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Improving Patient Medication Reconciliation Participation and Compliance

Through Education

Maria Elena Herrera, BSN, RN

University of San Francisco, Fall 2015
Clinical Leadership Theme

Improving medication reconciliation compliance is a project that supports the American Association of Colleges of Nursing’s (2013) “Quality Improvement and Safety” competency. By empowering patients with knowledge about the importance of their medications and the medication reconciliation process, patients will be at a lesser risk for medication errors or adverse medication events. A Clinical Nurse Leader assesses their microsystem for areas that are lacking or need improvement based on evidence based practices. In my particular case, I found that medication reconciliation is always a vital part of appointments, but it is not constantly occurring; therefore, jeopardizing patient safety. Whether it is in healthcare setting or in our daily lives, safety is always a priority. In addition to safety, this project supports the QSEN Institute’s (2014) competencies of teamwork and collaboration as well as patient-centered care. Overall, this project increases patient safety, improves patient outcomes, empowers and promotes patient autonomy, fosters a provider-patient relationship, and encourages staff to exercise teamwork and collaboration.

Statement of the Problem

My clinical site is an outpatient specialty renal clinic where medication reconciliation is a critical part of patient visits. However, many patients do not bring their medications, resulting in incomplete appointments, delays, and the need to be rescheduled. It is important to acknowledge that patients with renal impairment have a greater risk of developing complications related to medication errors or adverse medication events. In addition, these patients each have different primary care doctors as well as other specialists, making it even more important to have accurate medication lists.
Inaccurate and incomplete medication lists can lead to medication errors and adverse events resulting in increased emergency room visits, additional hospitalizations, worsening renal impairment, or even death. A pre-implementation survey (see Appendix A) of the microsystem revealed that only approximately 38% of patients brought their medications to their appointment. However, approximately 62% of patients did not bring their medications to their appointment (see Appendix B). This project aims to increase medication reconciliation compliance and participation through education by increasing the percentage of patients who bring their medications to appointments from a mere 38% to at least 50% by December 2015. By increasing knowledge about the importance of medication reconciliation, patients will be empowered to make sound health decisions, which decreases the risk of medication errors and adverse events, and ultimately decreases emergency room visits and/or deaths. According to Qualityforum.org (2010): nationally, preventable medication errors occur in 3.8 million inpatient setting and 3.3 million outpatient; the Institute of Medicine estimates 7,000 deaths occur annually as a result of preventable medication errors; and savings of wasteful health costs on preventable medication errors are estimated at approximately $21 billion annually—$16.4 billion inpatient and $4.2 billion in the outpatient. Not only can lives be saved, but so could billions of healthcare dollars.

**Project Overview**

The project aims to improve patient participation and compliance with medication reconciliation at scheduled appointments through education and supportive measures. The project aligns with one of The Joint Commission’s 2015 Patient Safety Goals, which strives to improve the safety of medication usage (The Joint Commission, 2015, pg. 3).
Patient education is the driving force that will promote autonomy, increase knowledge, and foster clinician-patient relationships. Evidence shows that a collaborative approach can identify medication errors, educate patients, and compile an accurate medication list. This project does not aim to change any practices. It aims to reinforce the importance of patient education and its relationship with health outcomes. The project includes developing a take-home pamphlet that explains the importance of medications, the medication reconciliation process, and the importance of furnishing all medications to all appointments. It also includes creating a poster to be placed in the waiting room that will reinforce the learning material in the pamphlet, which will serve as a visual reminder of the importance of medication reconciliation. Another component of the project involves incorporating more written reminders such as on patients’ “end of visit summary” and their mailed appointment reminders. The project will require the involvement and collaboration of the front desk clerks, medical assistants, nurses, and other healthcare providers, fostering the concept of teamwork and collaboration to improve patient education.

