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Short Term Medical Mission Antibiotic Protocol

Greg Jennings
Southern Illinois University Edwardsville

Executive Summary

Introduction to the Problem

Short-term medical mission trips have been increasing in popularity significantly over the last 20 years (Lasker et al., 2018). These experiences gather many diverse volunteers, and the actual purpose of the experience may vary. Many missions are based on improving the health outcomes of developing, low-income countries or regions. With so many trips based upon improving health, many medical professionals from the United States, Europe, and other wealthy countries volunteer their time to participate in these experiences. However, many mission trip volunteers have little experience, especially when it comes to treatments and medication substitutions (Lasker et al., 2018). Though some volunteers may have little to no medical training, they can still be utilized on mission trips. Their roles can vary, but some non-medical volunteers can be asked to assist in the pharmacy area. Since there is minimal to no training for some volunteers, practice guidance to uphold the standard of care based on evidence can be lost. Therefore, a clinically-based antibiotic protocol is needed on these mission trips.

With the increase in popularity and demand for these missions, the standard of care provided should not drop below the standards utilized in developed countries. The need for clinical guidelines and a policy of care are needed to make sure the standard of care is maintained (Lasker et al., 2018). These guidelines should be utilized and should work in collaboration with the host countries' cultural beliefs and practices, while providing evidence-based care. Research has shown that there were few or absent protocols or clinical guidelines being utilized on short term medical missions (STMM) (Dainton et al., 2016a).

Literature Review

The need for a clinically-based protocols was consistently recommended to guide treatment on short term medical mission trips. Clinical protocols are needed to ensure that the

most current evidenced based care is provided to patients in developing countries (Dainton et al., 2016b). The use of such protocols must be well scrutinized and utilize both current evidence-based practice guidelines and have support from local community leaders. The local community leaders offer valuable insight as to how realistic and practical a protocol could be. The local leaders also know which medications are available for sustained prescribing for those seeking treatment. Patients could seek care, receive a prescription for a medication and then not be able to quickly obtain it due to lack of resources in the area. This could lead to complications of the condition being treated, which could then cause more harm than good. The use of such protocols is minimal in practice by STTM at this time (Dainton et al., 2016b). Therefore, the creation of a collaborative protocol that helps providers working in developing countries correctly choose available and clinically appropriate treatments for the presenting problem will provide the best outcomes for these patients.

Antibiotics must be a primary focus when developing protocols. Antibiotic overuse, underuse, or improper use can each lead to unnecessary complications for the patient. Additionally, it can lead to distrust among the people in the community being served (Dainton & Chu, 2017). The researcher investigated the use of an antibiotic protocol established for Latin America, specifically for skin conditions. His findings proved that having current clinical guidelines allowed for greater treatment consistency and efficacy. Daunton and Chu noted that consistent use of guidelines ensured the best outcomes. They also noted the importance of involving local healthcare team to increase sustainability.

Nonmaleficence is an ethical principle health professionals strive to practice. When working in developing countries sometimes this ethical principle gets lost due to the lack of

resources. This results in the use of outdated medications, outdated supplies, and substitutions for medications that would not be legal or ethical in the United States (Rowthorn et al., 2019).

Project Methods

The methods for this Quality Improvement Project utilized a pretest and posttest design in which a survey of six Likert-type questions regarding a clinically updated antibiotic substitution protocol was given. The posttest contained two additional Likert-type questions which focused on ease of use, and two open-ended response questions. The pre and posttests were given to all volunteers on the STMM trip as everyone could have potentially worked in the pharmacy area, while being overseen by a registered nurse.

The volunteers completed the pretest prior to any clinic days and the data was used to obtain a baseline knowledge of their antibiotic substitutions for different clinical situations. After the baseline knowledge was obtained a 60-minute interactive live training session was provided to all volunteers on the trip. The session showed them how to utilize the antibiotic protocol that had been developed. Each volunteer was provided a laminated copy of the antibiotic protocol and was led through a series of hypothetical provider orders and patient clinic scenarios challenging them to utilize the protocol provided.

