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# Service, Education, and Advocacy within a Student-Run Pharmacy: An Evaluation of the Butler University Community Outreach Pharmacy

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**Service, Education, and Advocacy within a Student-Run Pharmacy:  
An Evaluation of the Butler University Community Outreach Pharmacy**

A Thesis

Presented to the College of Pharmacy and Health Sciences

and

the Honors Program

of

Butler University

In Partial Fulfillment

of the Requirements for Graduation Honors

Eliza Anne Dy

PharmD Candidate, Butler University

Founding Committee Chair, Butler University Community Outreach Pharmacy

April 23, 2011

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## STATEMENT OF CONTRIBUTIONS

This thesis project was conducted in partnership with Tyler D. Trueg, PharmD Candidate, MBA Candidate.<sup>a,b</sup> Work on this project was also completed under the mentorship of Kristal L. Williams, PharmD.<sup>c,d,e</sup> Outlined below are the specific contributions which I made to this study.

For the inception of this project, I designed the service and advocacy study portions of the project. I authored the corresponding service and advocacy survey and served as the editor of education survey. I also co-authored the study protocol and Institutional Review Board application.

In the implementation phase of the study, I served as a primary investigator and administered half of the surveys on the randomly selected data collection days.

For the final report of the study, I independently authored the Introduction, Hypothesis, Discussion, Conclusions, and Acknowledgments sections. I also co-authored the Abstract, Objectives, and Methods sections, and edited and reviewed Results and Tables sections.

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## **ABSTRACT**

### **Objective**

To investigate three domains of the student-run Butler University Community Outreach Pharmacy's (BUCOP) mission statement.

### **Methods**

This multi-phase, survey-based study evaluated the execution of BUCOP's mission statement in the areas of service, education, and advocacy.

### **Results**

The service survey found that the majority (~78%) of patients were satisfied with most aspects of BUCOP's care; however, patients were most displeased with hours of operation and wait time. The education survey results demonstrated BUCOP's role as an early confidence-building experience; however, noteworthy clinical interactions with medical students were limited. The advocacy survey revealed that 96% of community members interviewed were unaware of BUCOP; however, they reported comfort with students providing prescriptions and counseling.

### **Conclusion**

BUCOP is satisfactorily fulfilling its mission statement in terms of service and education, but improvements can be made to better impact patients and students. In the area of advocacy, particularly community awareness of BUCOP's free healthcare services, the mission is not being fulfilled.

## **INTRODUCTION**

### **History**

Within the Eastside Indianapolis, IN community, 50% of the population lives at or below poverty level.<sup>1</sup> For this particular community, like many others across the United States, access to affordable health care poses a major problem. In an attempt to assist such populations, federally funded health care systems were established as part of the War on Poverty.<sup>2</sup> In response to the War on Poverty initiative, Citizens Health Center became the first federally funded clinic in Indianapolis.<sup>2</sup> Additionally, for over 150 years, Wishard Health Services has provided care for underserved patients at its main hospital campus and at 8 additional satellite clinics throughout the city.<sup>3</sup> Further efforts to assist the Indianapolis underserved included the establishment of several free clinics, such as the Genneseret Free Clinic and Shepherd Community Center.

In 2010, President Obama signed the Patient Protection and Affordable Care Act and the Healthcare and Education Reconciliation Act of 2010 with a vision and goal to dramatically reform health care and to allow individuals to obtain affordable health care coverage over the next several years.<sup>4,5</sup> Additionally, in recent years, several student-run, free clinics have been established. Reportedly, there are 60 student-run free clinics in the United States; at the time this thesis was submitted, the Butler University Community Outreach Pharmacy (BUCOP), in conjunction with the Indiana University Student Outreach Clinic (IUSOC), was the only student-run free healthcare provider in the state of Indiana.<sup>6</sup>

On August 1<sup>st</sup>, 2009, BUCOP opened as a free, student-run pharmacy.<sup>7</sup> The services provided included, (1) free medications, (2) non-drug therapies, (3) medication counseling and (4) drug information, such as initial doses, indications, and monitoring parameters to student-physicians of

the partnering IUSOC. The IUSOC and BUCOP operate out of the Neighborhood Fellowship Church on Saturdays from 10:00 am – 2:00 pm.<sup>7</sup>

Furthermore, the service-learning and public health components of the student-run pharmacy reflect the academic public health and interdisciplinary education initiatives of the Accreditation Council for Pharmacy Education (ACPE). According to the 2011 ACPE Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree, a pre-advanced pharmacy practice experience core domain is Health and Wellness – Public Health.<sup>8</sup> It states that students should, “Know and apply principles of health and wellness in provision of individual and population-based health and wellness information” and “Integrate unique characteristics of individuals and populations in design of health and wellness information.”<sup>8</sup> Additionally, in accordance with the American Association of Colleges of Pharmacy (AACP) Center for Advancement of Pharmaceutical Education (CAPE) 2004 Educational Outcomes, the ACPE Accreditation Standards recommend that students fulfill their public health and other education experiences, such as experiential experiences “in cooperation with... other members of an interprofessional team of health care providers.”<sup>8</sup>