Rationale

As healthcare providers, we must ensure the safety of our patients and ourselves. Given that the clinic only operates weekly (see Appendix C for patient flow), it is essential to make the most of each appointment because availability and time is limited. The big picture of my project is to keep this patient population with renal impairment from further progression of the disease process. Educating them about the importance of knowing and understanding their medications will help eliminate emergency room visits or deaths related to medication errors and adverse medication events. The Joint
Commission (2006) reported that their “sentinel event database includes more than 350 medication errors resulting in death or major injury. Of those, 63 percent related, at least in part, to breakdowns in communication, and approximately half of those would have been avoided through effective medication reconciliation.” Medication reconciliation will also help patients become more compliant with their medication regimen. One of the long term benefits of increased medication reconciliation compliance will be reduced admissions and readmissions related to medication inaccuracies. The microsystem provides care to a diverse patient population and in order to provide each patient with the best possible care and outcomes, it is essential to improve medication reconciliation compliance. By doing so:

- Medication errors will be identified and corrected, decreasing medication errors and adverse medication events;
- Patient knowledge will be assessed and education will be provided as needed, building patient-provider relationships;
- Medication regimen compliance will be reinforced;
- Patient autonomy and involvement in plan of care will be increased; and
- In the long run, patients will have fewer admissions and readmissions related to medication inaccuracy.

Assessing and analyzing the root causes and barriers to medication reconciliation (Appendix D) bring to light to how to begin solving the problem. There are three main factors that need to be addressed: patient knowledge, staff involvement, and time. A SWOT analysis (Appendix E) reveals the project’s strengths, weakness, opportunities, and threats. One of the greatest strengths of the project is that it improves patient safety.
and promotes patient autonomy. To further explore the project, a Stakeholders Map (Appendix F) was created to show the importance patients hold as well as the vital position of the staff.

**Methodology**

As the healthcare field always changing, so too must we. We can no longer fear change, accepting the status quo simply because we feel comfortable with it. Patients and their needs have become more complex, the technologies we utilize have modernized, and we need to adapt our thoughts and actions in order to provide our diverse patients with competent care targeting the best health outcomes. The change theory that helped develop my project is Quinn’s Theory. This theory best fits the current culture of my microsystem, which tends to function on “this is the way things have always been done” or “let us just get through the day.” Following Quinn’s Theory, it indicates that my microsystem will experience a slow death because 1.) The staff thinks things will not change, and 2.) They are burnt-out as they see a high volume of patients. I understand that resources and funding are limited, but the cost-benefit of change can outweigh costs both qualitatively and quantitatively. Following this theory, I plan to focus on the power the staff holds to create and be part of change and breaking the myth that change is expensive. With this theory, the project aims to foster teamwork and collaboration as it was previously more focused on the patient aspect and somewhat excluded the staff angle.

When thinking about implementing any project (Appendix G), having a positive attitude makes a difference. There are essentially three interventions to implement—a pamphlet, a poster, and enhanced reminders. A take home pamphlet, which will show the
significance of medication reconciliation and therefore the importance of bringing their medications to appointments—even over the counter meds and herbal remedies. Having an educational pamphlet, I plan on approaching patients in the waiting room where they can wait up to two hours for their appointment. I will review the key points and ask if they have any questions. During this time, I will also take note of their responses and reactions, which I will use to make necessary adjustments. In addition to the take home pamphlets, I plan to create a larger visual poster to post in the waiting room. The poster will reinforce the teaching in the pamphlet and also serve as a visual reminder. The next step will be working with the front desk personnel to incorporate new wording on the reminder letters that are mailed to their homes. Also, when patients receive their “summary of care” and next appointment date, I plan to have fluorescent labels to stick on the paper that says, “Please bring all medications to your appointment.” Also during this stage, I will work with the medical assistants to verbally remind patients to bring their medications when they call with appointment reminders. In order to know whether the interventions are successful or not, I will survey patients to see how many bring their medications to appointments and compare it to the pre-implementation survey results.

Data Source-Literature Review

The main source of data came from the patients themselves. The data was retrieved from assisting with nurse visits and surveying patients. The data comes from patients whom the project intends to benefit the most.

