

Applying the Model for Improvement to a Student-run Quality Improvement Project in a Refugee Center: A Pilot Study

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Abstract

Due to insufficient communication strategies between healthcare providers and refugees in the United States, this quality improvement project aimed to improve disparity in refugee healthcare. We chose to focus on community pharmacist counseling sessions with refugees in the city of Rochester, New York. The two refugee populations we focused on were the Burmese and Nepali. Due to illiteracy in their native language, the refugees were not receptive to a pamphlet detailing the beneficial roles a pharmacy can have in improving their health and wellbeing. We created a pictorial survey of pharmacies near a refugee center to identify the pharmacies the refugees were utilizing in the area. Once we identified these pharmacies, we created a counseling aid booklet translating common pharmacy language/terms into English, Burmese, and Nepalese languages supported by pictorial diagrams. The counseling aid booklet was evaluated by pharmacists using a satisfaction scale. Overall, the counseling aid booklet was found to be helpful for the pharmacist's daily interaction with refugee populations. Further plans for the counseling aid booklet include adding more pharmacy counseling terms for common disease states in refugee populations, making the book more inclusive of other languages, and implementation in more community pharmacies and other diverse healthcare settings.

Keywords: Model for improvement, quality, quality improvement, health literacy, numeracy, refugee, Nepal, Burma, pharmacy education, community based participatory research, pharmaceutical care, community pharmacy, medication safety, population based healthcare

Introduction

Nepal and Burma are two countries in the world impacted by situations that result in high predominance of refugee populations. In Kathmandu, Nepal, buildings collapsed as a magnitude 7.8 earthquake hit in 2015, killing about 9,000 people and injuring 22,000 throughout the country.¹ Then, three weeks later another major earthquake (magnitude 7.3) struck, following a series of aftershocks from the first. The United States (US) government responded by granting Temporary Protective Status to refugees from Nepal, a mountainous country wedged between India and China, permitting them to live and work legally in the US.

In contrast to Nepal, Burma has a high rate of refugees for different reasons. Instead of natural disaster related, residents of Burma are forced to seek refugee status for political reasons. To the southeast, Burma borders the countries of India, China, and Laos and has been the source of the largest influx of refugees to the US in recent years. Religious and ethnic persecution of Christians and Buddhists, including the Rohingya genocide, followed a disproportionate military response to a Rohingya militant group attack in 2017.² Approximately more than a million Burmese are displaced or in refugee status worldwide.² Today, Burmese refugees make up nearly half of all legal refugees in the US.³ The President proposed quotas by country of legal refugees and legislated by Congress.³

While about three-quarters of Nepali men can read and write in their native language by age 15, only about half of girls and women are able.² Literacy rates for Burmese men are similar to literacy rates of Nepali men, but the literacy rates for Burmese women are higher than Nepali women with about 70% Burmese women being literate in Burmese by age 15.² Although both countries have different reasons for seeking refugee status, gender differences in literacy rates are observed which could impact opportunities and health seeking behavior.

Literacy concerns may extend to health literacy as well. A study conducted in Calgary, Canada was performed to determine the effects of service barriers and health status of immigrants, found that 54.8% of South Asian immigrants reported not knowing about existing health services, 37.3% reported that health professionals did not speak their language, and 35.5% reported health professionals not understanding their culture.⁴ Improvements in cultural awareness and sensitivity among providers may have little impact on refugees who are illiterate in their native language or English.⁵ Pharmacists play a crucial role in patient-centered healthcare, but in most community pharmacies there are little to no translation tools that create a more receptive patient-care experience.⁶

To the best of our knowledge, this is the first quality improvement effort tailored to improving communication between Nepali and Burmese refugees and community pharmacies, as this topic remains largely unexplored.^{5,6,7} Burmese refugees make up nearly half of all legal refugees in the US.² Given the large proportion of legal refugees who are Burmese, this is an important issue.² Based on the current limited knowledge and resources that are provided for refugees

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in community pharmacy settings, this project aims to improve the Nepali and Burmese refugee's gaps in knowledge about current pharmacy practices.