### **BUCOP Mission Statement**

**SERVICE:** To provide medically underserved and uninsured populations within Indianapolis with access to basic medication for acute disease states, information on non-drug therapies, and education on chronic disease prevention at no cost to the patient

**EDUCATION:** To provide pre-professional and professional COPHS students with the opportunity to expand clinical skills, explore aspects of clinic administration, build interdisciplinary skills with other Indiana professional students, and better understand community resources available to uninsured patients



UNDERSTANDING: To provide a setting in which medical research regarding social, cultural, and financial influences on the delivery of healthcare to underserved and uninsured populations can be conducted

ADVOCACY: To advocate for universal access to adequate and affordable healthcare and medications for the underserved and uninsured populations of Indianapolis

## **HYPOTHESIS**

BUCOP is fulfilling its mission by (1) providing pharmaceutical care through medications and counseling (*Service*), (2) educating students in a unique setting outside of the classroom (*Education*), and (3) providing an opportunity for service learning (*Education*); however, it is hypothesized that the mission of advocacy has yet to be fully explored and pursued within the local Indianapolis community (*Advocacy*).

Although not a direct measure of the project, it is additionally hypothesized that the successful completion of this project will stimulate future research on underserved health care providers such as BUCOP (thus fulfilling *Understanding*).

## **OBJECTIVES**

The goal of this study was to objectively evaluate three primary domains of the BUCOP mission statement in order to assess progress, expose weaknesses, and identify areas of improvement. The mission domains evaluated for quality improvement were service, education, and advocacy. The specific objectives for each domain are listed below.

**Service.** To evaluate the quality of service and pharmaceutical care products (defined as medication dispensing and medication counseling) rendered by BUCOP.

**Education.** To evaluate the effectiveness of the BUCOP training program and the benefit of this unique service-learning experience, specifically its value-added pharmaceutical care and management opportunities to the existing pharmacy curriculum.

**Advocacy.** To assess the barriers which exist in providing care to the surrounding community, such as amount of publicity and community perceptions of a student-run pharmacy.

## **METHODS**

This study was approved by the Indiana University Health Institutional Review Board in accordance with the principles outlined in the Declaration of Helsinki.<sup>9</sup> All subjects provided informed consent, which, given the design of the study, was implied with completion of the survey.

Unique surveys were created, by the investigators, for each of the three study domains. All data collection and survey participant recruitment were conducted by the primary investigators.

All surveys were conducted in adult individuals, which was defined as 18 years of age or older. At the time of the study invitation, participants were educated on the study design, purpose, time commitment, and voluntary nature of the study. Additionally, the investigators emphasized that there was no penalty for choosing to not participate and that at any time, study participants were allowed to withdraw from the study and/or choose to not fully complete the surveys. In all cases, except for the advocacy interview, participant-initiated withdrawal could occur without the knowledge of the investigator(s). Surveys were provided after the individual accepted the study invitation.

### **Service Survey Procedures**

Consenting, cognitively-competent, English-speaking patients or caregivers receiving prescriptions from BUCOP, on randomly selected clinic days, were invited to participate in this study. Patients

were recruited during their standard pharmacy wait time (i.e. while waiting for prescriptions to be filled). Patients reporting having already completed a service survey were not asked to complete another survey, and these individuals were not included in the “declined survey” data.

Patients volunteering to participate were given the 9-item, investigator-designed questionnaire (*Appendix A*) which asked patients to rate general aspects of the pharmacy such as hours of operation, wait time, and friendliness of student volunteers. Additionally, patients rated their confidence in students’ abilities to fill prescriptions, provide counseling, and provide prescription assistance information. Lastly, the survey asked patients about where they usually received health care, where they most often filled prescriptions, and how they heard about BUCOP. To avoid the threat of coercion, participants were instructed to submit the questionnaire into a folder labeled “Completed Service Surveys” upon completion. Once the patient completed the survey, as defined at the discretion of the patient, the study participation was complete.

### **Education Survey Procedures**

Consenting, professional-phase Butler University College of Pharmacy and Health Sciences (COPHS) pharmacy school students who volunteered for at least one entire clinic session (approximately 4 hours) at BUCOP on the randomly selected data collection days were invited to participate in this study. Student volunteers were recruited at the end of the business day for the clinic. If students volunteered more than once during the reporting period, they were allowed to complete another survey, if desired.

Student volunteers choosing to participate were given a 4-part, investigator-designed questionnaire (*Appendix B*). The questionnaire consisted of questions soliciting positive and negative feedback on the BUCOP volunteer training session. Additionally, student volunteers were asked to reflect on aspects of the volunteer session including: (1) interactions with the IUSOC medical staff, (2)

application of previous classroom material, and (3) comparison to other pharmacy work experiences. Furthermore, the survey contained a self-reflection section to identify 3 skills at which the student performed well and 3 skills on which the student could improve. Student-participants were instructed to submit the survey into a folder labeled “Completed Education Surveys” upon completion. Once the student volunteer completed the survey, per their discretion, their participation was technically complete; however, students could choose to volunteer to participate in a future BUCOP study continuation by completing the last page of the survey and placing it in a folder labeled “Future Study Participation.”

