**Title: Effective Communication Between Inter-Departments Providers in Creating a New Hospital Specialty Service**

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## Introduction

Therapeutic plasmapheresis refers to the removal and replacement of plasma protein via an exchange process in patients with various ailments. Plasmapheresis is a subdivision of aphaeresis, a form of exchange of any of the blood components. The procedure is almost similar to dialysis and is typically performed by dialysis treatment. The use of plasmapheresis in various illnesses is debatable. This is because majority of times immunoglobulin production in many of these diseases can be suppressed with high dose immunosuppression rather than the removal of these plasma proteins from the intravascular system. However, majority of school of thoughts preferred plasmapheresis as an adjunct to systemic immunosuppression as this provides a faster removal of these problematic immunoglobulins or plasma proteins as well as reduces the dose of immunosuppression needed to stop further dysfunctional immunoglobulin production.

Since the 1940s, plasmapheresis has been widely used as an adjuvant therapy for various vasculitis process especially in the presence of any form of pulmonary-renal syndrome. In some neurological conditions such as exacerbation of Myasthenia gravis or Guillain-Barre syndrome (GBS) affecting the respiratory system, the use of plasmapheresis can potentially be life-saving. Majority of the patients presenting with myasthenia gravis or exacerbation of GB syndrome, typically require ventilation due to compromised respiratory airways and as such, early use of plasmapheresis can be life-saving. Apart from its use in the acute life-threatening cases or as a sequelae therapy, maintenance plasmapheresis is typically needed daily or every other day for up to 7 treatments meaning patients will need treatment for up to 14 days and then possibly weekly for months for the full course of the treatment.

Given the unique population of our patients in this area, there is a high prevalence of end-stage renal disease patients requiring intermittent hemodialysis and with the hospital dialysis unit currently functioning at a higher than normal capacity for care of dialysis patients, the hospital dialysis staff have been unable to train and provide the procedure of plasmapheresis when needed in this area. In our community, many patients presenting with vasculitis-related conditions or having conditions that would have benefited from plasmapheresis like Thrombotic thrombocytopenic purpura (ITP) or even other neurological cases like myasthenia gravis do not have these procedures available while at the hospital.

Regional medical hospital is an institution located in Rapid City, the east side of South Dakota. Rapid City has a population of 75,000 people. The other two cities to the West is Denver in the

state of Colorado and to the East is Sioux Falls, the second and most populous major city in South Dakota. However, the distance between Rapid City to either of these places is over 400 miles one way. Due to our unique location, most patients requiring plasmapheresis have to be transported approximately 5 hours to another institution which offers the service. Majority of these patients typically have problems finding accommodation in order to receive plasmapheresis on alternate days at this location and in many instances, they prefer not to be transferred but rather to have high dose immunosuppression which typically predisposes them to opportunistic infections such as pneumonia

In this write-up, we explore the use of a method of communication in creating a new medical service that spans across different departments in a tertiary hospital.

## Problems Encountered When Initiating Plasmapheresis

1. Lack of adequate TPE trained dialysis nursing staff

## Objectives

1. Aim to convince the hospital administrative executive to recruit more dialysis staff
2. Create a training program for the newly recruited staff to learn the plasmapheresis procedure
3. If unsuccessful, pursue the recruitment of trained plasmapheresis nursing staff to be employed

## Methodology

Since joining the hospital staff in October 2016 and seeing recurrent cases of opportunistic infections plaguing patients on high-dose immunosuppression that would otherwise have benefited from adjuvant plasmapheresis, I embarked on a journey to find ways of providing plasmapheresis service at the hospital so that the patients can be treated locally and in a timely manner to minimize complications. Given the unique location of the hospital and socio-economic factors, there have been low retention rates of nursing staff and medical providers in this underserved region. This has resulted unfortunately in a failure of previous multiple attempts to provide the service in the past.

