

Anticoagulation Management Service: Dedication to Increased Patient Care and Satisfaction

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Abstract

Purpose: Oral anticoagulation therapy has been proven to be beneficial in the prevention of thromboembolism and stroke when correctly administered. Such therapy can also place a patient at risk for serious bleeding. Continuous monitoring of the patient's INR with required medication adjustments and ongoing patient teaching could maximize the benefits and minimize the risks of anticoagulation therapy. Such management requires ongoing face-to-face communication between the fewest people to prevent communication breakdowns. Lack of communication between provider, patient and various labs result in poor patient outcomes.

Method: To improve ambulatory anticoagulation patient care, outcomes, satisfaction and capture reimbursement, the formation of an anticoagulation Management Service with point of care testing should be considered.

Results: The point-of-care Anticoagulation Management Service was instituted at the University of Nebraska Medical Center's Section of Cardiology on July 12, 1999. A nurse and a part-time pharmacist staff the clinic. Patients are seen by appointment lasting approximately 20 minutes. During the appointment patient vitals are measured and point of care INR testing with immediate results is completed. Patients are educated and counseled on INR changes, what can be done to return to range and on drug interactions. Dosage modifications are done at the appointment based on a physician-approved protocol.

Conclusions: Based on a patient survey done three months and again ten months after the start of the clinic, patient satisfaction has increased significantly. Other goals reached include an increase of patients within optimum INR range, a decrease in critical INRs and increased patient compliance. A comparison test done to the associated hospital's clinical lab confirms the reliability of the protime instrument used in point of care testing. There was not a statistically significant difference in the individual test results.

Background

Many problems were incurred with the phone management system.

- Patient went to central lab and results were not faxed to the clinic due to oversight or not completing the test. The nurse was unaware of test and did not call the patient. The patient did not receive phone call so assumed results were okay. No adjustments were made.
- Patients did not go to lab for required test at recommended times. Their perspective was often "It can't be that important of a test if it takes the nurse 2 or 3 business days to get back with the results".
- If the patient was not at home when the nurse called, they often did not have an answering machine or a work number. If a message was left and the patient did return the call, the nurse may have been at lunch, in a meeting or with another patient. Critical INRs could have taken 1 to 3 days to report to the patient. Some lab results and medication instructions were sent via mail to the patient because the patient was unable to be reached by phone.
- Many patients would put off having their protime test done because they feared venous punctures or had poor venous access and such was painful.
- Leaving messages on phone answering machines did not allow the nurse and patient to discuss why an INR was high or low. Patients lacked basic knowledge and understanding of both the benefits and risks of Coumadin (Warfarin).
- Patients were unable to verbalize Coumadin dosing instructions and had no one at home to help fill their pillboxes.

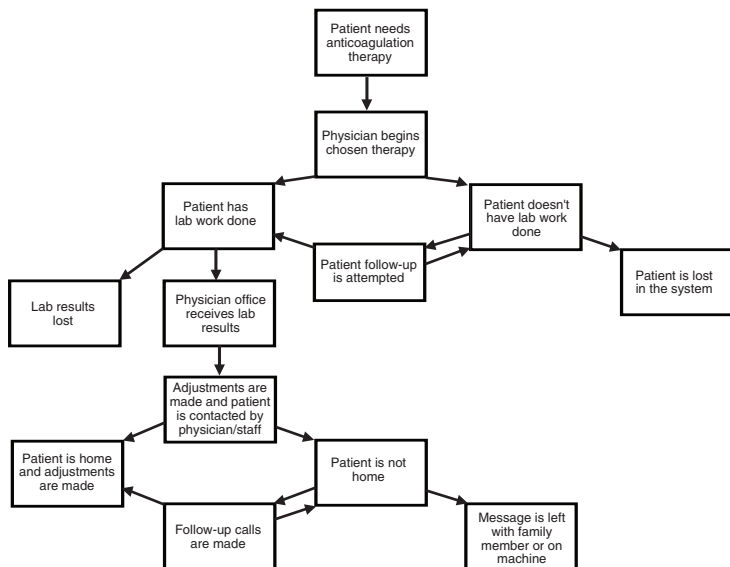
Mission

The mission of the Anticoagulation Clinic at the University of Nebraska Medical Center is concurrent with the overall mission of the Section. That is to provide the highest quality of care to our patients and their families. This will be done through the provision of needed services in a fashion convenient to the patient.