### **Advocacy Survey Procedures**

Consenting, Indianapolis community members presenting at one of the selected survey locations, on a randomly selected data collection day, were invited to participate in this study. Survey locations were within 5 miles of BUCOP and included surrounding neighborhoods, sidewalks, and shopping centers. Community members reporting having already completed an advocacy survey were not asked to complete another survey, and these individuals were not included in the “declined survey” data.

Community members choosing to participate were interviewed by one of the investigators. Investigators followed a pre-written script (*Appendix C*) to ensure consistent interviewing and to avoid coercion and/or leading questions. Community members were asked about prior knowledge or use of BUCOP services and where they usually receive health care and prescriptions. Additionally, they were asked what is most important to them when choosing to fill prescriptions, and if they would feel comfortable with students providing medications and counseling. Study participation concluded upon completion of the 7 questions or at any time, per participant’s request.

### **Statistical Analysis**

**Service.** The primary outcome was patient satisfaction with BUCOP services; the secondary outcome was patient confidence in BUCOP services. Descriptive statistics were used to report general questions relating to patient's means of health care and other information as requested in the survey. Patient satisfaction was measured using univariate analysis of a chi-square test of association, which provided a likelihood ratio, secondary to the low sample size.

It is important to note that some patients did not answer each question. Analysis of the data was performed based on the total number of responses per question, not the number of completed surveys. It is noted if a question did not have a 100% response rate.

**Education.** The primary outcome was perceived benefit of BUCOP to the student volunteer; the secondary outcome was impact on student volunteer confidence level as it relates to provision of pharmaceutical care and the ability to integrate with other medical staff (IUSOC). Descriptive statistics were used to evaluate the results from this survey.

**Advocacy.** The primary outcome was determination of public knowledge of BUCOP and its services; the secondary outcome was determination of community perceptions of a student-run pharmacy. Descriptive statistics were used to evaluate the results from this survey.

All data analysis was performed using SPSS 17.0 and Microsoft Excel 2007 Analysis Toolpak.

## **RESULTS**

### **Service Survey Results**

Fifty-three individuals were invited to participate in the study. One patient declined to participate in the survey, and four patients could not complete the survey due to not being able to speak English. Forty-eight (90.6%) individuals completed the survey and are included in the analysis. The service survey did not collect data on gender or age. For the purposes of this study, demographics are

defined in terms of health care and pharmacy usage, including BUCOP (*Table 1*). Approximately, half of patients surveyed responded they had never been to BUCOP prior to taking the survey.

Additionally, approximately 50% of the participants stated they learned of BUCOP from street advertisements. Each patient averaged two prescriptions per visit. Of all available major retail pharmacies, CVS/Pharmacy® was the most commonly used pharmacy for the surveyed patients.

The most commonly used health care institutions of BUCOP patients were federally-funded hospitals and ambulatory care centers. Approximately one-fourth of the patients report of having no physician; this was the second most common response.

A total of six patient survey questions evaluated satisfaction, specifically regarding overall experience, comparison to other pharmacies, and confidence in pharmacy students (*Table 2*).

Overall patients were satisfied with their experiences at BUCOP. Eighty percent of the patients rated the BUCOP services as “Very Good” or “Excellent” for three of the six questions assessing patient satisfaction. For the other three questions, at least 55% of the patients rated the services as “Very Good” or “Excellent”. The lowest scoring services were hours of operation and pharmacy wait time. Approximately 80% of the patients reported that their experiences at the BUCOP were comparable to their experiences at other pharmacies. Further analysis of responses from individuals rating their BUCOP experience compared to other pharmacies as “Very Good” or “Excellent” are described in *Table 3*. Four patient survey questions evaluated patient confidence in the student-pharmacists’ abilities. These responses are described in *Table 4*. Patients responding “Very Good” or “Excellent” when comparing the BUCOP experience to other pharmacies were considered satisfied with the services provided. More than three-fourths of the patients were satisfied. *Table 5* describes the significant associations with a satisfied patient’s confidence in students explaining how to take medications (81.3%,  $p = 0.021$ ) and a satisfied patient’s confidence in students helping

patients find ways to get medicine at another location outside of BUCOP (72.1%,  $p = 0.004$ ).

Overall, the majority (97.9%) of patients stated that they would use BUCOP again as their pharmacy and would refer others to use BUCOP.

### **Education Survey Results**

Twenty-six student-volunteers were invited to participate in the study. Two students declined to participate in the survey. Twenty-four (92.3%) individuals completed the survey and are included in the analysis. The education survey did not collect data on gender or age. For the purposes of this survey, demographics are defined in terms of current year in the professional phase of pharmacy school. Fifteen (62.5%) participants were 1<sup>st</sup>-year students, five (20.8%) were 2<sup>nd</sup>-year students, and four (16.7%) were 3<sup>rd</sup>-year students. No 4<sup>th</sup>-year professional pharmacy students participated in the survey.

