

Economic Evaluation of Clinician Reskilling Initiatives: Cost Effectiveness and Vacancy Rate

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Introduction Background to Clinical Re-skilling



Clinical reskilling; the additional training offered to clinicians.



It helps clinicians keep up with evolving technologies (adaptability).



Specialized Units; individuals with advanced competencies, they require regular re-skilling.



Reskilling aims to optimize patient outcome, safety and enhance capacity.

Introduction Challenges to Reskilling efforts



Economic challenges; there are challenges in securing funding amidst multiple priorities.



Staffing shortages; The national turnover rate in hospitals is 22.7%.



Resistance to change



Lack of standardized metrics



Challenges related to healthcare institution priorities

Problem Statement

- The problem addressed in this thesis is the need to assess and analyze the economic impact of clinician reskilling, including its costs, benefits, and potential return on investment.



Purpose of the project



Analyze economic impact of clinician reskilling in healthcare industry.



Evaluate cost associated with implementing and maintaining reskilling programs



Assess the benefits of reskilling from a customers' perspective.



Examine potential ROI of reskilling efforts.



Note factors that influence economic viability and sustainability of reskilling.



Provide recommendations and best practices to enhance re-skilling.

Research Questions

How does implementing a clinical re-skilling program impact financial burden on hospitals?

What are the cost associated with a clinician reskilling program.

How do the benefits of re-skilling compare with costs incurred by healthcare institutions?

What is the potential ROI on clinical reskilling?

What factors influence economic viability and sustainability of reskilling

What are the best practices and recommendations to optimize economic efficiency of re-skilling



Significance of the Study

- Help in resource allocation
- Financial sustainability
- Improve quality of care
- Workforce development
- Policy implementation

Review of the literature

Bridges and Bridges (2009)

- Impact: the paper emphasizes on effective change management strategies, with insight on transition within organizations.
- Significance: It underscores the need to evaluate cost and benefits of clinician re-skilling programs.

Smith Et al., (2017)

- Impact: the study found that hospitals investing in clinician reskilling reduced turnover rates among clinical staff.
- Significance; It highlights the potential cost savings resulting from improved patient outcome due to patient re-skilling

Review of the literature

Jones and Brown (2018)

- Impact: this research showed that hospitals with higher levels of clinician reskilling reported lower rates of adverse events and medical errors.
- Significance: It highlights the potential cost savings resulting from improved patient outcomes due to clinician reskilling

Johnson et al. (2019)

- Impact: This study highlighted a positive correlation between clinician reskilling and patient satisfaction scores in acute care settings.
- Significance: It demonstrates the economic value of clinician reskilling in enhancing patient experiences.

Methods



**PRE-ASSESSMENT AND
POST-ASSESSMENT**



**LIKERT SCALE
QUESTIONNAIRE**



**QUANTITATIVE
CONTENT ANALYSIS**

Data Analysis

Demographics

		Count	Table N %
Intervention	Pre-Survey	19	73.1%
	Post-Survey	7	26.9%
Gender	Female	26	100.0%
	Male	0	0.0%
Age	18-24	1	4.0%
	25-34	9	36.0%
	35-44	2	8.0%
	45-54	10	40.0%
	55-64	2	8.0%
	65+	1	4.0%
Experience	Less than 1	4	16.0%
	1-3 years	2	8.0%
	4-6 years	3	12.0%
	5-7 years	4	16.0%
	8-10 years	2	8.0%
	Greater than 10 years	10	40.0%
Education	Diploma	0	0.0%
	Associates Degree	6	23.1%
	Bachelor' Degree	12	46.2%
	Master's Degree	8	30.8%
	PhD/DNP	0	0.0%

		Count	Table N %
Have you previously worked in a telemetry setting?	Yes	20	76.9%
	No	6	23.1%
Experience In Telemetry	Less than 1	9	34.6%
	2-5	9	34.6%
	6-10	4	15.4%
	Greater than 10	4	15.4%

