

Introduction

As an approach to anticoagulation therapy, Patient Self Testing (PST) has received a large amount of interest and attention from providers, payers and patients. However, little is known regarding the size and composition of the patient population, and the quality of care rendered to those patients. CoagClinic™ is the most widely used anticoagulation management tool in the United States, and provides the largest database (400,000 patients and 11 million encounters) addressing patients on anticoagulation therapy. This report summarizes the results obtained with the application and compares the results with patients treated via traditional office visits, in an ongoing role to facilitate quality improvement in participating anticoagulation providers.

Methods

The national CoagClinic™ database was queried with attention to patients whose encounters were entered as 'Patient Self Test' encounters. Utilizing the criteria from this report, 12 qualifying user groups were examined by means of retrospective data reviews. Factors examined included numbers of patients followed, frequency and number of encounters, and frequency of INR results within therapeutic range. Minimal criteria for participation included a minimum of 1 patient encounter per month, and six months of continuous use of the application. INR compliance rates were calculated for two ranges: the frequency of INR results within therapeutic range, as well as therapeutic range ± 0.2.

Results

Data from the Patient Self-Testing user groups and the Office Visit user groups were collected over a 10-year period, from 1998 to 2008. Characteristics of each user group are outlined in Table 1.

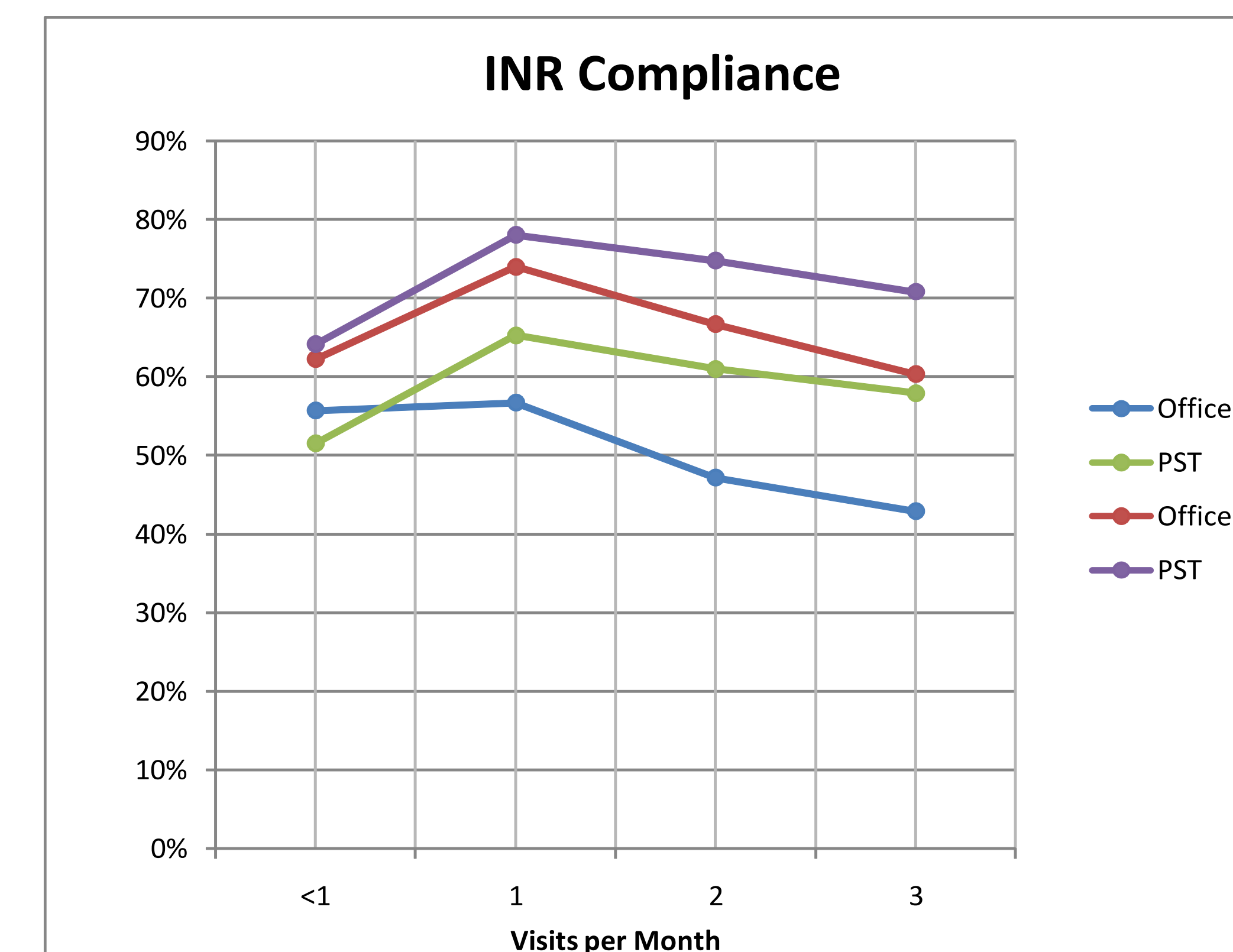
Results *continued*

Table 1 – Patient Data

	PST Patients	Office Patients
Total # of pts	354 / 3.2%	10423 / 96.8%
Anticoagulation Indication - %		
Atrial Fibrillation	55%	66.3%
Valve Replacement	35%	8.1%
DVT/PE	9%	20.5%
Other	1%	5.1%