Methods

Setting

Mary's Place Refugee Outreach, LLC (Mary's Place) is located in a former church in northwest Rochester, New York, an urban, low-income neighborhood (median household income is \$31,169, and the poverty rate is 28.2%).³ Since 2009, Mary's Place has served about 500 families per year from Bhutan, Burma, the Democratic Republic of the Congo, Ethiopia, Nepal, Nigeria, Somalia, Sudan, South Sudan, Vietnam, and Syria.¹⁰ It is a sponsored ministry of the Cathedral Community, a parish in the Diocese of Rochester.¹⁰ Mary's Place provides three adult English language classes per day, case management five days a week, job skills class two days per week, weekly food distribution on Tuesdays, weekly clothing distribution, and summer children's day camp.¹⁰ It is operated by a full-time director, two part-time staff and volunteers. Mary's Place offers free clinics and in 2018 recruited students from the Wegmans School of Pharmacy at St John Fisher College to identify and implement opportunities for quality improvement.

Refugees from Nepal and Burma have resettled in Rochester, New York, through Mary's Place. Little evidence-based knowledge was known about the refugees' knowledge and use of community pharmacies or their experiences with pharmacy staff. The purpose of this quality improvement project was to (1) improve Burmese and Nepali refugee's knowledge about and use of these pharmacies, (2) create and distribute a free, trilingual (English, Burmese, Nepalese) and pictogram pharmacy counseling book to these pharmacies to support their care for these refugees, and (3) assess pharmacy staff interest in using the resource to service these refugee populations.

Subjects

Study subjects included Burmese and Nepali refugees who presented to Mary's Place between 07/01/2018 and 07/31/2018. The two refugee populations were chosen based upon each having the largest recorded number of people visiting Mary's Place during the time of this project.

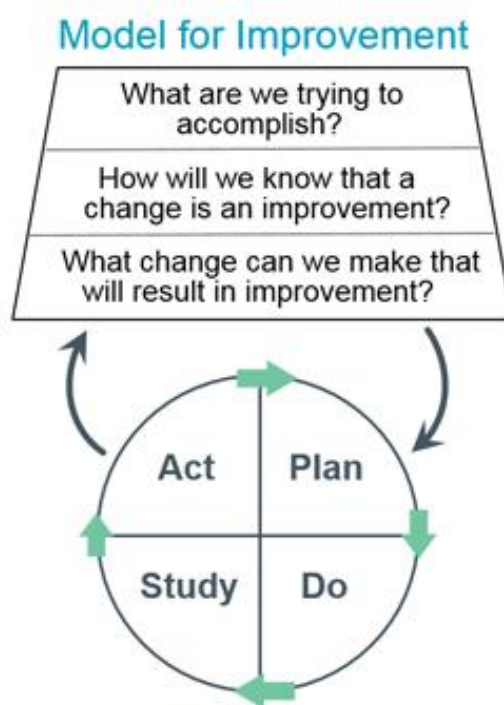
Model for Improvement

The Institute for Healthcare Improvement's (IHI) Model for Improvement (The Model) was used as the framework for this quality improvement project, because this science of improvement creates rapid cycle testing to generate learning and innovation that naturally cultivates and accelerates improvement in all settings.^{8,9} The tension between experimental study designs and clinical quality improvement was described as early as 2008.⁹ The Model diverges from traditional research by integrating learning during study implementation and making changes throughout the project to establish more efficient and successful outcomes in a shorter amount of time.⁹ Many of the study components required in an

experimental design is not needed in a quality improvement project, which results in less restrictions and quicker evaluation of interventions for improvement.⁹

Quality improvement involves adaptation to obstacles during implementation to successfully establish upward change. The Model consists of four cycles: Plan, Do, Study, Act (Figure 1).^{8,9} First, develop a plan to test the intervention (Plan), execute the intervention strategy (Do), note and learn from the obstacles experienced (Study), and determine what modifications should be made to overcome the obstacles (Act).^{8,9}

Figure 1. Institute for Healthcare Improvement Model for Improvement utilized in this project



Each cycle constituted a week of work with Tuesday food distribution being our "Do/Act" opportunity each week. The refugees were interviewed at the center during food distribution hours on Tuesdays over four weeks in July 2018 to maximize the number of refugees present. Information collected was transcribed while present with the refugees. We conducted a systems quality improvement rather than studying the refugees individually, so we did not collect individual level data about refugees or track them over time. We did not estimate a response rate for this study of quality improvement as efforts in practice aimed at disseminating information about local pharmacies and sharing an illustrated Pharmacy Counseling Booklet Aid with pharmacies to support counseling. Since this is a quality improvement project, we did not propose or test hypotheses related to the refugees. This project was reviewed and determined to be exempt by the Human Subjects Review Board of St John Fisher College, which deemed informed consent was not required.