Goals and Objectives

1. improve patient compliance through education, empowerment and reinforcement,
2. increase patient and physician satisfaction,
3. maintain >65% of patients in therapeutic range as measured by INR levels, and
4. decrease number of patients with critical INR levels.

Telephone Management System for Anticoagulation Therapy

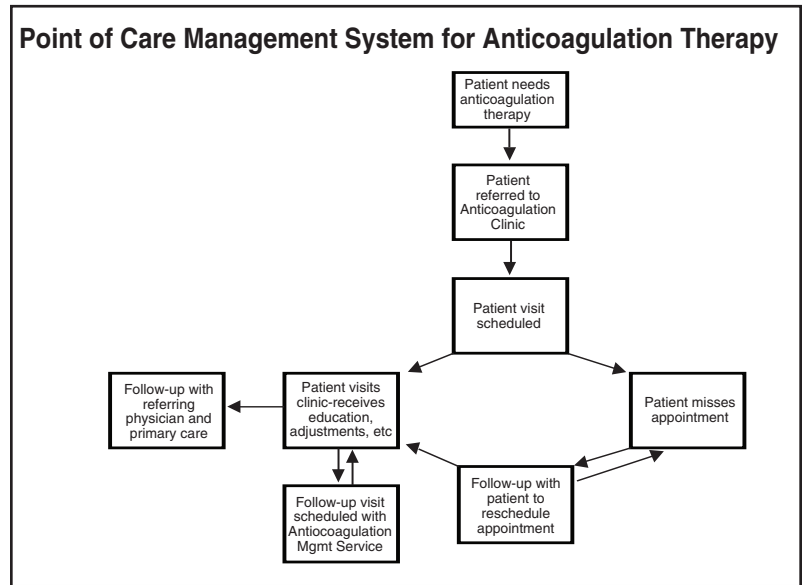
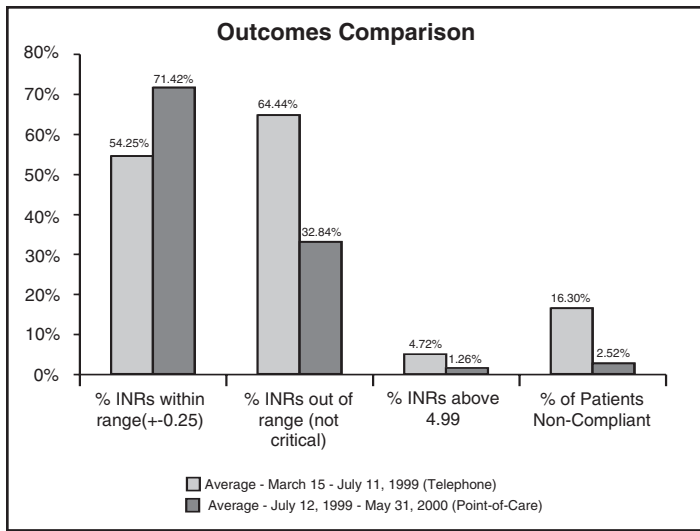


Point of Care/Lab Comparison

Sample #	NHS Lab INR	Pro Time INR (POC)	Mean INR Difference
1	1.90	1.99	0.09
2	1.00	1.11	0.11
3	1.20	1.63	0.43
4	1.10	1.18	0.08
5	1.40	1.67	0.27
6	3.20	3.86	0.66
7	1.00	1.17	0.17
8	0.09	1.03	0.13
9	1.70	1.88	0.18
10	2.90	3.29	0.39
11	2.50	2.93	0.43
12	1.90	2.15	0.25
13	1.30	1.56	0.26
14	2.00	2.22	0.22
15	2.10	2.06	-0.04
16	1.00	1.15	0.15
17	1.00	1.01	0.01
18	1.00	1.19	0.19
19	0.90	0.94	0.04
20	0.90	0.87	-0.03
		Average	0.20

Regression Statistics

r=	0.987318
R Square	0.974796
Adjusted R Square	0.973396
Standard Error	0.135254
Observations	20



On May 15, 2000 a second survey was mailed to those patients currently monitored by the nurse/pharmacist in the Section of Cardiology at the University of Nebraska Medical Center for oral anticoagulation therapy. Of the 122 surveys mailed, 68 were returned. The results of the survey are depicted in the graph below.