For my project, the PICO I used was the following:

P-Renal patients do not bring medications to appointments

I-Increase patient education about medication reconciliation
In order to find the most reliable and up to date information, I utilized USF’s Gleeson Library databases. I searched by subject, where I used: Nursing and Health Sciences. I proceeded to use CINAHL Complete database. With a database such as CINHAL Complete, it is important to screen the literature, but I know that the literature here is dependable and valuable for an evidence based project. I did limit my searches. I limited my search to the years 2010 to 2015 to ensure that I had the latest data and most current information available. The other limitation I used was “full-text” only. This way I was sure that the articles and material I found would be complete and I would be able to access them directly and instantaneously. The most difficult part of my search is that when I used the term “renal” it kept defaulting to hemodialysis patients. Therefore, the information I found was generalized, thereby relating to the larger themes of medication reconciliation importance, medication errors, and patient education. There was not any information that directly related to my project statement, so I had to search using a key phrase and use the “AND” option to link the other phrase. For example, I used “medication reconciliation” AND “patient education.” I found the abstracts to be quite advantageous when trying to find out what the information pertained to. The hardest part was that I did not get any results that directly matched my PICO.

The literature I found supports the importance of medication reconciliation process. The article by Adhikari, Tocher, Smith, Corcoran, & MacArthur (2014) acknowledges that medication reconciliation is a complex process that requires the participation of multidisciplinary team members. The purpose of medication
reconciliation is keeping patients safe and all team members play a pivotal role in doing so. The article by Soares, Jacobs, Laugaland, Aase, & Barach (2012) states that patients in transitional care are vulnerable and polypharmacy increases the risk for a medication discrepancy. The best approach is multidisciplinary. Articles states, “Educational efforts that strengthen patient self-management have been proven effective” (p. 2921).

Checklists have been shown to aide in medication reconciliation processes. An article by Walker (2012) visits the idea that medication reconciliation can reduce readmission rates. A program named Dovetail keeps patients in constant communication with pharmacists care manager. On average, ninety percent of patients enrolled in the program do not have a readmission within 30 days of discharge. Medication reconciliation (management) has the potential to keep patients from being (re)admitted. Many patients with renal function impairment find themselves in and out of hospitals. An article by McLeod (2014) acknowledges the vulnerability of patients when transferring between care settings.

Communication is a vital part of a patient’s outcome. Giving patients access to their health record can bridge gaps. Even follow up phone calls can make a difference.

Working with a diverse population also means there are various barriers. Kennelty, Chewning, Wise, Kind, Roberts, & Kreling (2015) investigate the barriers patients may face with medication reconciliation upon transitioning from an inpatient setting to an outpatient setting. A disadvantage to medication reconciliation is that it is too time consuming. There is an overall lack of education, which can lead to medication errors. To further study barriers, Hume and Tomsik (2014) acknowledges the barriers patients and staff are faced with such a literacy problems, tight budgets, and short staffing. Their article also states that education is a two way street. One must assess the specific needs of
the patients. A collaborative and standardized approach will yield the best outcomes. Identifying barriers specific to my microsystem will allow for a more tailored approach. Generally, the literature supports a teamwork and collaborative approach to medication reconciliation. It also acknowledges that complete and accurate medication reconciliation can reduce hospitalizations. It does however acknowledge that the process itself is time consuming, but the benefits definitely outweigh the downfall.

**Timeline**

The project timeline runs from August 2015-December 2015, with six phases (see Appendix G). As with most nursing, the first step is assessing the microsystem. This part of the project is an ongoing process that will continuously guide the overall project. The second part includes developing and completing the pre-implementation survey. The results from the survey will guide the aim of the project as well as the interventions and goals. The third portion includes developing and fine-tuning the education material that will be utilized. Once the material is finalized, approved, and printed, then the project interventions will be implemented. After the implementation, a post-survey will be taken to determine whether the interventions have been effective or if they have been unsuccessful. Once the results are analyzed, the project will be re-evaluated and changes will be made accordingly.