Cycle 1: Two Separate Bilingual Pamphlets about the Community Pharmacist

For Cycle 1, the Plan entailed the design and implementation of a pamphlet explaining the roles of a pharmacist on the left side of the pamphlet and the translation in Burmese or Nepalese on the right side with visual aids. Google Translate was used to translate English to Burmese and Nepalese.¹² The pamphlet would support patient education regarding the local community pharmacies, their free services and support elicitation of knowledge, and provide information about the four nearest pharmacies to Mary's Place (Figure 2). The back of the pamphlet had demographic questions along with questions regarding prior and current knowledge of the role of a pharmacist before and after reading the pamphlet. Some of the demographic questions included age and gender, while the remaining questions targeted medication use, helpfulness of pamphlet, satisfaction with pamphlet, knowledge gaps with a disease or medication they use, and number of people they shared the pamphlet with if any (Figure 3). The entirety of the pamphlet including questions were generated by the two pharmacy students conducting the study and approved by the course instructor. Criteria included sixth grade English without jargon, translation into Burmese and Nepalese using Google translate, 1-page limitation, and the use of images and mixed fonts to increase visual interest. The incentive for the refugees to return the questionnaire for data collection was the first sentence stated on the back of the pamphlet involving receiving an orange with returning the pamphlet to Mary's Place within seven days to be collected by the Director. The refugees refer to the Director of Mary's Place using her first name, Charlseay, as she is referred to in the pamphlet.

On the first day, a second year PharmD student, waited near the entrance of the food distribution area with the pamphlets and attempted to engage every refugee even ones not in the study populations. The student was culturally prepared to engage the Burmese and Nepalese refugees through visiting a Burmese refugee camp in Thailand, volunteering at Mary's Place, and researching the two study populations. The student did not have particular training about cultural engagement with refugee patients or Nepalese refugees specifically, and this training if available would have been beyond the scope of a student-run pilot study focused on quality improvement models and methods. Data collection for Cycle 1 included total number of refugees that consented to participate at the center, nationality of the refugees that provided consent, and number of participants that accepted the pamphlet.

Figure 2. (Pamphlet Front) Nepalese Bilingual Pamphlet about Community Pharmacists and Pharmacies

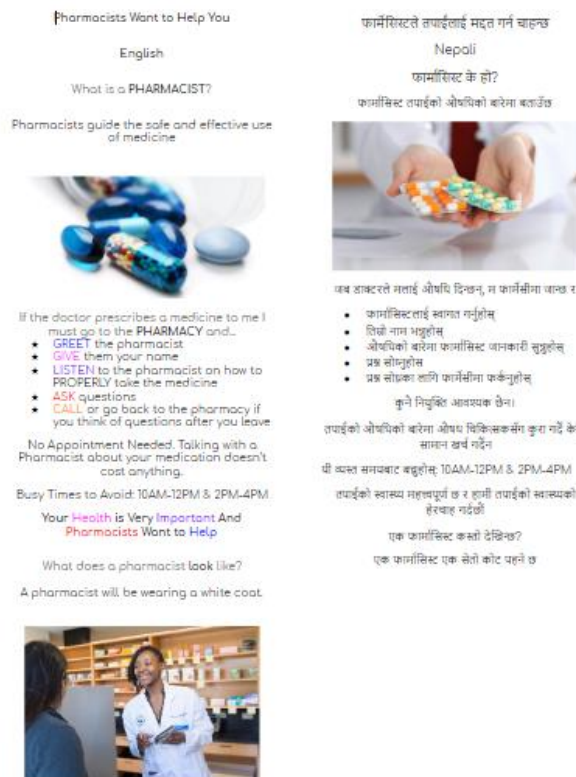


Figure 3. (Pamphlet Back) Nepalese Bilingual Pamphlet about Community Pharmacists and Pharmacies



Cycle 2: Photographs, Oranges, and Interviewer Placement

We did not determine if the refugees had low health literacy, but rather implemented universal precautions to address the potential of low health literacy leading to the improvement for Cycle 2 involving the use of photographs of the six pharmacy storefronts that are within four miles from Mary's Place. Pictograms are used as a form of communication through pictorial resemblance to a physical object or action that conveys universal meaning.^{11,12} Studies show that pharmaceutical pictograms can be utilized to improve patient comprehension.^{11,12} The method of visual communication was executed by showing pictures of the pharmacy storefronts and having the participants circle those they recognized as their pharmacy if any (Figure 4). Fifty copies of the pamphlet were made to have on-hand at the center. Below each picture, listed the pharmacy name, address, and hours. Space was included for the interviewer to record the refugee's nation of origin if known and the participant's knowledge of the role of a pharmacist/pharmacy.

