Transitioning OPAT (Outpatient Antibiotic Therapy) patients from the Acute Care Setting to the Ambulatory Setting

American College of Medical Practice Executives
Case Study

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Statement of the problem

The Medical Director of an Infectious Disease Specialty Practice, part of a large healthcare system, located in Southwest Florida, identified that when patients were being admitted to the hospital for an infectious disease diagnosis, they were frequently getting placed on OPAT (Outpatient Antibiotic Therapy) for an extended period of time. Usually, the patients are ambulatory, meaning they can continue to manage day to day functions, and do not require a long admission stay to receive this form of treatment. In these circumstances they are either: discharged to a SNF (Skilled Nursing Facility), sent to an outpatient infusion center for the administration of the antibiotics or home with home health care. The criteria for determination are usually insurance driven or patient preference. In some instances the treating provider may request where the patient receives the outpatient therapy. This case study seeks to explore the state of an Infectious Disease Practice, as part of this large healthcare system in Florida, who chose to implement a workflow process to transition OPAT patients from the acute care setting to the ambulatory care setting while providing the best in patient care and safety.

The problem identified was once these patients were discharged from the hospital, many were getting lost in the transition from inpatient to outpatient. There was no clear communication between the hospital discharge staff and the outpatient treating providers as to when and where these patients were being discharged and how the treatment would continue. Patients were leaving the hospital setting with no instruction as to how they would continue to receive the antibiotics, when to follow up with the treating provider or in some cases which home health agency would be used and how the process would work. Patients were often times confused and misguided. OPAT can be very dangerous to the patient if not followed closely. Lab draws must be done on an ongoing basis during the course of treatment to make sure the antibiotics are not harming the patient. The patients on therapy need to be monitored
daily for any signs of infection at the PICC (Peripherally Inserted Central Catheter) line site, used for the administration of the antibiotics, or changes in symptoms.

The Infectious Disease Medical Director realized a workflow process needed to be put in place to increase the lines of communication during this transition between the acute care staff, ambulatory staff, patients and providers. The current process provided no standardization. The ambulatory staff were spending many hours tracking patients once discharged, establishing where labs were being drawn, and who was following the patients care. Patient safety and the quality of care the patients were receiving was a real concern.

These never ending problems throughout the infectious disease practice and the organization were unacceptable and therefore further workflow analysis and research into alternatives was initiated.

**Alternative Decisions Considered**

In order to resolve the issues described previously, the Infectious Disease Medical Director met with the practice manager and the RN for the practice to investigate three basic solutions: continue with the current process and not make any changes, notify the practice of every patient admission with an infectious disease diagnosis, or create a workflow process to seamlessly transition patients from acute care to ambulatory care for OPAT therapy.
Continue the current practice

The first option considered was to continue with the current process. The patients would continue to be admitted and discharged on OPAT therapy with no clear discharge instructions and plan of therapy. Providers would not have prior knowledge to patient discharge and how the patient would continue to receive the OPAT. Communication between the acute care staff and the ambulatory staff would be lacking, or inconsistent. Maintaining this process would be the path of least resistance and would not require any education or training for the staff. However, it would also continue inefficient and unsafe practices, leaving the issue unresolved. Without a resolution, patients, staff and provider satisfaction would continue to decrease and patients could potentially get lost in the community, which could jeopardize patient safety and quality of care.

The Infectious Disease Practice would be notified for every patient admission with an infectious disease diagnosis

The next alternative considered was to have the infectious disease practice be notified of all patient admissions with an infectious disease diagnosis. This idea seemed potentially successful because it would increase consult revenue for the practice and patients would be started on OPAT therapy sooner than expected. This process would allow for increased communication with the acute care and ambulatory care staff and patients would feel satisfied with the increased care. However, if the practice decided to go with this process, the volumes to the practice would be overwhelming, which would suggest that additional staffing may be required to maintain the large influx of calls and in many admissions the patient may not need OPAT therapy as the method of treatment for the diagnosis. It was also decided that this would not be an effective way to prevent patients from being discharged
without a proper plan of treatment in place. Therefore, after careful consideration, it was determined that this process was not in the best interest of the practice group or the patient.

**Develop an Ideal State Workflow Process for Inpatient/Outpatient Transition**

The last option researched was creating an ideal state workflow process to maintain patient safety, improve continuum of care and increase quality of care between the acute care and ambulatory care staff. With this process, the patients would have an appropriate treatment plan in place prior to discharge to avoid confusion. The patient, staff and provider overall satisfaction would improve. There would be increased patient safety and quality of care because patients would be less likely to get lost during the transition. There would be increased communication between the treating providers and other clinicians involved in the patients care. Lastly, productivity within the department would increase because staff would no longer spend many hours tracking patients in the community. Providing this standardized work practice, with consistent measures and accountabilities throughout the organization, could also help with the process of moving toward a lean transformation.