**Expected Results**

As with any improvement project, the expected results are beneficial to all involved. In this particular case, the optimal goal is to empower patients with knowledge about the importance of medications and the medication reconciliation process in their disease process.
By executing this project, I expect to:

- Increase the number of patients that bring their medication to appointments
- Have complete and accurate medication reconciliations
- Decrease the delays and having to reschedule appointments
- Improve patient knowledge about medications
- Improve patient autonomy and
- Improve patient and staff relationships

It is important to work on this now because:

- It will help decrease medication errors
- We can find and eliminate renal toxic medications
- We can improve medication compliance
- It will help eliminate incomplete medication reconciliation
- It can decrease admissions and ER visits related to medication inaccuracies
- There are little to no costs related to the implementation of the project

As for potential problems that may arise, I plan to acknowledge and address them as opposed to simply dismissing them. A potential problem I expect is that patient education material will need to be available in various languages. With this in mind, I hope to obtain help from staff members to help translate as they have previously done with Ebola Screening material for the clinic. Other potential problems are: complete patient refusal to participate as well as low staff buy-in. If such is the case, I plan to assess the root cause of the refusal without disregarding patients’ rights. I also plan to
educate patients and staff about the benefits of medication reconciliation compliance and participation.

**Nursing Relevance**

Improving a process that affects patient safety is what the nursing profession is all about. We must challenge the status quo to maintain the safety of our patients as well as our own. Just as nurses perform hand washing techniques to keep patients safe from cross contamination and infections, so too must we teach patients about using medications safely. The patients in my microsystem are at a higher risk for developing complications for medications, medication errors, and adverse medication events due to their impaired renal function. Empowering them and their family with knowledge to better care for themselves and make informed decisions is relevant to safety and patient centered care—all of which are fundamental ideals of the nursing profession. The project may appear simple and minimal, but it has the potential to create change. Sometimes in nursing, we have to go back to the basics and fundamentals such as safety and patient-centered care. This project has the potential to better ensure the safety of patients, promote their autonomy and empower them to make informed decisions, develop and foster relationships between providers and patients, and generate communication, ultimately reducing the risk of medication errors and adverse events which will reduce emergency rooms visits or deaths. As Florence Nightingale herself said, “So never lose an opportunity of urging a practical beginning, however small, for it is wonderful how often in such matters the mustard-seed germinates and roots itself.”

**Summary Report**
The project idea was inspired by a personal experience. Two years ago, my husband donated a kidney to his uncle. It was clear that his uncle was overwhelmed by the whole idea of kidney disease, high blood pressure, type 2 diabetes, dialysis, kidney transplant, immunosuppressant medications and complications, dietary changes—all of which are truly life changing. When assessing my own microsystem and its patient population, it was clear that even though the patients were each unique, they all shared a similarity: they lacked education about their medications and the importance of the medication reconciliation process.

The project theme is quality improvement and patient safety. Where the aim of my project is to improve medication reconciliation compliance and medication knowledge through patient education to empower them to make informed decisions and reduce potential medication errors and adverse events, ultimately reducing emergency room visits, admissions, and deaths. The microsystem is an outpatient clinic, specializing in patients with renal impairment, in the heart of San Francisco, a diverse and vibrant city just like the patients. Many of the patients see multiple providers and have multiple comorbidities, making for a complex health situation. After a pre-implementation survey, it was clear that 62% of patients were not bringing their medications to appointments, making patients susceptible to a plethora of risks such as: potential medication errors, incomplete appointments, needing to be rescheduled, progression of their disease process, and the inability to make informed decisions about their health.

The project was developed by using various assessment tools, starting with a pre-implementation survey, which revealed that only 38% of patients participated in the medication reconciliation process at appointments (Appendix B). A patient flow map was
created to pinpoint areas of forte as well as areas that need improvement (Appendix C). A fishbone diagram was utilized to identify the causes and effects of potential problems (Appendix D). A SWOT analysis was created to show the strengths, weaknesses, opportunities and threats to the project (Appendix E). An analysis of stakeholders was created to map who would be affected by the project and who could affect the project (Appendix F). Lastly, a Gnatt Timeline was crafted to give a visual cue to guide the progression of the project and keep it on schedule (Appendix G). The goal for the clinic was to improve medication reconciliation compliance from 38% to 50% by December 2015 with the use of a take-home educational pamphlet and placement of a visual poster in the waiting room (Appendix H).