A total of eight student survey questions evaluated volunteer satisfaction, specifically involving interactions with the IUSOC medical student team, thoroughness of the training session, improvement in confidence, and overall volunteering experience. Volunteer sessions which were provided to students prior to volunteering at BUCOP were rated as “Very Helpful” or “Somewhat Helpful” by 88% of students. The average rating of usefulness of the volunteer session was 1.84, with 2 being the median and mode (1 = Very Useful; 5 = Not at all Helpful). A majority (68%) of the student volunteers felt that pharmacy students were either “Very Utilized” or “Somewhat Utilized” by the IUSOC medical student team (*Table 6*). Likewise for the rating of interdisciplinary interactions, 68% felt that interactions were either “Very Beneficial” or “Somewhat Beneficial.” A small percentage of students felt that overall utilization and interactions deserved a rating of “Very Utilized.” Of the students participating in the survey, only 64% work in a pharmacy, suggesting that 36% of students volunteering at BUCOP are gaining their initial pharmacy experiences through this

unique setting. Of the 64% who worked in a pharmacy, 43.8% of them felt that the interaction with volunteering BUCOP pharmacists was either “Very Beneficial” or “Somewhat Beneficial.” Of the classes taken in pharmacy school prior to volunteering, students most commonly (52%) reported utilizing their knowledge and skills from the Introduction to Pharmaceutical Care series, which exposes 1<sup>st</sup>-year pharmacy students to “concepts of pharmaceutical care and develops skills in drug information retrieval, descriptive statistics and medical terminology.”<sup>10</sup> Other courses utilized included Therapeutics (32%) and Self Care (32%), which are 2<sup>nd</sup>-year pharmacy courses. All of the pharmacy students surveyed reported increased confidence in ability to counsel and/or interact with patients as a result of their BUCOP volunteering experience. Many students reflected on positive patient counseling experiences and improved interactions with other health professionals in their self-reflections. When asked what competencies they would improve upon, all students, regardless of curricular level, commonly reported they would improve on drug knowledge and disease-state management. All of the surveyed pharmacy students rated the overall volunteering experience at BUCOP as either “Excellent” or “Good.” Forty percent of students rated the experience as “Excellent.” Finally, 100% of all students stated that they would volunteer again and would recommend volunteering at BUCOP to future pharmacy students.

### **Advocacy Survey Results**

The advocacy survey did not collect information regarding demographics. Twenty-seven community members were surveyed to evaluate community perceptions of BUCOP and to understand how many individuals knew about the clinic’s location and services provided. The number of individuals declining participation was not recorded. The investigators selected 4 sites within 5 miles of the BUCOP to survey community members. For each site, the investigators were present to conduct



interviews for at least one hour. There was one randomly selected day for the advocacy portion of this study.

Seven questions evaluated knowledge of BUCOP and utilization of health care among community members. Knowledge of BUCOP was very limited among the community members surveyed, with 96% of individuals having no knowledge of BUCOP or IUSOC. However, when asked, a great majority (93%) of individuals stated they were comfortable with students filling prescriptions (*Table 6*).

Among those surveyed, the majority used CVS/Pharmacy® for filling prescriptions and federally-funded hospitals and ambulatory care centers for their medical needs. Nearly three-quarters of those interviewed utilized hospital systems as their primary location to seek medical care (*Table 6*).

## **DISCUSSION**

While student-run clinics and pharmacies have become more prevalent throughout the United States in recent years, there is little literature reviewing the strengths and weaknesses of these organizations.

This study evaluated three main goals of the organization, and as a result, it provides an overall picture of the impact BUCOP has had on underserved patients, pharmacy student volunteers, and the surrounding community. Consequently, this study has also helped to fulfill the fourth objective of the mission statement (*Understanding*) by completing research within BUCOP.

The study found promising results in terms of BUCOP fulfilling the service, education, and advocacy mission statement. In terms of service to underserved patients, the study found that the majority of patients were generally satisfied with the level of care provided by students at BUCOP. Additionally, there were no correlating negative responses from the two patients that stated they would not use BUCOP again or refer BUCOP to family/friends in the future; they rated 100% satisfaction and

confidence in BUCOP student volunteers. The positive feedback found in this study may be due to the philanthropic nature of BUCOP's services; patients receive free medications, counseling, and medication resource information (i.e. medication assistance) from students and health professionals dedicated to bridging the health care gap. The fact that the majority of patients also plan to use BUCOP or refer its services to others in the future, is also an indication of the satisfaction patients have with the BUCOP services.