Using our hospital as a model where the nephrology/dialysis unit has been having a high turnover of nurses and has been relying on the use of locum tenens nurses to carry out even basic dialysis procedures for the large numbers of end-stage renal disease patients, we proceeded to seek out ways to ensure to reach out to other hospital divisions to attain our goal of providing this new dialysis related service.

*Initial step*

Our initial step was to request hospital administration to provide incentives to entice dialysis nurses to extend their contracts, thereby increasing the number of permanent nursing staff that could be trained to do plasmapheresis. However, after extensive discussions with the hospital administration, there was an objection as it was felt that providing higher than average incentive would not be feasible based on the current salary rate for all the nursing staff in the hospital and owing to various other ethical issues and this has been the problem over the last several years that continue to affect the availability of permanent nurses in the dialysis unit. We will also be faced with the issue of how to get at least 2 employed plasmapheresis trained nurses since there was a general shortage of nurses willing to come to the area.

*Do your homework- "communication is most effective when you have an overall view of all the possible benefits, options or alternatives that will affect the outcome on the specific topic you are interested"*

1. Look at overall broad picture of the organization

While looking at the overall broad picture of the hospital, we realized in the inpatient unit, a procedure called continuous renal replacement therapy (CRRT]- a process analogous to slow dialysis is typically done in the intensive care unit and performed by the critical care trained nurses. On further examination, we noted that the actual CRRT machine had been modified by Gambro/Baxter Inc. (Primaflex machine) to be able to perform plasmapheresis in their newer model with only a slight change in the technique steps. We then reached out to the Baxter device manufacturers to inquire about the training process and timeline for learning how to use the machine.

*2. Since there was a shortage in one department, can another department performing a close enough procedural function be trained to take over some functions of the short- staffed department?*

*Listening and communicating with the staff on how the service can be introduced*

This time we reached out to the intensive care nursing administration to determine the feasibility of performing plasmapheresis in the ICU by the intensive care nursing staff. We were however informed that they would not be able to perform the procedure as that would server to increase the workload of the ICU staff.

2. Approaching all possible staff needed for the service

*If one department will not take over the function of another short-staffed department, seek a third one*

Since the option of transitioning plasmapheresis to the ICU staff was futile and realizing that albumin infusion as well as other component of blood transfusion is being done typically in the outpatient infusion service of the hospital by the infusion nurses, we decided to speak with the infusion therapy department to see if they would be willing to learn plasmapheresis and add this skill of performing plasmapheresis to their repertoire. After speaking in detail with the department administration director, they were willing to learn and perform the procedure.

With the acceptance of the infusion department willing to learn the skill of TPE procedure, we again returned to the intensive care unit to re-discuss the possibility of the ICU nurses learning to do the TPE procedure only in the intensive care unit. This time they were willing to accept the training. Of note, at that juncture, we also realize that the initial resistance of the ICU team to learn the procedure was because of the fear that they will have to do the procedure occasionally on an outpatient basis but since this was already being undertaken by the infusion therapy staff, they were more than willing to learn to do it in the inpatient/ICU setting.

3. *Willingness to put in Work - Designing/ writing a white paper on the needs and benefits of this service*

Now armed with a solution of having enough staff to be trained on the plasmapheresis procedure, the next step was how to convince the hospital executive to finance the project. We started by analyzing the prevalence of the indications for plasmapheresis and comparing them to the population sample ratio that the hospital was currently providing care for and further estimating the number of procedures to be performed annually as well as estimating cost of providing nursing staff hours. Furthermore, the cost that would be incurred for renting space within the facility and device acquisition cost were taken into consideration.

4. *Money and profit matters!*

With this analysis, it was estimated that the minimal margin will be 10 patients undergoing 7 procedures each of plasmapheresis (total of 70 separate procedures) in a year above which the hospital will have net cost benefit.

**After doing this analysis we presented a paper to the administration showing the benefits and the possible cost recuperation analysis of performing this procedure.**

Following a review by the administration where they saw the huge potential of undergoing this procedure, the hospital executives decided to release the nearly $100,000 startup cost to the budget to initiate the provision of the plasmapheresis service being granted to individuals on an inpatient and also an outpatient basis. The most abundant outcome in this presentation is not only the steps to ensure provision of a new service line in a tertiary hospital but the collaborative effort of initiating other departments to join hands to creating a new service procedure.

