegated this task to other pharmacy staff that generally did not do so. Also, we noticed early in the project that some patients did complete the entire form. Thus, we redesigned the form midway through the period and used the new form for the remaining time. Despite these limitations, a total of 90 completed information request forms were obtained from the pharmacies (Table 2). Of these 90 information requests, 70 were answered in person in the pharmacy and 20 were faxed to the WV CDHI for assistance in providing the information. Of the 90 requests, a total of 75 (83%) were from the two independent pharmacies, with only 17% coming from the combined two chain locations. Overall, 56 (62%) were generated from the one actively participating independent pharmacy, with 19 (21%) generated from the other independent pharmacy.

**Table 2. Information requests answered**

JustAskBlue web site		Community Pharmacies		Total project requests
Ask a pharmacist # requests	HTip # requests	At pharmacy # requests	WV CDHI # requests	
47	16	70	20	153

Feedback received from all the pharmacists indicated that the major obstacle to use of the forms was lack of time. Particularly during busy periods in the pharmacy, all pharmacists indicated they simply were unable to work with the forms. Handing out the forms was delegated largely to technicians or other staff out front who were also very busy, and the pharmacists did not follow-

up about the status of the forms. Feedback received from the two pharmacists at the independent pharmacy that used the forms the most found that only about half the patients coming into the pharmacy for a prescription or refill were told about the form; they felt that patients were mostly to very satisfied with the information they received in response to inquiries, however. There were about 50 total forms received from the four pharmacies on which patients simply stated that they did not have any questions, or that other printed leaflets, etc. already provided by the pharmacist answered their questions.

Review of the 20 questions faxed to the WV CDHI for assistance indicated that they were more complex than those answered by the pharmacists on site and were similar to the types of requests received through JustAskBlue.com. Further analysis of the data generated from this work will provide a more detailed analysis of the types of requests asked through the forms with the goal to publish the findings.

### **Lessons learned**

The launch and continuation of the web site emphasized the challenges, time and persistence required when developing new pharmacist services. Several key lessons were learned from this effort as discussed below.

The demographics of the targeted recipients of a planned service should be considered and a comprehensive needs assessment of these individuals conducted before the services are developed and offered. This is necessary to ensure an appropriate match between the likely use of and need for the services. Our experience found that union members, who used web-based certification programs for training, were found to be low Internet users for personal matters. In addition, the incentive to use the site to lower medications costs did not gain traction among members. Union administrative support for this aspect of the service may not have been strong since emphasizing the limitation of the pharmacy benefit did not reflect well on union benefits provided.

Comprehensive marketing efforts using a variety of methods, with frequent follow-up contacts being a critical component, are needed to ensure the success of a planned new service. Web site use tended to peak after direct interactions with partner groups. Therefore, to ensure continued growth in web site use, continued personal face-to-face contact with potential users is required. Site features need to be regularly updated and outreach via services such as Constant Contact need to be maximized. Marketing through other communication channels are likely to be needed to promote web-based services.

Methods used to enhance the ability of community pharmacists to provide health-related information to patients must blend as seamlessly as possible into normal daily pharmacy activities. The pharmacies identified to work with this project were typical of those in many community settings. There was a mix of independent and chain stores, each of which filled a substantial number of prescriptions and which generally had only one pharmacist on duty at any given time. While the forms appeared to have value as an option through which patients can obtain medicine and health-related information, further research is needed to determine how they could best be integrated within the normal daily activities in a community pharmacy. The two pharmacists who used the forms the most in this project felt the forms could have a moderate role (3 on a scale of 1 to 5) as a tool for helping patients obtain needed information. Pharmacy students were at the participating pharmacy sites for only limited time periods and could not be

relied upon to carry much of the project load due to the variety of other tasks they also needed to complete.

There are several possible reasons why more patients did not request information using the form developed, including:

- patients did not have, or did not want to take, the time to complete the form in the pharmacy (one pharmacist at the independent pharmacy that used the forms the most felt this was the major reason)
- patients did not use e-mail (the other pharmacist at the independent pharmacy that used the forms the most felt this was the major reason since they had many elderly patients who did not use computers)
- patients were concerned about a lack of privacy with either writing down their questions or in receiving the answers via e-mail
- patients often asked, and perhaps preferred to ask, questions by phone or face-to-face
- patients did not have any questions or did not wish to receive any additional information
- patients were uncomfortable with or had difficulty understanding or completing the written form
- patients did not feel that pharmacists could provide them with information about medical conditions

Interestingly with regard to the last possible reason, two of the investigators recently published a study in which 229 patrons in a community pharmacy were asked their opinions about who (pharmacists and/or doctors) should provide various medication/health related services and whether pharmacists possessed the knowledge and skills needed to perform these services. Interestingly, pharmacists and patients statistically significantly disagreed on the health care professional who should be responsible for answering patients' questions about their medical conditions, helping patients to better manage their medical conditions, and advising patients about healthy living and preventing disease. For all four items, the majority of pharmacists (64.7% to 88.2%) felt that both pharmacists and physicians should be responsible for these roles, while most patients (55.9% to 73.5%) attributed these responsibilities to physicians only. A sizable proportion of patients were either unsure or did not feel that pharmacists have the skills to answer patients' questions about their medical conditions (51.9%) and provide advice on healthy living and disease prevention (41.5%). If many patients truly feel that pharmacists lack the skills to perform these services or physicians should be the only health practitioners providing them, the pharmacy profession needs to do more to educate the public about the pharmacists' patient care responsibilities, education, and training.

## **Conclusion**

Further detailed analyses of all questions/information inquiries received during this project are planned. Categorizing of inquiries by query type has already begun, and it is planned to publish our findings when analyses are completed. This project was successful in developing processes to offer web-based drug information services. It provided useful information regarding web site design features and marketing efforts required for offering such services. It also illustrated the need for flexibility and project restructuring as new information is learned about the use of web site services. The JustAskBlue site remains operational as an online resource for the general public.

