



Research Week 2022

A Comparative Economic Analysis of Scribe vs Voice to Text App for an Outpatient Cardiology Clinic

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Keywords

Scribes, Clinical Economics, Cardiology, Electronic Health Record, User-Computer Interface

Abstract Background

According to a Medscape survey, administrative tasks such as charting are the single greatest factor cardiologists report contributes to burnout (68%). Both scribes and speech recognition software such as Dragon have been used to reduce times providers invest to documentation and improve job satisfaction.

Methods

We conducted a comparative economic analysis of the use of a medical scribe versus Dragon voice recognition dictation software for an outpatient cardiology clinic at an academic medical center. We conducted qualitative interviews with staff that support both OHSU Medical Scribe Program and Dragon at OHSU. We sought to understand the annual costs associated with solutions for transcription for a single provider by evaluating the cost of one scribe for one physician for the duration of one year.

Results

When physician time spent editing and finalizing clinic notes is not considered, the benefit/cost ratio of Dragon appears more favorable at 3.18 compared with 2.28 for scribe, suggesting a greater benefit for a given dollar value. However, once we add the opportunity cost associated with physician time, the scribe service becomes far more favorable as highlighted in the table below. When accounting for physician time, the Dragon system becomes cost prohibitive while the scribe service continues to remain favorable.

Assumptions	Unit	Per Year Without MD Editing Time	Per Year Counting MD Editing Time
General			
Individual Academic Cardiologist: AAMC median salary for noninvasive assistant professor 2018-2019			\$338,000
First year costs for each (e.g. training onboarding included)			
Outpatient Clinic Use Only			
Average number of clinic days per month	16 days		
Average number of clinic hours per day	10 hr/day		
SCRIBE			
Costs to the Provider			
Annual Salary (\$18/hour)	10 hr x 16 days x 12 mos x \$18	\$34,560	\$34,560
4 hr online training + 8 hr OHSU trainer + 40 hrs clinical training = 56 hr training	56 hr x \$18	\$1,000	\$1,000
Physician Editing (10% of clinic hours @ \$240/hr)	10 hr x 16 days x 12 mos x .1 x \$240		\$46,080
<i>Total Annual Scribe Cost</i>		<i>\$35,560</i>	<i>\$71,640</i>
Benefits			
Increased revenue = Able to see 2 extra patients/day @ avg 2 RVU/visit AND upcoding 4 rvu/day (wRVU Cardiology = \$60)	8 hr x 16 days x 12 mos x \$60	\$92,160	\$92,160
Probability of additional revenue generation from scribe = 80%		= \$92,160 x 0.8 \$73,278	= \$92,160 x 0.8 \$73,278
Probability of maintaining the costs associated with scribe utilization = 90%		= \$35,560 x 0.9 \$32,004	= \$71,640 x 0.9 \$64,476
Benefit/Cost Ratio		2.28	1.14
Benefit – Cost		= \$73,728-\$32,004 \$41,724	= \$73,728-\$64,476 \$9,252

DRAGON			
License Fee	\$65/month	\$780	\$780
Cost of Dragon PowerMic	\$350	\$350	\$350
Physician Training (2 hr @ \$240/hr)		\$480	\$480
Physician editing (20% of clinic hours)	10 hr x 16 days x 12 mos x .2 x \$240		\$93,330
<i>Total Annual Dragon Cost</i>		<i>\$1,610</i>	<i>\$94,940</i>
Benefits			
Increased revenue = 0.5 RVU/Day (wRVU Cardiology = \$60)	.5 x 16 days x 12 mos x \$60	\$5,760	\$5,760
Probability of additional revenue generation from Dragon = 80%		= \$5,760 x 0.8 \$4,608	= \$5,760 x 0.8 \$4,608
Probability of maintaining the costs associated with Dragon utilization = 90%		= \$1,610 x 0.9 \$1,449	= \$94,940 x 0.9 \$85,446
Benefit/Cost Ratio		= \$4,608/\$1,449 3.18	= \$4,608/\$85,446 0.054
Benefit – Cost		= \$4,608-\$1,449 \$3,159	= \$4608-\$85,446 \$-80,838

Conclusions & Next Steps

Factoring in opportunity cost associated with cardiologist time shifts the benefit towards a scribe. Also, overall revenue generated (cost - benefit) from the scribe service will be significantly higher than Dragon.