A total of 354 PST patients were followed in these groups, compared to 10,423 patients treated through office encounters. PST encounters totaled 4738, representing 1.2% of the total encounters. During the period from 2007 to 2008 PST patient numbers increased by 850%, while overall user group patient numbers increased by 17% during the same period. The PST group contained relatively more patients with valve disease, but growth in the population during 2008 has been largely due to increased numbers of patients with other diagnoses. The frequency of INR results in range for PST patients has risen steadily from 2004-2008, from 59% to 71%. Patients seen in office encounters during the same period have experienced INR in range frequencies of 52-54%. From 2004-08 PST patients have consistently shown higher INR in range results ($p < 0.001$) Of interest is the strong correlation between visit frequency (PST population average = 2.33/month vs. 1.54/month for clinic encounters) and improved INR in range results.

Figure 1 – INR Compliance PST vs. Office Visit



OVERALL VISITS 2005-2008

	Visits Overall	Visits In Range	% In Range	% In Range +/- .2
PST	90,395	52,745	58.35%	72.08%
Office	4,301,507	2,296,380	53.39%	67.86%

INR Compliance Data

VPM	In Range		In Range +/- .2	
	Office	PST	Office	PST
<1	55.76%	51.57%	62.31%	64.15%
1	56.74%	65.30%	74.01%	78.09%
2	47.20%	61.04%	66.72%	74.81%
3	42.94%	57.94%	60.38%	70.85%
>3*	40.16%	56.59%	56.25%	70.61%

*Not shown in graph

Conclusion

Patient self testing, although being used in a small fraction of patients on anticoagulation therapy, is growing rapidly. This has been particularly apparent since a change in Medicare coverage requirements was made in 2008. PST patients show a degree of anticoagulation control exceeding that of patients managed in an anticoagulation clinic environment, which may be reflective of an increased frequency of testing. Anticoagulation therapy providers may find PST to be a viable and acceptable treatment approach for many patients requiring anticoagulation therapy.

References

1. Ansell J, Jacobson A, Levy J, Voller H, Hasenkam JM. Guidelines for implementation of patient self-testing and patient self-management of oral anticoagulation. International consensus guidelines prepared by International Self-Monitoring Association for Oral Anticoagulation. *International Journal of Cardiology* 2005;99:37-45.