Data Analysis

Experience in Telemetry

Group Statistics								
	Intervention	N	Mean	Std. Deviation	Std. Error Mean	F	Sig.	
Comfort and skill level for caring for a telemetry patient	Pre-Survey	19	4.4211	2.69394	0.61803	2.799	0.107	
	Post Survey	7	6.2857	1.88982	0.71429			
Comfort and skill level for reading rhythm strips for telemetry patients	Pre-Survey	19	7.3684	3.43528	0.78811	8.413	0.008	
	Post Survey	7	8.2857	1.60357	0.60609			
Comfort and skill level with connecting patients to the telemetry monitor	Pre-Survey	19	5.0526	3.04546	0.69868	0.2	0.658	
	Post Survey	7	6.7143	2.62769	0.99317			
Comfort and skill level for monitoring a telemetry patients and troubleshooting alarms	Pre-Survey	19	5.0526	3.04546	0.69868	0.2	0.658	
	Post Survey	7	6.7143	2.62769	0.99317			

Data Analysis

Caring for Telemetry Patients

Data Analysis

□ PICC - Clinician Reskilling Pre-Survey

Group Statistics																																											
	Presurvey	N	Mean	Std. Deviation	Std. Error Mean	F	Sig.																																				
Comfort and skill level for preparing and inserting PICC lines	Pre Survey	3	4	5.19615	3	9.6	0.053																																				
	Post Survey	2	1	0	0			Comfort and skill level for confirming proper placement of PICC lines after insertion	Pre Survey	3	4	5.19615	3	9.6	0.053	Post Survey	2	1	0	0	Comfort with setting up and troubleshooting a PICC line	Pre Survey	3	4	5.19615	3	9.6	0.053	Post Survey	2	1	0	0	Comfort and skill level for PICC line dressings and proper removal procedures	Pre Survey	3	6	4.58258	2.64575	4.615	0.121	Post Survey	2
Comfort and skill level for confirming proper placement of PICC lines after insertion	Pre Survey	3	4	5.19615	3	9.6	0.053																																				
	Post Survey	2	1	0	0			Comfort with setting up and troubleshooting a PICC line	Pre Survey	3	4	5.19615	3	9.6	0.053	Post Survey	2	1	0	0	Comfort and skill level for PICC line dressings and proper removal procedures	Pre Survey	3	6	4.58258	2.64575	4.615	0.121	Post Survey	2	1	0	0										
Comfort with setting up and troubleshooting a PICC line	Pre Survey	3	4	5.19615	3	9.6	0.053																																				
	Post Survey	2	1	0	0			Comfort and skill level for PICC line dressings and proper removal procedures	Pre Survey	3	6	4.58258	2.64575	4.615	0.121	Post Survey	2	1	0	0																							
Comfort and skill level for PICC line dressings and proper removal procedures	Pre Survey	3	6	4.58258	2.64575	4.615	0.121																																				
	Post Survey	2	1	0	0																																						

Data Analysis

Productivity And Hours Per Patient Day (HPPD)

Group Statistics

	Presurvey	N	Mean	Std. Deviation	Std. Error Mean	F	Sig.
Knowledge of productivity and HPPD	Pre Survey	10	4.8	2.39444	0.75719	0.722	0.412
	Post Survey	4	3.5	3	1.5		
Knowledge and comfort level staffing to a matrix	Pre Survey	10	6.2	3.11983	0.98658	0.084	0.777
	Post Survey	4	5	2.82843	1.41421		
Comfort with managing staffing levels in all nursing departments to current census	Pre Survey	10	6.8	2.52982	0.8	0.018	0.895
	Post Survey	4	7.25	2.06155	1.03078		
Knowledge of non-direct patient care expenses	Pre Survey	10	4	2.35702	0.74536	0	1
	Post Survey	4	3	2.82843	1.41421		

