Cost-Effectiveness Of Remote Live Digital Imaging For Intraoperative Consults Using Frozen Sections

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Continuous Innovation For Pathology

Introduction

More hospitals are establishing centralized frozen laboratories on-campus and/or at satellite facilities creating the need to provide Pathologists instant remote access to frozen section slides for review from their office for live intraoperative consults.

Remote live review of slides using the VisionTek®/VisionTek® M6 Digital Microscope (Sakura Finetek, Torrance, CA) reallocates the Pathologist's time spent on travel to the satellite facility or on-campus laboratories to instead read non frozen cases increasing productivity and generating incremental revenue.

A comprehensive Return on Investment (ROI) model to justify the use of remote live digital microscopy is presented. The model calculates and projects the following:

- Time saved
- Incremental revenue generated utilizing the time saved
- Payback time (time for return of the investment)
- Overall financial benefits

Materials and Methods

Provide a flexible ROI model that calculates and visualizes the time saved using remote live digital microscopy, the incremental revenue generated utilizing the time saved, the payback time and the overall financial benefit using VisionTek/VisionTek M6.

INPUT

Pathologist:

Current utilization of time for frozen sections on-campus and at satellite facility

Sakura:

Device pricing

OUTPUT

Comparison of financials of current situation versus use of VisionTek / VisionTek M6

- Time savings
- Cost savings
- Incremental revenue
- Payback time

Billable rate for a frozen case [$]	$156
Billable rate for non frozen case [$]	$200
Total miles to visit SATELLITE per week [miles]	60
Travel expenses / mile [$]	$0.58
Yearly Salary for Pathologist [$]	$267,000
Number of working hours per day [hours]	8
Number of working weeks per year [weeks]	52
Hourly salary for Pathologist [$]	$128
Hourly salary for Pathologist Assistant. [$]	$45
Average time to gross and diagnose a FROZEN case [min]	30
Average time to diagnose a NON-FROZEN case [min]	30
# Frozen cases ON-CAMPUS per week	15
Total time for traveling and grossing per week ON-CAMPUS [min]	300
# Frozen cases at SATELLITE per week	3
Total time for traveling to SATELLITE and grossing per week [min]	360
VisionTek Model	VisionTek M6
Discount on VisionTek models [%]	0%
Price for VisionTek M6 [$]	$196,000
Number of VisionTek M6	2
Service contract / year [$]	$7,500
Service contract time horizon [$]	$30,000
Time horizon [years]	3
VisionTek	$89,000
VisionTek M6	$98,000

Pathologist

OUTPUT	/ week	/ year	/ horizon of 3 years
Total time for traveling and grossing per week ON CAMPUS [min]	200	10,400	31,200
Total time for traveling to SATELLITE and grossing per week [min]	360	18,720	56,160
Average # of non frozen cases which can be reviewed during lost time due to travel [#]	22	1,144	3,432
Number of cases [#]	40	2,080	6,240
Billable rate for 18 frozen sections [$]	2,808	146,016	438,048
Billable rate for 22 extra non frozen cases [$]	4,400	228,800	686,400

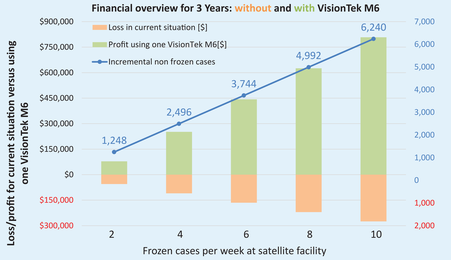
Administrator

Number of cases [#]	40	2,080	6,240
Billable rate for 18 frozen sections [$]	2,808	146,016	438,048
Billable rate for 22 extra non frozen cases [$]	4,400	228,800	686,400
Mileage costs for Pathologist Assistant to Satellite [$]	(35)	(1,794)	(5,588)
Costs for Pathologist Assistant to spend time to travel to Satellite [$]	(270)	(14,040)	(28,080)
Costs for Pathologist Assistant to gross and operate the VisionTek/VisionTek M6 [$]	(405)	(21,060)	(42,120)
Costs for Pathologist to diagnose 40 cases [$]	(1,990)	(103,463)	(310,388)
Costs for VisionTek M6 [$]			(226,000)
Hospital Income/Loss [$]	4,509	234,460	514,273
Payback time [years]			1.32

Results

Example 1 - Satellite facility

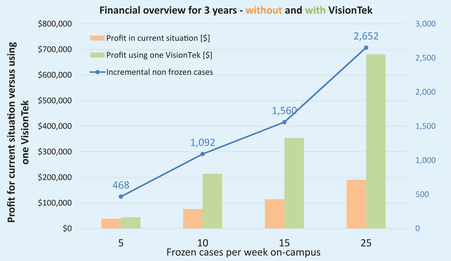
- Traveling to the same satellite facility (2, 4, 6, 8, or 10 times per week)
- Satellite facility is 10 miles away (round-trip 20 miles)
- Travel time is 2 hours round-trip
- 1 VisionTek M6
- When a VisionTek M6 is used, the Pathology Assistant (PA) travels to the satellite facility instead of the Pathologist



Satellite Frozen cases per week	2	4	6	8	10
Payback time (months)	48	17	8	6	5

Example 2 – On-campus laboratory

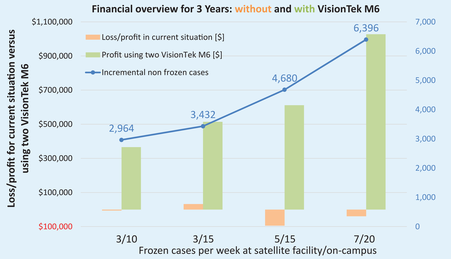
- Walking to on-campus frozen section laboratory (5, 10, 15, or 25 times per week)
- Travel time is 20 minutes round-trip
- 1 VisionTek
- Without VisionTek, the Pathologist performs grossing and reviews the slides
- With VisionTek the PA performs grossing and operates the VisionTek; the Pathologist reviews the slides remotely



Frozen cases per week on-campus	5	10	15	25
Payback time (months)	86	18	11	6

Example 3 – Satellite facility and on-campus laboratory

- Cases per week at satellite facility/on-campus (3/10, 3/15, 5/15, 7/20)
- 2 VisionTek M6 (satellite facility and on-campus)
- Satellite facility is 10 miles away (round-trip 20 miles)
- Travel time is 2 hours round-trip to satellite facility
- Travel time is 20 minutes round-trip to on-campus laboratory
- When using 2 VisionTek M6, the PA travels to the satellite facility and on-campus laboratory, performs grossing and operates the VisionTek M6



Frozen cases per week **at satellite Facility/on-campus**	3/10	3/15	5/15	7/20
Payback time (months)	22	16	13	18

Conclusions

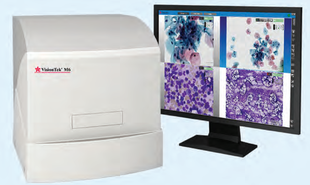
The presented model compares the financials of investing in remote live digital microscopy using VisionTek/VisionTek M6 to review slides on-campus and/or at satellite facilities with situations where Pathologists have to travel to them.

It presents the results compiled separately for the appreciation of the Pathologist and Hospital Administration.

The considered parameters and calculations of the model have been verified by 3 hospitals.

An investment in live digital microscopy using VisionTek and/or VisionTek M6 provides preferable profitability with a short payback time.

The presented model is a powerful tool to validate the financial benefit of investing into remote live digital microscopy.



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