Although the project did not meet its goal of increasing patient participation in medication reconciliation from 38% to 50% by December 2015, I am pleased with results of the project thus far. A post-implementation survey similar to the pre-implementation (Appendix A) was taken and yielded the results. The project still needs more work, but results show that after implementing the project patients that brought their medications to appointments increased from 38% to 40% (Appendix I). After evaluating the results, more work and time needs to be dedicated to one on one teaching with patients. The progression of the project was hindered by time factors. One factor is the ending of the semester. Another time factor was the closing of the clinic for a physicians’ conference as well as closure of the clinic in observance of local holidays. A future opportunity to explore and develop is the changing of appointment reminder letters to include the text: Please bring all medications to appointment. Another aspect that needs further
development is the translating of the pamphlet into different languages, which will support the clinic’s goals of providing culturally competent care.

The sustainability of my project emerges from its relation to a fundamental principle of nursing: patient-centered care. Patients are the center of our focus. We are always striving to make improvements that will positively impact the health outcomes of patients. My project goal is to empower patients to learn more about the importance of their medications and the medication reconciliation process so that they will be more knowledgeable to make informed decisions about their health. Patients will have the most benefit of the project. However, the entire healthcare system will also benefit as the project has the potential improve medication administration safety and reduce medication errors. This goal supports the Joint Commission’s 2015 National Patient Safety Goal #3 “Improve the safety of using medications” (The Joint Commission, 2015, pg. 3). The low cost of the project is another aspect that will help ensure its sustainability. Overall, the project aligns with the hospital’s mission of improving quality of care. The project has the potential to be standardized after a few more adjustments. Currently, the project was introduced to a different unit of the hospital, so I hope that it can be standardized.

**Conclusion**

This project has been as much as a learning experience for me as it has been for the patients. I have learned more about the importance of perseverance, patient advocacy, culturally competent care, evidence based practices, and the overall benefits of change related to nursing in a microsystem. Through this project and the courses related, I have gained a new perspective, exploring how nursing can extend beyond theoretical beside care all the way to changing practical policy changes. I am truly grateful for my clinical
site, instructors, and family. In the words of the wise Mahatma Gandhi, we *can* “be the change [we] want to see in the world.”
Reference:


Appendix A

Sample of Pre-implementation Survey & Post-Implementation Survey:

Thank you for your participation!

* Did you bring your medication today? Please circle YES NO

*If NO, which would best describe the reason: Please circle

FORGOT TOO MANY TO CARRY DON'T THINK IT IS IMPORTANT

OR Other (please specify): ________________________________
Appendix B

Graph of Pre-Implementation Survey Results:

![Bar Graph]

- Yes, brought medications: 38%
- No, did not bring medications: 62%
Appendix C

Chart of Patient Flow:
Appendix D

Root Cause Analysis (Fishbone) Diagram:

CAUSES OF LOW MEDICATION RECONCILIATION COMPLIANCE AND PARTICIPATION

PATIENT KNOWLEDGE DEFICIT

Diverse education levels
Mixture of new & old patients
No time for education

STAFF

More patients than staff
Staff comfortable with status quo

TIME

Wasted time in Waiting Room
Short appointment times
Need more reminders

Low medication reconciliation compliance & participation
Appendix E

Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis for: Improving Medication Reconciliation Compliance