Economic Outcomes



IMPROVED PATIENT
OUTCOMES FROM
RESKILLING PROGRAMS
CONTRIBUTE TO COST
SAVINGS



RESKILLING PROGRAMS
HAVE BROADER
IMPLICATIONS FOR
HEALTHCARE POLICY
AND RESOURCE
ALLOCATION



EXPANSION OF CLINICAL
CAPABILITIES THROUGH
RESKILLING OFFERS
DIRECT FINANCIAL
BENEFITS



CLINICIANS'
SELF-REPORTED DATA
INDICATE OPPORTUNITIES
FOR GROWTH IN
TECHNICAL SKILLS

Financial Analysis - Telemetry

	Amount
Travel Nurse Expenses:	
Monthly bill rate per Travel Nurse	\$15,120
Number of Travel Nurses	29
Monthly Expense for Travel Nurses	\$438,480
Training and Reskilling Internal Employees Expenses:	
Monthly salary for Internal Nurses	8046.72
Training Cost per Nurse	\$15,000
Number of Nurses Reskilled	6
CETC	72000
Total Direct Training Expense	\$162,000
Monthly Expense for Internal staff	\$48,280
Projected Savings:	
Monthly Savings after Accounting for Training Expenses (3 months - Conservative)	(\$219,145)
Monthly reduction in travel labor remaining 9 months	\$789,264.0
Total Year savings	\$570,119
Reskilling ROI year 1	\$263,278
Breakeven	6 months 15 days

Row Labels	PICC Event Count	
2022	16	
Dec	16	\$ 69,696.00
2023	89	
Jan	7	\$ 30,492.00
Feb	7	\$ 30,492.00
Mar	11	\$ 47,916.00
Apr	2	\$ 8,712.00
May	10	\$ 43,560.00
Jun	9	\$ 39,204.00
Jul	8	\$ 34,848.00
Aug	12	\$ 52,272.00
Sep	1	\$ 4,356.00
Oct	6	\$ 26,136.00
Nov	9	\$ 39,204.00
Dec	7	\$ 30,492.00
2024	18	
Jan	18	\$ 78,408.00

Financial Analysis - PICC



Financial Analysis –Education Staffing & Productivity

Let's Do the Math – Inpatient (MS/T, ICU)