**Recommendations and Protocols to select the solution**

The first step in the process was to create a PDCA (Plan, Do, Check, Act) which is a four-step management method used in business for the control and continuous improvement of processes and products. The four steps include: the desired outcome, the current situation, the recommendations to improve the process and the implementation plan. Next, the practice RN, with the help of the hospital case managers, comprised a contact list. This list consisted of hospital case managers, infectious disease office staff and providers. The practice manager and the office RN met with hospital administrators and
staff to open the lines of communication between the acute care facilities and the ambulatory practice.

A committee of infectious disease providers, hospital staff, administrators and forms management staff, for the organization, created a form designated to OPAT only. The purpose of the form is to provide consistent written communication of the plan of treatment that can be followed between all the treating providers and clinicians.

Once the patient is admitted to the hospital and an infectious disease consult is initiated, the determination process begins as to whether the patient will be started on OPAT. Some of the determining factors are: the severity of the infection, the duration of treatment, the patients’ health insurance coverage benefits, the transportation needs for daily treatment, whether the home environment is adequate, and most important, if the patient will be compliant.

OPAT is the best plan of treatment for patients with complicated and often serious infections, but some patients are not good candidates for this type of therapy. It is very important that the treating provider look at the patient history very closely to determine if OPAT is appropriate. Healthcare systems and providers often face challenges with patients that are not qualified candidates. Some reasons for this are: patients non-compliance with the daily medication administration, not getting labs ordered done timely or at all, disappearing in the community upon discharge, and in some cases the patient has a drug and/or substance abuse problem and may misuse the PICC line while on therapy.

Once it is determined that a patient qualifies for OPAT, they are scheduled to get a PICC line placed to begin the treatment. The first dose of antibiotics must be given in a supervised clinical setting to make sure the patient does not have any complications. The OPAT form is then completed by the hospital staff or treating provider and faxed to the infectious disease office with the orders for treatment. The information included on the form is the patient name and DOB, the diagnosis, the IV (intravenous) medications the patient is being treated with, the dosage amount, the start and end date of treatment,
when and how often the labs are to be drawn and where the patient will be receiving the daily medication administration: whether it is at a SNF, an outpatient infusion center or at the patients home with home health care.

Once the form is received in the office, the office designee, usually the RN for the infectious disease practice, logs the patient information in an IV infusion book. The patient is then added to the master patient list created in the EMR system. This particular health care system chose EPIC as the program. Throughout the course of treatment, which can last a few days or up to two or more months depending on the diagnosis and severity of the infection, the RN, or designee, will review each patients orders, track labs, schedule outpatient appointments for follow up and communicate with the patient to make sure they are not having any complications that need to be addressed. For example, antibiotics are known to be very harsh on the body, especially the organs such as the kidneys and the liver. It is critical that labs are completed on an ongoing basis during treatment and even for a short time after treatment, to make sure the medications are not doing harm to the patient. Another example of a complication patients may experience is kidney failure if there is inconsistent monitoring of their labs during treatment. Therefore, constant monitoring is a must.

Once the patient is closer to the end of therapy another follow up appointment, with the infectious disease office, is scheduled to determine if the patient can end treatment or if therapy should be extended for an additional period of time. This usually is determined by the treating provider. If it is determined to end therapy, either the provider or the RN will remove the PICC line in the office, or orders can be written to have the PICC line removed elsewhere, usually in a radiology department. If the patient is receiving treatment through a SNF or home health agency, the provider will right orders that therapy has ended and the facility or home health agency can remove the PICC line. If it is decided
therapy should be extended, new orders will be added to the OPAT form and distributed to all the
treating providers and/or facilities.

**Decision**

The Infectious Disease Medical Director, along with the practice manager, RN and hospital
administrators reviewed the main points of each proposal regarding the OPAT transition process from
inpatient to outpatient. The decision made would be based on how each solution would impact the
overall workflow, the volumes, the cost involved and what resources were necessary to implement each
proposal. They selected the process of developing an ideal workflow process to transition patients from
acute care to ambulatory care for OPAT therapy. This workflow would provide a clearly defined plan of
treatment before discharge, increase patient safety and quality of care, improve patient and provider
satisfaction, improve communication and establish standard work for future admissions.

**Implementation**

The practice manager and the clinical RN had ongoing meetings with the Infectious Disease Medical
Director and some administrative staff to decide the timeline and go live date. Next, the group met with
the other infectious disease providers in the practice for approval and move forward. The committee
met to discuss the standard work process and establish the workflow protocols.