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• identifying and avoiding potential medication errors;</td>
<td>• this project can expand and be used in the other clinics such as cardiac, rheumatology, pain, etc.</td>
</tr>
<tr>
<td>• little or no financial input needed;</td>
<td>• this is an opportunity to assess patient knowledge and educate them as needed</td>
</tr>
<tr>
<td>• it improves patient autonomy;</td>
<td>• increase staff teamwork and collaboration</td>
</tr>
<tr>
<td>• it improves teamwork and collaboration; and</td>
<td></td>
</tr>
<tr>
<td>• it improves provider and patient relationships</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• identifying and addressing the various barriers that keep patients from bringing medication to appointments;</td>
<td>• patients may refuse to participate in medication reconciliation</td>
</tr>
<tr>
<td>• immediate benefits of project may not be apparent;</td>
<td>• providers may dismiss the importance of bringing all medications and may not support the project</td>
</tr>
<tr>
<td>• not all staff may buy-in; and</td>
<td>• clinic budget may not include colored printing of education material</td>
</tr>
<tr>
<td>• will need to have education material in various languages</td>
<td></td>
</tr>
</tbody>
</table>
### Stakeholders of Ward 92 Analysis:

#### Power / Interest Grid for Stakeholder Analysis

<table>
<thead>
<tr>
<th>Power</th>
<th>Interest</th>
<th>Keep Satisfied</th>
<th>Manage Closely</th>
<th>Monitor (Minimum Effort)</th>
<th>Keep Informed</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>High</td>
<td>Patients &amp; Family</td>
<td>Front desk staff</td>
<td>Tax payers</td>
<td>Clinic Manager</td>
</tr>
<tr>
<td>High</td>
<td>Lo</td>
<td>Nurses &amp; healthcare providers</td>
<td>Medical Assistants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lo</td>
<td>High</td>
<td>Keep Informed</td>
<td></td>
<td>Keep Informed</td>
<td></td>
</tr>
<tr>
<td>Lo</td>
<td>Lo</td>
<td>Manage Closely</td>
<td></td>
<td>Monitor (Minimum Effort)</td>
<td></td>
</tr>
</tbody>
</table>

**Power**
- Patients & Family
- Nurses & healthcare providers

**Interest**
- Tax payers
- Clinic Manager
Appendix G

Gnatt Project Timeline:
Did You Know?

- Over the counter medications, certain foods, vitamins, and supplements can interact with your prescribed medications.
- Herbs and herbal teas can affect how your prescribed medications are processed by your body.
- Some medications have similar names & look the same, but different purposes.
- Tell your provider about any allergies you may have.
- Most medication errors can be avoided and you can help prevent them!

**LET'S HAVE A CONVERSATION ABOUT YOUR MEDICATION!**

Remember:

- Bring all your medications to your appointments.
- Keep an updated list of all your medications.
- ALWAYS talk to your healthcare provider to learn about & explain medications—purpose, dose, frequency, side effects.

BRING ALL YOUR MEDICATIONS TO ALL APPOINTMENTS

SFGH Ward 92
Maria Elena Herrera, BSN, RN
USP CNL Student, Fall 2013
WHY Bring Your Medications?

Reviewing your medications is an important part of your overall plan of care.

By reviewing ALL your medications, we can make sure you are taking the right medication and the right dosage (amount).
We can also find any inconsistencies and problems.

LET'S HAVE A CONVERSATION ABOUT YOUR MEDICATION!

Bring ALL Medications to ALL Appointments

5 Things to Know About Your Medications:
1. What medication am I taking?
2. Why am I taking it?
3. How & when do I take it?
4. Does it have any side effects?
5. Does it have any food or alcohol interactions?

- Bringing all your medications to all appointments helps identify errors
- Over the counter medications, foods, vitamins, supplements, and herbs can affect your medication
- Some medications sound alike & look alike, BUT have different purposes
- Your age & certain conditions affect how your body breakdowns medications
- Check the expiration date
- Never share medications and...

ALWAYS talk to your healthcare provider if you have ANY question or concern!
Appendix I

Post-Implementation Survey Results:

**POST-Implementation Survey Results**

<table>
<thead>
<tr>
<th></th>
<th>YES, brought medications</th>
<th>NO, did not bring medications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Implementation</strong></td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td><strong>Post-Implementation</strong></td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>

Diagram showing the percentage of patients who brought medications before and after implementation.