The patients were asked to rate the following questions as either have improved (1), stayed the same (2) or have become worse (3).

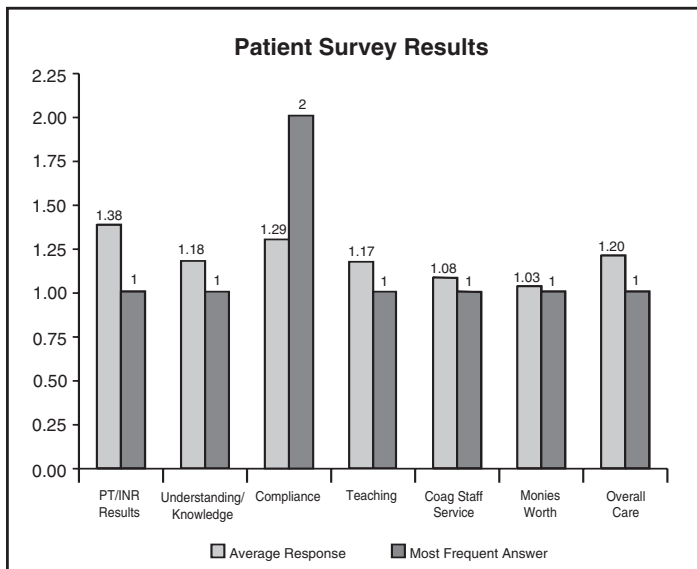
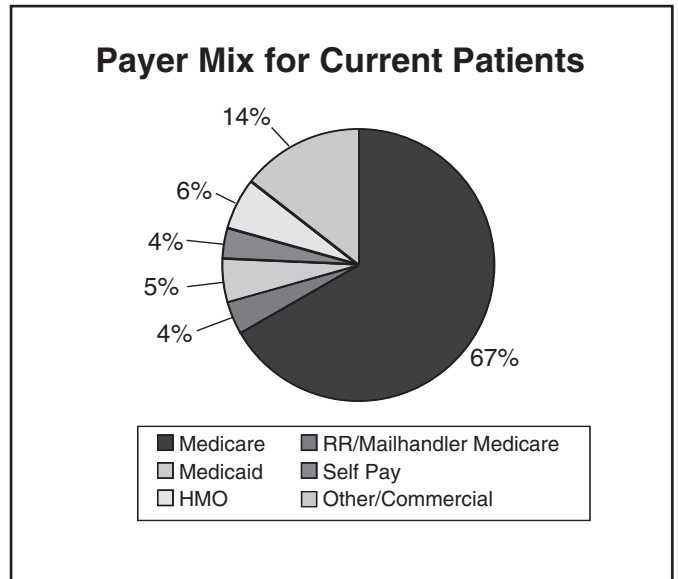
As a result of the nurse/pharmacist run Cardiology Anticoagulation Clinic:

1. Do you feel your PT/INR results
2. Do you feel your understanding/knowledge of anticoagulation therapy and your involvement in your own care
3. Do you feel your compliance with having labs completed, remembering to take medications and adhering to diet
4. Do you feel the nurse teaching educational materials, counseling, help in obtaining medications, assistance with filling pill boxes

The patients were also asked to rate the clinic staff and the overall care received from the nurse/pharmacist on the following scale.

Excellent (1) Above Average (2) Average (3) Below Average (4) Not acceptable (5)

Finally, the patient was asked whether or not they felt they were getting their money's worth from the clinic. Yes (1) and No (2)



Conclusions

The institution of the anticoagulation clinic in the Section of Cardiology at the University of Nebraska Medical Center has made significant improvements in the management of patients utilizing the service. Patient compliance is up statistically as well as from the patient's perspective. According to patient surveys conducted at three months and again at ten months, the patient's agree with the numbers that their test results have improved and their compliance has either stayed the same or improved. More importantly, the patient feels their knowledge has improved allowing them to make better choices to help in their overall care.



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