When evaluating student experiences, the study demonstrated the value of BUCOP experiences on building professional confidence as a future pharmacist. This may, in part, be due to the fact that BUCOP is exposing students with no prior pharmacy work experience to a professional pharmacy setting. Students volunteering at BUCOP have the opportunity to serve in the roles of a technician (filling prescriptions), pharmacist (counseling on medications), and medication resource specialist for underserved and uninsured patients. Younger students were presumed to have a larger presence in this study and in the weekly BUCOP sessions due to the Introductory Pharmacy Practice Experiences required prior to the second semester of the third professional pharmacy school year. Finally, BUCOP provides a setting in which early inter-professional interactions may take place, and students have the opportunity to provide drug information services to the IUSOC medical student staff.

Finally, when examining the community perceptions of BUCOP and other student-run health care initiatives, surveyed community members felt comfortable with students filling prescriptions and providing adequate counseling. In the face of a nationally declining economy and ongoing unemployment rates, some members of this community might have to make the choice between receiving free health care at a student-run clinic or not receiving health care at all; it is not surprising

that community members would feel comfortable with professional students providing medications and counseling.

The study also revealed areas of needed improvement within BUCOP. The service survey revealed that the most common patient complaints were hours/days of operation and the wait time within the pharmacy. Pharmacy wait time may be influenced by a number of factors, including student volunteers' inexperience with pharmacy operations/ workflow and the active learning atmosphere of the pharmacy sessions. In order to help combat this limitation, the authors recommend reviewing more of the pharmacy operations and workflow during student volunteer training sessions. Because the hours of operation are limited by the availability of the IUSOC medical staff, the authors recommend future conversations between BUCOP and IUSOC leaders to consider extending/ expanding future clinic hours. The education survey revealed that one third of student volunteers do not feel utilized by IUSOC medical students and do not view interactions as beneficial. While BUCOP provides the opportunity for pharmacy and medical staff interaction, the authors suggest emphasizing more constructive, professional interactions between pharmacy students and medical students during clinic operations. Younger students should be encouraged to participate in conversations with IUSOC staff when choosing drug therapies or when IUSOC students pose drug information questions. The advocacy survey also revealed that the overwhelming majority of community members surveyed were unaware of BUCOP services. Because the majority of patients surveyed in the service survey knew about BUCOP through street advertisements, it may be beneficial to increase larger, more prominently placed street advertisements in the surrounding community, as well as to consider other avenues for outreach.

While the results from the study portray a picture of the overall successes and failures of BUCOP, there are some apparent study limitations. While patients, students, and community members

were informed that their responses would in no way affect their future experiences with BUCOP, the presence of the investigators, as surveyors, likely influenced some positive survey responses. Also, while patients were instructed to complete the service survey in regards to BUCOP only, patients may have found it difficult to distinguish between the services provided by BUCOP and those provided by IUSCOC; it is unknown if evaluations may have reflected more on the IUSOC services. Finally, due to a short data collection period, the small volume of patients utilizing BUCOP, and possibly the number individuals declining to participate, the participant survey pool was smaller than desired.

## **CONCLUSION**

While improvements can be made to better impact patients and students, BUCOP is fulfilling its mission statement in terms of service and education; however, due to a lack of community awareness regarding its presence, BUCOP is not fulfilling the mission statement in terms of advocacy.

## ACKNOWLEDGMENTS

I would first like to acknowledge my project partner and fellow Founding BUCOP Director Tyler Trueg, PharmD Candidate, MBA Candidate<sup>†</sup> for collaborating with me on this project. His commitment to BUCOP, ambition to succeed, and ability to complement my weaknesses proved to be invaluable in completing this project.

I would also like to thank Assistant Professor of Pharmacy Practice and BUCOP Faculty Advisor Kristal Williams, PharmD<sup>†, ‡</sup> for serving as the faculty mentor for this project. Her dedication to students, both inside and outside the classroom, has been constant throughout my previous experiences with her as my BUCOP advisor and now as my project mentor.

I would also like to thank the PharmD candidates serving as the Butler University Community Outreach Pharmacy Board of Directors at the time the study was conducted: Justin Koch<sup>†</sup>, Lauren Beeson<sup>†</sup>, Jennifer Macke<sup>†</sup>, Michael DeMarco<sup>†</sup>, Michael Brockman<sup>†</sup>, and Kristina Niehoff<sup>†</sup>. They allowed for the completion of this study and willingly opened us into the clinic each week to collect data.

I would like to also express gratitude to the Butler University faculty members who aided in the development of this project. Research analyst John Mulvaney, MHA<sup>†</sup> provided assistance in statistical analysis for the entire project. Vice-Chair of the Department of Pharmacy Practice and Associate Professor of Pharmacy Practice Jane Gervasio, PharmD<sup>†</sup> also provided guidance and feedback on the final study report.

A special thank you is dedicated to the continued supporters of BUCOP, Butler University College of Pharmacy and Health Sciences Dean Mary Andritz, PharmD<sup>†</sup>, Javier Sevilla, MD<sup>§, ¥, €</sup>, and the Indiana Board of Pharmacy who have supported BUCOP since before its founding.

Finally, I would like to extend extreme gratitude to the patients, students, and community members who participated in the study and to whom this study is dedicated.