To attract more attention from the refugees, the Mary's Place Director suggested to place a desk near the entrance of the food distribution area and hand out oranges, a special treat. Each orange was wrapped in colored cellophane paper with a ribbon. The same PharmD student from the previous week sat at the desk and gave each refugee a free orange with or without completing the handout. Data collection transcribed for Cycle 2 was the nationality of the refugees that provided consent, knowledge of a pharmacist/ pharmacy, and the pharmacy the refugee frequents. The participants that didn't recognize their pharmacy or didn't have a pharmacy were recorded.

Refugee utilization of community pharmacies near Mary's Place were placed into five separate categories. Independent pharmacy is defined as a retail or community pharmacy that is not directly associated with a corporate community pharmacy. Outpatient hospital pharmacy is defined as a pharmacy directly affiliated with a hospital and provides medications to patients that are not currently seeking treatment in the hospital. Retail pharmacy is defined interchangeably with community pharmacy as being directly associated with a corporate chain of pharmacy. The "Others" category is defined as a pharmacy that was not one of the other four community pharmacies represented in the survey.

Figure 4. Pharmacy Location Questionnaire


Do you know what a pharmacy / Pharmacist do?

YES NO


Nationality?

Burmese Nepali Others


Which Pharmacy do you go to?




Located in: Sarotoga Pharmacy
Address: 192 Lyell Ave, Rochester, NY 14605
Hours: Open ☑ Closes 6PM




Located in: Wegmans
Address: 2301 Lyell Ave, Rochester, NY 14606
Hours: Open ☑ Closes 9PM




Located in: Highland Hospital Pharmacy at Jordan Health Center
Address: 82 Holland St, Rochester, NY 14605
Hours: Open ☑ Closes 6PM



Located in: CVS
Address: 1455 Lake Ave, Rochester, NY 14615
Hours: Open ☑ Closes 9PM



Located in: New Clinton Pharmacy
Address: 360 Saint Paul St., Suite 1, Rochester, NY 14605
Hours: Open ☑ Closes 7:30PM



Located in: Walgreens
Address: 430 Spencerport Rd, Rochester, NY 14606
Hours: Open ☑ Closes 10PM

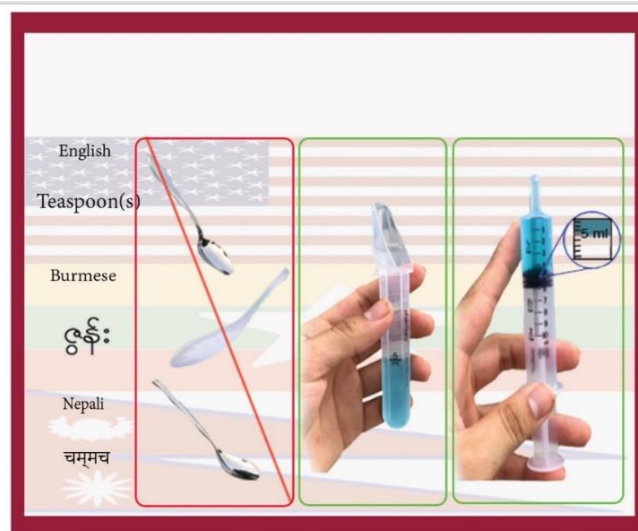
Cycle 3: Creating and Distributing a Counseling Aid for Community Pharmacies

Cycles 1 and 2 identified communication barriers and knowledge gaps with pharmacy practice among the refugees through physical encounters and supported our original plan to create a tool to support community pharmacies' communication with these refugees. Data from Cycle 2 identified that our sample population went to four out of the six pharmacies listed in the pharmacy location questionnaire. The four pharmacies the refugees recorded as their own were provided the counseling aid to assess feasibility. Adobe Photoshop was used to design a trilingual, pictorial medication counseling guide. The spiral-bound flipbook had five independent flip columns (Figure 5). The columns represented medication quantity, formulation, route, and frequency. All translations were made using Google translator. Pictures were either taken with a camera to be converted to a color drawing or drawn in Adobe Photoshop. The second half of the booklet provides simple and common pharmacy counseling points (i.e., time of day, liquid measuring devices, taking the medication with or without food). A second PharmD student and the faculty mentor reviewed the first draft before the booklet was produced for distribution. The PharmD student then visited each pharmacy on a walk-in basis to share the booklet with the supervising pharmacist, explain the project,