Once the OPAT form was approved, by the risk management department of the healthcare organization
and available for distribution from the forms management staff, the RN for the infectious disease
practice group met once more with the acute care case managers to make sure the form was accessible
in each department and then instruction was provided on how to utilize the form.
The final step in the implementation process needed to be communication to all the hospital administrators and staff. A memo was generated and distributed to each hospital campus with specific instruction of the workflow process.

Initially, there was some resistance from hospital staff, but soon after implementation, it was realized that this process, while more work up front, was actually a better solution to provide improved outcomes for the patients, providers and staff.

**Conclusion**

OPAT is now a standard part of medical practice in this healthcare organization. Other OPAT practices are also widely used throughout North America. However, it is not without risk and responsibilities, especially for the provider who must provide quality of care as good as the care the patient would be given if they remained in the hospital. It is also a method of delivery of medications that require the expertise of and close coordination of services from providers, nurses, pharmacists, and others.

A big component of a successful OPAT implementation workflow process is being able to transition patients from the acute care setting to an ambulatory care setting while ensuring patient safety, quality of care and good outcome measures. This aforementioned healthcare system’s Medical Director of Infectious Disease recognized the inconsistencies with the transition of care and quickly realized a new workflow process was needed in order to maintain good quality of care and provider, staff and patient satisfaction. The standard OPAT transition of care workflow process that was rolled out to all the hospital campuses and the infectious disease practice has helped to reduce patients being discharged with no plan of treatment, getting lost in the community, and delays in the therapy.
At this time, this process has been in place for a while and the practice group has added an additional RN to help with the amount of patients being discharged on OPAT. While the workflow is not perfect, and occasionally there has been be a slight setback, it has proven to provide expedited, improved patient care and satisfaction. Another substantial benefit has been avoiding unnecessary hospital length of stay for patients who are good candidates for OPAT, providing a benefit to the healthcare system and the patient. In order to continue to maintain this new process and see that it is adhered to, education will be ongoing for newly hired staff in the hospital setting and in the practice group.
# OUTPATIENT ADULT IV ANTIBIOTIC INFUSION ORDERS

**DATE** | **TIME** | **DIAGNOSIS:**
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**ALLERGIES** *(Include Medication, Food, Iodine, Seafood, Metal, Jewelry)*:

**WEIGHT:** | **HEIGHT:**
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1. **MEDICATIONS:**
   - Cefazolin (Ancef) _______ IV every _______ hours  
     Start Date: _______ Stop Date: _______
   - Vancomycin - Pharmacy to dose  
     Start Date: _______ Stop Date: _______
   - Ceftriaxone (Rocephin) _______ IV every _______ hours  
     Start Date: _______ Stop Date: _______
   - Cefepime (Maxipime) _______ IV every _______ hours  
     Start Date: _______ Stop Date: _______
   - Daptomycin (Cubicin) _______ mg/kg IV every _______ hours  
     Start Date: _______ Stop Date: _______
   - Ertapenem (Invanz) _______ IV every _______ hours  
     Start Date: _______ Stop Date: _______
   - Meropenem (Merrem) _______ IV every _______ hours  
     Start Date: _______ Stop Date: _______
   - Zosyn (Piperacillin/Tazobactam) _______ IV every _______ hours  
     Start Date: _______ Stop Date: _______
   - Activase (Cathflow) 2 mg IV Push PRN for Central Line Maintenance. May repeat x 1.  
     Start Date: _______ Stop Date: _______

2. **TREATMENTS:**
   - PICC / CVC / Peripheral line dressing to be changed and flushed with 10 cc saline as per LMHS policy.

3. **LABS:**

   | Collection Date | Collection Date |
--- | --- | ---
CBC with differential weekly  
CMP weekly  
BMP weekly  
Sed Rate weekly  
CRP weekly  
PT / INR weekly  
Serum Creatinine weekly  
CPK weekly  
Other Labs:

--- Fax Results to: 

4. **Patient discharged to:**
   - Outpatient  
   - Home Health  
   - Skilled Nursing Facility  
   - Other: ____________________________
   - Name of facility: ____________________________

5. **Call Physician at** _______ for abnormal labs, fever 101°F or greater, generalized rash, significant diarrhea, erythema or purulent discharge at line site or line dysfunction or signs of possible reaction.

6. **Additional Orders:**

   *Follow-up with Dr.: ____________________________ in ____________________________ days / weeks.*

**Physician Signature:** ____________________________  
**Physician Printed Name:** ____________________________  
**Date:** _______  
**Time:** _______

**PHYSICIANS ORDERS**

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**Patient Name:** ____________________________

**Date of Birth:** ____________________________

**Age:** ____________________________

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