Since taking effect 4 weeks ago, 8 separate TPE procedures have been done in the hospital.

With collaboration with the plasmapheresis device (Prismaflex manufacturer) and after extensive discussion and later approval by the hospital administration, we started the process of offering therapeutic plasmapheresis to patients in this area at the hospital.

**Discussion**

Whilst several papers have been written on patient to physician communication, but not many in the field of medicine is focus on medical provider to other supporting – staff/ care-providers and or administration staff communication [1,2]

Decades ago, effective doctor-patient communication was a central clinical function in building a therapeutic doctor-patient relationship, which is the heart and art of medicine, however, in these modern days, communication now plays a more integral role of being more effective in doctor – doctor/other staff interactions as t*he increasingly complex needs of patients, an explosion of medical knowledge, and seismic shifts in healthcare systems has altered the balance of quality of care in today's hospital* [3,4] . In this write-up, we explore the use of a method of communication in creating a new medical service that spans different departments in a tertiary hospital.

There are generally several steps contributing to effective communication between coworkers or medical providers in the work environment. One of the less known steps is that the role of a detailed understanding of the issue helps in promoting effective communication. [5].

Upon further discussion with the head of administration in the nephrology unit, we realized at the very outset that there were currently no plans to find a perfect solution to the recruitment of nurses to enable sufficient staff available to be able to provide a new service. We as the nephrology providers in the unit could also not envision how the dialysis nursing staff shortage situation could be resolved though there was a consensus and wish that therapeutic plasmapheresis (TPE) could be provided in the hospital and be made available to their patients. At this juncture, we realized that it was a choice between our need for plasmapheresis versus the

current reality of lack of appropriately trained nurses to perform the plasmapheresis due to the poor staff complement among dialysis nurses.

Starting with a goal of utilizing a good communication strategy to achieve the goal of recruiting enough nursing staff on financial support from the hospital administration to create this plasmapheresis service, we initially embarked on oral discussion with all the relevant staff of the dialysis and nephrology team as well as some members of the hospital executive administrative team. However, every oral discussion with the administrative staff at the hospital as well as dialysis administration was frustrating as they all remain adamant that since there is a shortage of nurses in the dialysis unit already, there was no room to add the new service which will require the use of the very same dialysis staff. We then established further dialogue with administration to discover new ways to circumvent this issue of shortage of dialysis nurses. After multiple unsuccessful initial attempts, we were initially at wits' end with no hope of ever providing the service. However, while discussing the matter with an infusion nursing administrator; we refocused our efforts on training the infusion nurses to learn how to do the plasmapheresis procedure.

Though all the steps we outline above were done to achieve our goal but a key component of this success was also due to applying "*Patience"* to our strategy. Considering the timeline between presenting the benefits of restarting plasmapheresis, allocating funds to begin training and obtaining equipment for initiating plasmapheresis, it is exactly 14 months from today that I joined the hospital team and realized the need introduce the plasmapheresis service.

Our aim in this paper is to outline the unique and conventionally different steps a Medical provider can undertake to achieve a goal of providing a new service to their department .

In this write-up, we highlighted several steps of communication, but the key here was the use of collaborating several team efforts from inter-departmental units and detailed knowledge of a specific Medical device to circumvent the lack of shortage of dialysis nursing staff in our hospital.

**Conclusion**

In conclusion, having a comprehensive understanding of a medical procedure and the steps to navigate problems may be a more helpful tool in establishing and maintaining effective communication between medical providers in the hospital setting.

Addendum - A recent local TV news report has coverage of the steps here –

http://www.blackhillsfox.com/content/news/New--480427263.html

## References


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Supervisor Note

I agree with the description pattern and approach to events presented above by Dr Okundaye . The realization of this service is now providing a much-needed respite to our patients who had previously had to travel long distances.

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