

A COST ANALYSIS COMPARING ROUTINE LAB TESTING VERSUS PROTIME FOR PT INR TESTING IN THE HOME CARE SETTING

PURPOSE

St. Cloud Home Care and Hospice conducted a cost analysis to determine if the ProTime[®] Microcoagulation System would be an acceptable alternative to routine laboratory testing for the measurement of patient PT/INR in the patient's home during a nursing visit.

BACKGROUND

The St. Cloud Hospital Home Care and Hospice was established in 1982 as a not for profit home-care provider serving all ages with specialties in infusion therapy, wound management, pediatric rehab, home tele-monitoring, orthopedic rehabilitation, and palliative care. More than 60 employees manage approximately 2,700 skilled visits per month. For patients on warfarin therapy, this skilled visit includes collection of a citrated blood sample for PT/INR testing. Traditionally, this sample was transported by the nurse to the reference laboratory immediately following each patient visit. The PT/INR result would be communicated to the home care staff by the laboratory. The home care staff would then notify the attending physician for instructions if a change in warfarin dose was required and then contact the patient.

RESULTS AND DISCUSSION

A clinical correlation analysis was performed comparing both venous and finger stick samples on the ProTime device to the reference laboratory results for INR. Once these results were deemed satisfactory (data not shown), the current cost analysis was performed. Table 1 compares the cost of collecting and processing a routine laboratory sample versus point-of-care testing with the ProTime. The costs vary depending upon the credentials of the nurse that is deployed to the patient. It is estimated that on average, the nurse must travel an additional 30 miles to collect the sample, drop the sample at the laboratory, and return to the field (mileage cost = \$12.15). The travel time to the lab, parking, completing paperwork, and travel back to the field on average takes approximately one additional hour of the nurse's time (RN = \$32.25; LPN = \$17.92). While one nurse is taking the blood to the lab, another nurse is provided to complete patient visits that the first nurse could have done if the travel time could have been eliminated, adding to the cost for the agency (RN = \$51.60; LPN = \$28.67).

Implementing the ProTime eliminates the additional travel time, mileage and the need for a second nurse. The only cost associated with using the ProTime system is the estimated \$5 cost for supplies. The savings to the home-care department was estimated to be in the range of \$5,409 to \$9,100 per month using an average of 100 PT/INR tests per month.

Table 1. Comparison of costs in collecting and processing routine lab draws vs. POC testing with ProTime

	Routine Laboratory		ProTime	
	RN	LPN	RN	LPN
Average round trip to lab and back to patient 30 miles at \$.405/mile.	\$12.15	\$12.15	0	0
Cost of nursing time to travel to lab, park, process paperwork, and travel back to the field: Estimated 1 hour of time per patient visit.	\$32.25	\$17.92	0	0
Increased staffing costs (Loss of one visit/day in productivity. One visit averages 1.6 hours/visit.)	\$51.60	\$28.67	0	0
Cost of supplies. (Laboratory assumes cost for tubes etc.)	0	0	\$5.00	\$5.00
Total	\$96.00	\$58.74	\$5.00	\$5.00

In addition to the cost savings, testing with the ProTime device allows results to be called to the physician's office within minutes of conducting the test. This eliminates potential physician and nursing staff complaints of receiving lab results late in the day or having to wait until the following day. Patient satisfaction is also enhanced since the visiting nurse can call the physician immediately with an abnormal result and make medication adjustments as necessary. This process can potentially reduce medication errors caused by miscommunication between the nurse, patient and/or caregiver. Obtaining a simple finger stick is considered less painful for the patient thus reducing their anxiety of having a repeat venous draw if they have difficult veins.

CONCLUSION

The ProTime proved to be a cost-effective alternative to obtain PT/INR results from patients at home on oral anticoagulation therapy. The savings to the home care department was estimated to be in the range of \$5,409 to \$9,100 per month using an average of 100 PT/INR tests per month. Both physicians and patients were satisfied that results were available immediately and medication adjustments could be made without delay thus potentially reducing the risk of errors.



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