Medi-cal Per Diem Bed Rate:
\$2298

ADC – MS/T = 9

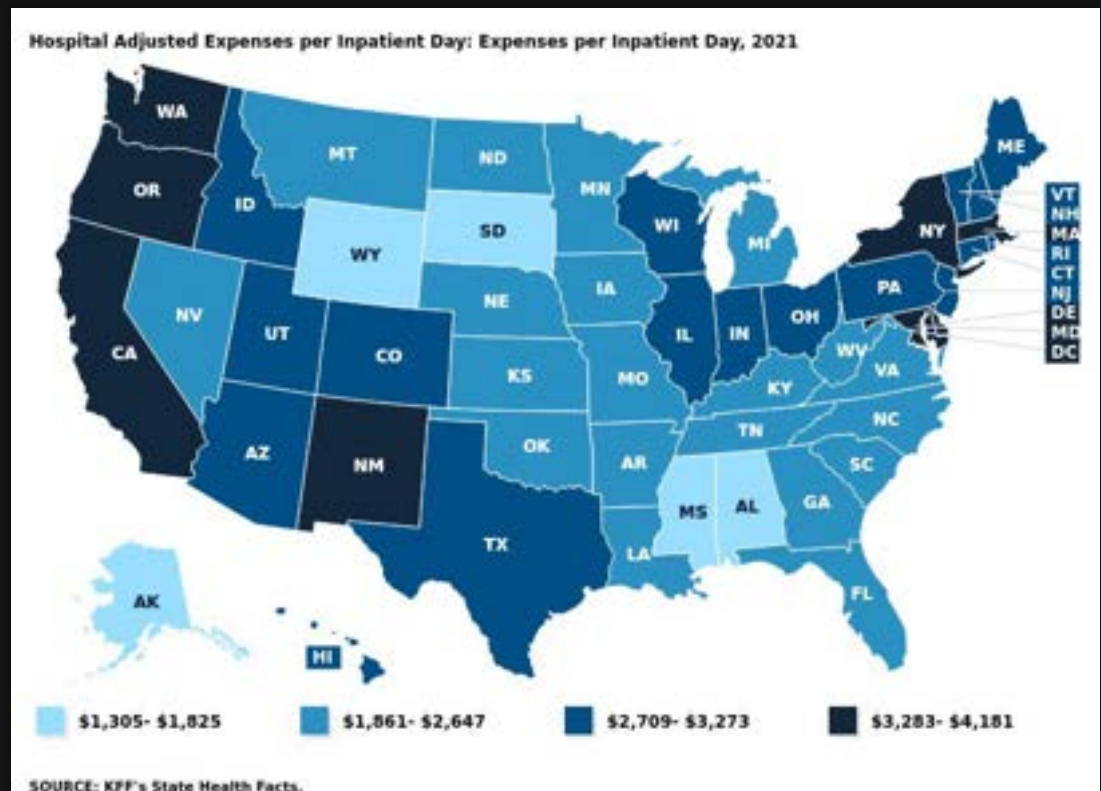
ADC – ICU (DOU) = 2

Total \$25,278 (11 patients)

VCMC CPD (conservative) =
\$3,283

Total \$36,113 (11 patients)

-\$10835/day



Financial Analysis – Staffing & Productivity

A B C			Y	AG	AO	AQ	AR
Productivity Tracker Through the Pay Period Ended November 25, 2023			Variance < 85	Variance ≤ 85-95		Variance ≤ 85-95	
			Variance ≤ 95-105	Variance > 105		Variance > 105	
(1)	(2)	(3)	(17)	(24)	(31)		
Facility	Dept #	Dept Name	Prod. Index	Prod. Index	Prod. Index		
SPH	R2	ICU/DOU - SPH	108.1%	79.8%	78.2%		

A B C			Y	AG	AO	AQ	AR
Productivity Tracker Through the Pay Period Ended December 9, 2023			Variance < 85	Variance ≤ 85-95		Variance ≤ 85-95	
			Variance ≤ 95-105	Variance > 105		Variance > 105	
(1)	(2)	(3)	(17)	(24)	(31)		
Facility	Dept #	Dept Name	Prod. Index	Prod. Index	Prod. Index		
SPH	R2	ICU/DOU - SPH	87.5%	89.3%	79.9%		

Summary, Implications, and Outcomes

Summary

- Economic evaluation of clinician reskilling initiatives is crucial to workforce strategy and building clinical capacity quickly
- Insights inform strategic decision-making regarding resource allocation

Implications

- Reskilling programs offer cost-effective solutions to staffing shortages
- Reduced vacancy rates alleviate financial burdens and enhance organizational performance
- Proactive reskilling approach fosters organizational resilience and workforce adaptability

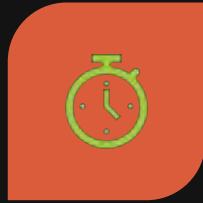
Outcomes

- Reskilling initiatives result in significant cost savings
- Lower vacancy rates signify improved workforce stability
- There is long-term sustainability of reskilling programs demonstrated through reduced dependency on temporary staffing solutions

Limitations



LIMITED DATA
AVAILABILITY



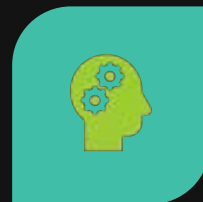
TIME CONSTRAINTS



RESOURCE
CONSTRAINTS



IRB APPROVAL
PROCESS



EXTENDED
ONBOARDING
TIME



Conclusions

COLLABORATIVE PARTNERSHIPS WITH INDEPENDENT CONSULTANTS OFFER TRANSFORMATIVE OPPORTUNITIES FOR HOSPITALS TO ADDRESS WORKFORCE CHALLENGES

STRATEGIC IMPACT LIES IN ADAPTABILITY AND RESPONSE TO EVOLVING HEALTHCARE DEMANDS.