and make plans to follow-up after at least one week. To evaluate the pharmacists' satisfaction with the counseling aid booklet, the pharmacists were asked upon completion of reading over the book to give a satisfaction score between 1 (least satisfied) through 5 (most satisfied) on the overall ease of use, construction, and convenience of the booklet. The community pharmacist's feedback was incorporated into the revised book, which has now been copyrighted and distributed via the St. John Fisher College Library digital collection.

Figure 5: Pharmacy Counseling Booklet

English	Quantity	Formulation	Route	Frequency
Take	1	Capsule(s)	By Mouth	Once daily
Burmese	1	Capsule(s)	နွတ်ဖြင့်	နေ့စဉ်
Nepali	1	क्यापसुल	मुखद्वारा	दैनिक एक पटक



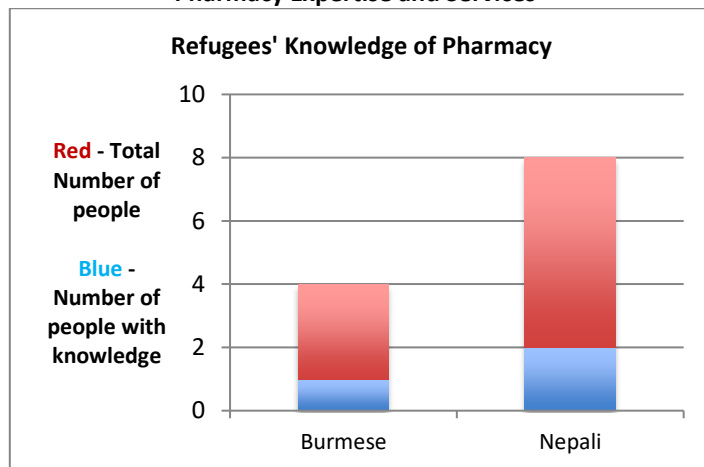
Results

Refugee Knowledge and Use of Pharmacies

Cycle 1 showed a total of thirty-two participants consenting that day with ten Nepali and five Burmese (N=15) accepting the pamphlet that described pharmacy services in English, Burmese, and Nepalese. There were no completed questionnaires received in Cycle 1.

Cycle 2 engaged twenty-eight consenting participants, including four Burmese and eight Nepalis (N=12) responded to our interviewer-prompted questions about their knowledge of what a pharmacy and pharmacist has to offer them. At baseline, 25% (N=1) of the Burmese and 25% (N=2) of the Nepalis reported knowing the services a pharmacy had to offer (Figure 6).

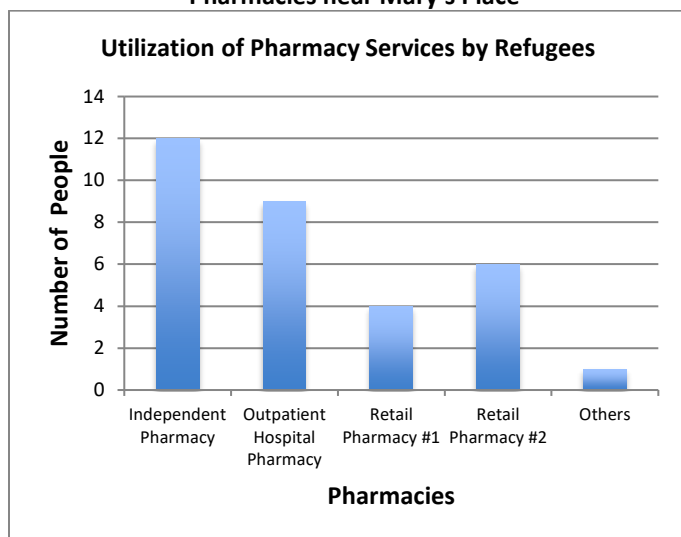
Figure 6: Refugees' Knowledge of Community Pharmacy Expertise and Services



Nearly half (N=12) of all refugees reported using the same nearby independent pharmacy (Figure 6). Unlike many community pharmacies, this independent pharmacy has bilingual employees who are fluent in Burmese and Nepalese. Of the 24 refugees that participated in this pictorial pharmacy survey in Cycle 2, nine indicated they utilize an outpatient

pharmacy, four refugees utilize retail pharmacy #1, six refugees utilize retail pharmacy #2, and one refugee reported a pharmacy not represented in our survey (Figure 7).