The views and conclusions stated in this manuscript are those of the author and are not intended to reflect the opinions of the Butler University Community Outreach Pharmacy.

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## APPENDICES

### Appendix A

*The purpose of this survey is to evaluate the patient experience at the Butler University Community Outreach Pharmacy (BUCOP). This survey will ask you questions about your experiences with the BUCOP. Your help with this survey will help BUCOP offer better services to patients. Please feel free to write down both good and bad things you see at the pharmacy today.*

*This survey is 100% voluntary and is not required to receive health care or medication at BUCOP. The quality of medical care you receive at the IUSOC/BUCOP today or in the future will not be affected if you do not fill out this survey. No personal information will be required to keep your information safe. Thank you for your help with this research project. Your willingness to complete this survey serves as your consent to participate in this research study.*

*This survey is a part of a research study by Eliza Dy and Tyler Trueg, PharmD candidates, and assistant professor Kristal Williams, PharmD, CDE of Butler University College of Pharmacy and Health Sciences.*

**Please answer the following questions based on your experience TODAY in the PHARMACY area only.**

**1. Please rate these services in the PHARMACY from 1 (POOR) – 5 (EXCELLENT).**

	POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
Hours / days of operation	1	2	3	4	5
Wait time in the pharmacy (waiting for your prescription)	1	2	3	4	5
Friendliness of the pharmacy STUDENTS	1	2	3	4	5
How well did the pharmacy students explain your medical condition (how it affects your overall health, lifestyle changes to make, drugs needed)?	1	2	3	4	5
How well did the pharmacy student explain your medicine(s), (including why you need this, how to take it and what to expect)?	1	2	3	4	5
How well does this experience compare to other pharmacies you have used (Walgreens, CVS, Wal-Mart, etc.)?	1	2	3	4	5

**What is something the pharmacy student did that you greatly appreciated (write response below)?** \_\_\_\_\_



**2. Based on your visit to BUCOP today, please rate your confidence in the pharmacy students' ability to:**

	NOT CONFIDENT	UNSURE	CONFIDENT
Fill your prescription correctly and accurately	1	2	3
Explain how to take your medicine	1	2	3
Answer questions about other medicine you take	1	2	3
Help you find ways to get medicine at another location	1	2	3

**3. How many prescriptions are you receiving today?**

\_\_\_\_\_

**4. Is this your first time using the BUCOP pharmacy services?**

YES

NO

**5. Do you plan to use the BUCOP pharmacy services again in the future?**

YES

NO

**6. Would you refer friends and family members to get their medicine from this pharmacy?**

YES

NO

**7. Which hospital/physician's office do you most often visit to receive your medical care?**

\_\_\_\_\_

**8. Where do you most often fill your prescriptions?**

\_\_\_\_\_

**9. How did you hear about the clinic/pharmacy? (please check all that apply)**

Community Member

Neighborhood Fellowship Church

Family Member / Friend

Street advertisement

Website

Other: \_\_\_\_\_

## Appendix B

### BUCOP Education Volunteer Survey

*The purpose of this survey is to evaluate the current status of volunteer experience within BUCOP. By participating in this survey, you will help us further understand the experience and needs of BUCOP volunteers.*

*This survey is completely voluntary and is not required to participate in BUCOP. If you decide not to participate, your academic record/scholarship or your ability to participate in BUCOP in the future will not be affected. Your willingness to complete this survey serves as your consent to participate in this research study. Thank you for your consideration in helping analysis of the service learning experience of BUCOP.*

*This survey is being conducted as part of a research by PharmD candidates, Eliza Dy and Tyler Trueg and assistant professor Kristal Williams, PharmD, CDE of Butler University College of Pharmacy and Health Sciences.*

#### 1. Volunteer Training Sessions

- a. What is your current year in pharmacy school (circle one)?

**P1**

**P2**

**P3**

**P4**

- b. When was your volunteer training session (month or semester/year)?

\_\_\_\_\_

- c. How would you rate the volunteer session (circle one)?

**Very Helpful**

**Somewhat Helpful**

**Neutral**

**Not Very Helpful**

**Not at All Helpful**

- d. What was positive about the volunteer session? \_\_\_\_\_

\_\_\_\_\_

- e. What would you change about the volunteer session? \_\_\_\_\_

\_\_\_\_\_

#### 2. Volunteering at the Clinic

- a. How were you expecting to be utilized by the IU Medical Student Team (circle one)?

**Very Utilized**

**Somewhat Utilized**

**Neutral**

**Not Very Utilized**

**Not at All Utilized**

- b. How would you rate your interactions with the IU Medical Student Team (circle one)?