Finally, a posttest, consisting of the same six pre-test questions, plus an additional four questions regarding the ease of use as previously described, was administered following the educational session and four clinical days of clinical use. The results of the posttest were used to compare and ascertain the effectiveness of the volunteer pharmacy staff's ability to make these substitutions, based on inventory.

Evaluation

The ten volunteers that did participate had experience and backgrounds that ranged from health care providers to non-medical volunteers. Only two registered nurses and one non-medical

volunteer worked in the pharmacy area during this mission trip. The ten volunteers that completed the pretest also completed the post test using the protocol created. All of the volunteers agreed to complete the posttest because they could, but did not, work in the pharmacy area on this particular trip.

The pretest revealed a limited knowledge of antibiotics and antibiotic substitution, which was expected. There were fifteen mission trip members of which ten (67%) completed the pre and posttests. The average pretest score was low at 35%, which exposed a poor understanding of appropriate medication substitution knowledge. Scores ranged from 0% to 83.3%.

After having the 60-minute educational session explaining how to use the protocol, post test scores improved greatly. The average was 98% on the posttest with a range of 83.3% to 100%. One question evaluated the ease of use of the protocol and revealed that participants felt it was "very easy" to use *(n=6)* and the others felt it was "extremely easy" to use *(n=4)*. Another question that evaluated comfort with making substitutions had a range of scores including "slightly comfortable" *(n=1),* with one person "moderately comfortable" *(n=2),* "very comfortable" *(n=5)* and "extremely comfortable" *(n=2)*. Additional phenomenological comments that were made on the open-ended response question regarding the appropriateness of using the protocol as a way to make substitutions in the pharmacy were: "yes", "cheat sheets are great", "it was great", "it helped a lot", "easy to navigate", "well organized", and that "it was important for the patient".

The data supports the purpose and aim of this study which was to help the registered nurses and other volunteers working in the pharmacy feel more comfortable making appropriate substitutions utilizing an approved protocol with limited antibiotic supply on a short-term

medical mission. The protocol was apparently easy to use and understand based on the feedback provided and the increase in scores from the pre to the posttest. The average improved by 63%.

Impact on Practice

Implementing this antibiotic protocol was effective in giving the volunteer pharmacy staff the means to make appropriate, clinically based substitutions in the pharmacy. The protocol proved an accurate, effective and easy way to make those changes, especially when inventory on antibiotics dwindled. There was also increased efficiency, as the protocol eliminated the need to contact providers to change antibiotics based on inventory. This allowed providers to continue to see patients and the pharmacy volunteers to provide the next antibiotic on the protocol. Many clinic days have 100-200 patients that need to be evaluated by a provider, so this increase in throughput could be significant and allow for even more patients to be evaluated in the future, and in a more efficient manner. Along with the throughput, patient satisfaction is an additional benefit as streamlined care is always a staff goal.

Additionally, the return on investment for this project was impactful. The cost of distributing the guideline within the pharmacy was minimal compared to the gains it provided for the pharmacy in proficiency, efficiency, and appropriate treatment. Secondarily, it experientially increased provider and patient satisfaction with the limited to no interruptions by pharmacy volunteers. It allowed for better patient throughput and potentially improved patient outcomes with appropriate second- and third-line therapies.

Conclusion

The medication substitution protocol project was successful in educating pharmacy staff and assuring appropriate treatment for the patients seen in the clinic. The cost of the project was

minimal, while the improvement in staff knowledge, confidence with substitutions, and ease of use with the guideline itself were significant.

Implications for further study might include rotating all volunteers through the pharmacy, to increase data collection. Another, aspect that could be further investigated would be expanding on other protocols, focusing on common gastrointestinal complaints, upper respiratory symptoms, and mental health complaints.