GLOBAL SCALING AND EXPANSION OF RESKILLING PROGRAMS THROUGH PARTNERSHIPS HOLD PROMISE FOR ADDRESSING GLOBAL HEALTHCARE WORKFORCE CHALLENGES

Future Research Implications

Future research should aim to understand the financial impact and quality of patient outcomes associated with clinician reskilling initiatives through longitudinal studies tracking key financial metrics.

Investigating the relationship between clinician reskilling and patient care outcomes is crucial for determining the effectiveness of these programs in improving overall care quality.

Research into the role of technology in enhancing clinician reskilling programs can provide insights into the effectiveness of innovative learning tools and their cost-effectiveness.

Understanding the influence of organizational culture and leadership support on the success of clinician reskilling initiatives is essential for optimizing program implementation and sustainability.

Exploring the scalability of clinician reskilling models across diverse healthcare settings and populations can inform strategies for maximizing their impact on workforce development and patient care quality.

References

- Benner, P. (1982). From Novice to Expert. *The American Journal of Nursing*, 82(3), 402. doi:10.2307/3462928
- Bridges, W., & Bridges, S. (2009). *Managing transitions: Making the most of change* (3rd ed.). Da Capo Press/Perseus.
- Cheraghi, R., Ebrahimi, H., Kheibar, N. et al. Reasons for resistance to change in nursing: an integrative review. *BMC Nurs* 22, 310 (2023). <https://doi.org/10.1186/s12912-023-01460-0>
- Department of Consumer Affairs, California. (2016). *Barriers and recommendations to facilitating earn and learn training programs in allied health professions*. <https://www.dca.ca.gov/publications/ab2105.pdf>
- Jones, A., & Brown, B. (2018). Economic impact of clinician reskilling in the acute care setting: A retrospective analysis. *Journal of Healthcare Economics*, 15(2), 123-135.
- Jones, C. B., & Gates, M. (n.d.). *The Costs and Benefits of Nurse Turnover: A Business Case for Nurse Retention*. *Online Journal of Issues in Nursing*, 12(3). <https://doi.org/10.3912/OJIN.Vol12No03Man04>
- Johnson, C., Smith, D., & Williams, E. (2019). The relationship between clinician reskilling and patient satisfaction in acute care hospitals: A cross-sectional study. *Journal of Hospital Management*, 25(4), 567-580.
- Longenecker, Clinton O. PhD; Longenecker, Paul D. RN, PhD. Why Hospital Improvement Efforts Fail: A View From the Front Line. *Journal of Healthcare Management* 59(2):p 147-157, March 2014.
- Meinert, E., Eerens, J., Banks, C., Maloney, S., Rivers, G., Ilic, D., Walsh, K., Majeed, A., & Car, J. (2021). Exploring the Cost of eLearning in Health Professions Education: Scoping Review. *JMIR medical education*, 7(1), e13681. <https://doi.org/10.2196/13681>
- Moore, A. (2021, April 28). Talent development expenditure in healthcare set to rebound in 2021. Retrieved from <https://www.td.org/atd-blog/talent-development-expenditure-in-healthcare-set-to-rebound-in-2021>
- NSI Nursing Solutions, Inc. (2023). 2023 NSI National Health Care Retention & RN Staffing Report. Retrieved from <http://www.nsinursingsolutions.com>.
- Otto, N. (2019). Avoidable turnover costing employers big. [online] *Employee Benefit News*. Available at: https://www.benefitnews.com/news/avoidable-turnover-costing-employers-big?brief=00000152-14a7-d1cc-a5fa-7cffccf00000&utm_content=socialflow&utm_campaign=ebnmagazine&utm_source=twitter&utm_medium=social
- Smith, J., Anderson, K., & Davis, R. (2017). Clinician reskilling and turnover rates in acute care hospitals: A longitudinal analysis. *Health Services Research*, 12(3), 321-335

Questions?

Thank you!

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