**Very beneficial**

**Somewhat Beneficial**

**Neutral**

**Not Very Beneficial**

**Not at All Beneficial**

- c. Were you able to utilize knowledge and skills you obtained in class? **YES** **NO**

If YES, which course(s)? (CIRCLE ALL THAT APPLY)

**Therapeutics**

**Self-Care**

**Dosage Forms**

**PDA**

**Pathophysiology**

**Ethics**

**Clinical Assessment**

**Biochemistry/Biotechnology**

**Other:** \_\_\_\_\_

d. Do you work at a pharmacy outside of school (circle one)?      **YES**                      **NO**

If YES, how would you rate your experience with the BUCOP pharmacist compared to the pharmacist(s) at your place of employment?

**Very Beneficial    Somewhat Beneficial    Neutral    Not Very Beneficial    Not at All Beneficial**  
*IN FAVOR OF BUCOP PHARMACIST* ←————→ *IN FAVOR OF EMPLOYER PHARMACIST*

e. Did your confidence in your ability to counsel/interact with patients at the clinic improve while at BUCOP (circle one)?      **YES**      **NO**

f. How would you rate your overall volunteering experience at the BUCOP (circle one)?

**Excellent                      Good                      Average                      Poor                      Very Poor**

g. Would you volunteer again at the clinic (circle one)?                      **YES**                      **NO**

h. Would you recommend volunteering at the BUCOP to future pharmacy students (circle one)?

**YES      NO**

### 3. Volunteer Reflection

a. List three things you feel you did well at the clinic:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

b. List three competencies you would improve upon (For example: Counseling, Drug knowledge, Disease-state management, Communication with physicians, etc.):

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

To help us identify subjects that have volunteered multiple weekends and filled out this survey more than one time, please provide the following information:

**Hometown Street Address Number and Year in Pharmacy School:** \_\_\_\_\_

*EXAMPLE: 123 Butler Way, P2 pharmacy student = 123P2*

*NOTE: This identifier will not be linked to your personal information in any way. By providing this identification code, your survey responses will be used without compromising your confidential information.*

#### 4. Further Study Participation

*To protect your identity, this portion of the survey will not be linked to your responses above. You may or may not be contacted for an additional survey. You are not required to provide additional information or perform additional tasks beyond filling out a survey. Your name and contact information will not be released in the results of this project.*

Would you be willing to fill out another survey again in 2011 (circle one)?    **YES**    **NO**

If yes, please sign below and provide your contact information:

*I acknowledge that by signing below, I authorize the organizers of this survey contact me for a follow-up survey involved in this research project.*

Name (Print): \_\_\_\_\_

Name (Signature): \_\_\_\_\_

Email Address: \_\_\_\_\_

*Thank you for your participation in this survey!*

## Appendix C

### INTERVIEWER SCRIPT:

- Good Morning, my name is \_\_\_\_\_. I am with the Butler University Community Outreach Pharmacy (BUCOP). I would like to invite you to answer a few questions about your awareness and use of BUCOP.
- The goal of this survey is to see how well the BUCOP pharmacy students have advertised their services and to see how they have supported the health needs of the community.
- The interview, which is completely voluntary, will last about 5 minutes. There is no penalty for choosing to not participate in the survey. I will not ask or collect any personal information. Your responses/feedback will not be linked to you in any way.
- If you chose to participate you will provide valuable information on the community's knowledge/confidence in a student-run pharmacy and how BUCOP can better serve health care needs of the community.
- We ask that you express your most honest opinions; both positive and negative feedback, so we can better serve the community.
- Would you be interested in answering our questions:
  - YES: We ask that you answer every question, but if a question makes you uncomfortable, you do not have to answer. Just tell me you would rather not answer that question. [Continue survey.]
  - NO: Thank you for your time. Have a wonderful day.

1. **Do you attend the Neighborhood Fellowship Church (located at 3102 E 10<sup>th</sup> Street)?**

YES

NO

2. **Do you know about the free clinic and pharmacy held within the Neighborhood Fellowship Church every Saturday morning? (If NO, proceed to next page)**

YES

NO

**If YES:**

a. **Have you (or a member of your family) attended the clinic/pharmacy?**

YES

NO

b. **How did you learn about the clinic/ pharmacy?**

\_\_\_\_\_

c. **Have you referred someone to the clinic/pharmacy?**

YES

NO

d. **Would you consider using the clinic/pharmacy again in the future?**

YES

NO

e. **How can BUCOP better serve the health care needs of this community?**

\_\_\_\_\_

**If NO:**

f. **Is there a particular reason why have not attended the clinic/ pharmacy?**

\_\_\_\_\_

**FOR ALL:**

3. **Where do you most often go to receive your medical care?**

\_\_\_\_\_

4. **How often do you follow your doctor's advice (taking the medications your doctor prescribes or recommends)?**

\_\_\_ Sometimes \_\_\_ Always \_\_\_ Never (Reason: \_\_\_\_\_)

5. **Where do you most often fill your prescriptions?**

\_\_\_\_\_

6. **What is most important to you when choosing where to get your medications filled?**

\_\_\_\_\_

7. **Do you have any problems/ concerns with students filling your prescriptions and teaching you how to take them?**

YES

NO

Explanation:

\_\_\_\_\_

*INTERVIEWER SCRIPT: (conclusion of the interview)*

*Thank you for taking the time to answer our questions. Have a wonderful day.*

**TABLES**

**Table 1: Service Survey Patients Characteristics**

<b>Variable</b>	<b>Total Patient Count (n=48)</b>
<b><i>BUCOP Usage Statistics</i></b>	
<b>Average # of prescriptions</b>	2
<b>Using BUCOP for the first time</b>	25 (52.1%)
<b>Will use BUCOP again</b>	47 (97.9%)
<b>Will refer BUCOP to others</b>	47 (97.9%)
<b><i>Most Used Pharmacy (Top 5)</i></b>	
CVS/Pharmacy®	16 (33.3%)
Wal-Mart	6 (12.5%)
Kroger	4 (8.3%)
Wishard Hospital	4 (8.3%)
None	2 (4.2%)
<b><i>Most Used Physician (Top 5)</i></b>	
Wishard Hospital	10 (20.8%)
None	6 (12.5%)
Peoples	5 (10.4%)
IUSOC	5 (10.4%)
Methodist Hospital	4 (8.3%)
<b><i>How do Patients Hear about BUCOP (Top 3)</i></b>	
Street Advertisement	21 (43.8%)
Family Member/Friend	12 (25.0%)
Neighborhood Fellowship Church	9 (18.8%)

**Table 2: Patient Ratings of Survey Questions/Components of BUCOP (1 = Poor; 5 = Excellent)**

<b>Survey Questions</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>% Rating as "Very Good" or "Excellent"</b>
<b>Hours/days of operation</b>	3.78	4	5	56.5%
<b>Wait time in the pharmacy</b>	4.04	4	5	66.0%
<b>Friendliness of pharmacy students</b>	4.58	5	5	91.7%
<b>How well did pharmacy students explain patient's medical condition</b>	4.37	5	5	80.4%
<b>How well did pharmacy students explain patient's medications</b>	4.38	5	5	78.7%
<b>How well does this experience compare to other pharmacies the patient has used</b>	4.40	5	5	81.3%



**Table 3: Responses to Survey Questions (Ratings) of Satisfied Patients (those who stated that BUCOP experience compared to other pharmacies was “Very Good” or “Excellent”)**

<b>Survey Questions</b>	<b>% Rating as “Very Good” or “Excellent”</b>	<b>% Rating as “Excellent”</b>	<b>Likelihood Ratio</b>
<b>Hours/days of operation</b>	56.5%	41.3%	p = 0.013
<b>Wait time in the pharmacy</b>	63.8%	40.4%	p < 0.001
<b>Friendliness of pharmacy students</b>	79.2%	62.5%	p < 0.001
<b>How well did pharmacy students explain patient’s medical condition</b>	78.3%	63.0%	p < 0.001
<b>How well did pharmacy students explain patient’s medications</b>	76.6%	63.8%	p < 0.001

**Table 4: Responses to Survey Questions (Confidence) of Satisfied Patients (those who stated that BUCOP experience compared to other pharmacies was “Very Good” or “Excellent”)**

<b>Survey Questions</b>	<b>% Rating as Confident</b>	<b>Likelihood Ratio</b>
<b>Confidence in students in explaining how to take medicine (n = 48)</b>	81.3%	p = 0.021
<b>Confidence in students answering questions about other medications the patient takes (n = 48)</b>	79.2%	p = 0.251
<b>Confidence in students helping the patient find ways to get medicine at another location (n = 43)</b>	72.1%	p = 0.004

**Table 5: Volunteer Pharmacy Student Survey Responses Evaluating IUSOC Medical Students (1 = very utilized/beneficial, 5 = Not at all utilized/beneficial)**

<b>Survey Questions</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>% Rating of 1 or 2</b>	<b>% Rating of 1</b>
<b>Pharmacy students feeling utilized by the IUSOC Medical Student Team</b>	2.28	2	2	68.0%	12.0%
<b>Rating of interactions with IUSOC Medical Student Team</b>	2.16	2	2	68.0%	16.0%

**Table 6: Responses from Community Members Surveyed**

<b>Survey Questions</b>	<b>Predominant Result</b>
<b>% of individuals surveyed stating compliance with physician recommendations</b>	68%
<b>% of individuals with no knowledge of BUCOP or IUSOC</b>	96%
<b>% of individuals comfortable with students filling prescriptions/counseling</b>	93%
<b>Most common pharmacies used</b>	
CVS/Pharmacy®	9 (33.3%)
Kroger	5 (18.5%)
Wishard	4 (14.8%)
Wal-Mart	2 (7.4%)
Other*	7 (25.9%)
<b>Most common physicians</b>	
Wishard	9 (33.3%)
Community Hospital East	4 (14.8%)
Indiana University Health Hospitals	2 (7.4%)
General physician office/Family physician	7 (25.9%)
Hospital (Other or unspecified)	4 (14.8%)
No means of care	1 (3.7%)

\*Other includes: VA Hospital, Bioscripts, Humana mail order, Horizon House, Tucker Pharmacy, and N/A