Figure 7. Refugee Utilization of Community Pharmacies near Mary's Place



Community Pharmacy Satisfaction with the Trilingual, Pictorial Counseling Aid Book

Of the four pharmacies utilized by the participants, one retail pharmacy's supervising pharmacist provided detailed written feedback about the counseling aid booklet within 24 hours and reported being "extremely satisfied" with the construction and feasibility of the final version of the booklet. The other retail pharmacy also provided ideas for improvement at follow-up and was "moderately satisfied." Both reported keeping the booklet for use in their pharmacies. A third pharmacy accepted the free booklet but declined to provide feedback. The fourth pharmacy declined the free booklet without explanation.

The recommendations provided by the pharmacists were to add more counseling notes, different formulations, and blank sheets. Examples of counseling notes discussed between the pharmacist and PharmD student and added to the booklet; "take at night" and "take in the morning." Blank sheets were added to the end of the booklet to allow pharmacists to customize the booklet as desired.

Discussion

Our quality improvement project aimed to improve communication between community pharmacies and Nepali and Burmese refugees by July 31st, 2018 by developing:

1. A pamphlet describing services in English, Burmese, and Nepalese to improve Burmese and Nepali refugee's knowledge about and use of community pharmacies.
2. A handout with a pictorial list of the four community pharmacies nearest to Mary's Place to identify the pharmacies that our participants were frequenting for the most effective distribution of the counseling aid booklet.

3. An original pharmacy counseling aid booklet with illustrations and English-Burmese-Nepalese translation to at least three community pharmacies to assess pharmacy staff interest in implementing the resource to service these refugee populations.

The resources created were designed to support communication between the local refugee populations and community pharmacists to improve the experience, communication, and medication management for the identified and focused upon refugee populations. This improves overall health of the refugees in the community by increasing access to care and moving toward closing the communication gap between pharmacists and refugees. The director of Mary's Place has copies of all materials and may choose to use them to direct refugees where to pursue services if not currently being cared for at a pharmacy. The counseling aid booklet may be implemented in multiple healthcare settings. This resource can be updated to become more inclusive of other languages, pharmacy counseling terms, and disease-states.

Limitations

Due to resource limitations, the translation relied upon Google Translate, which may not have been precise. Similarly, none of the researchers spoke the native languages of the study subjects which limited our assessments of knowledge and use of community pharmacies. Our sample was a convenience sample limited to July 2018, and may not have been representative of the typical refugee population. The data collected was not semi-structured or audio-recorded. Specifically, the most recent refugees to the United States are more likely to use the free food distribution and other necessary services provided by Mary's Place. While the more established refugees (who have found employment, etc.) are less likely to use Mary's Place and/or less likely to utilize the food distribution as this service occurs during workday hours.

To assess the feasibility of this quality project, further data must be collected on the accuracy of our translating resource and the impact our pharmacy counseling aid booklet has had in improving quality of refugee health literacy and their understanding of how to take or give medication to themselves or a loved one. The satisfaction of communication during a counseling session must be evaluated over a longer duration of time than the duration of time explored in this project. Additionally, a larger number of refugees are needed in a project such as this to more accurately reflect the refugee population in cities across the United States.

Conclusion

Pharmacists play a crucial role in patient-centered healthcare with all populations, especially refugee populations, but in most community pharmacies, translation resources may not always create a more receptive and personal patient-care experience for these refugee populations.⁶ Implementing new health care standards in modern practice is difficult due to the inherent

complexity of healthcare systems and services provided. Based on the information gathered from this quality improvement project, there is a need for improving the knowledge and communication gap between pharmacists and refugees. This topic must be continuously address to assure equality of healthcare in the United States to improve overall health of our citizens and all people around the world. Changes in healthcare are challenging, as they pose a threat to familiarity and fundamentals, but these small changes in communication have the potential to improve the lives of many patients.

Acknowledgements: The Institute for Healthcare Improvement Open School Leadership Academy and Chapter at St John Fisher College, Rochester, New York provided in-kind training that contributed indirectly to the success of this program. Charley Bickett and the refugees of Mary's Place guided the development of the question and donated their time. The community pharmacists of the local pharmacies accepted our support.

Funding/Support: None

Conflicts of Interest: None

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