



CLINIC OPERATIONS EFFICIENCY ANALYSIS

Needs Analysis, Root-Cause Identification, and Intervention Recommendation

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TERMS AND DEFINITIONS

Term	Definition
DRNC	Dermatology, Rheumatology, Neurology, Cardiology — the four specialties of the practice
APP	Advanced Practice Provider (Nurse Practitioner or Physician Assistant)
EMR	Electronic Medical Record — the digital system (EPIC) used for patient records and communication
RVU	Relative Value Unit — the standardized unit of measurement in the Medicare Physician Fee Schedule used to calculate reimbursement for physician services
S2D	Staffing to Demand — a data-driven model that aligns workforce levels with actual and forecasted patient demand, using MGMA-benchmarked productivity metrics
SWOT	Strengths, Weaknesses, Opportunities, Threats — a strategic analysis framework applied to the organizational interview data
7S Model	McKinsey 7S organizational analysis framework: Strategy, Structure, Systems, Shared Values, Skills, Style, Staff
JTA	Job Task Analysis — systematic documentation of physician task activities integrated with financial reimbursement data
MGMA	Medical Group Management Association — industry benchmarking organization for medical practice operations
SMD	Standardized Mean Difference — an effect size metric used for comparing intervention outcomes against published benchmarks

EXECUTIVE SUMMARY

DRNC Partners, a private multi-specialty medical practice in metro Atlanta, Georgia, engaged our firm to identify opportunities to improve operational efficiency without diminishing patient care quality. The partners initially requested a training intervention to improve nursing staff efficiency in responding to patient communications in the Electronic Medical Record (EMR) system.

Our analysis determined that a training intervention was a legitimate need — but also revealed a deeper root cause that efficiency training alone could not address. A three-phase needs analysis (organizational analysis, job task analysis, and root-cause analysis) confirmed that more than 65% of incoming patient contacts were traceable to two preventable causes: follow-up questions from patients who could not retain information delivered during emotionally overwhelming appointments (30%+), and anxiety-driven inquiries from patients or family members who had sought information from unreliable online sources (35%).

We framed the communication challenge using a supply-and-demand model grounded in Staffing to Demand (S2D) principles. The patient population (demand) was consuming all available communication capacity (supply), but the clinic could not sustainably resolve the imbalance by increasing supply alone. Our analysis concluded that an effective response required a complementary, two-component intervention addressing both sides of the equation.

Recommended Intervention: Complementary Approach

Component 1 — Patient Education Series (Demand Reduction): A self-paced, asynchronous patient education program that physicians can assign to newly diagnosed patients, providing reliable, physician-vetted information when patients are emotionally ready to engage cognitively.

Component 2 — Staff Efficiency Training (Supply Optimization): Targeted training for clinic staff to improve EMR workflow efficiency, communication skills, and technology proficiency in handling the communications that remain after demand reduction.

The complementary approach requires a first-year investment of approximately \$450,000 but becomes substantially more cost-effective than the staffing alternative over time (~\$465,000 cumulative at three years vs. \$780,000 for increased staffing alone). More importantly, it directly responds to the client's original request (improve staff efficiency) while also addressing the root cause the analysis revealed (excessive demand from patient information gaps).

ORGANIZATION PROFILE

DRNC Partners is a private medical practice owned and operated by four physicians with distinct specialties: Dermatology, Rheumatology, Neurology, and Cardiology (DRNC). The practice serves patients from the greater Atlanta, Georgia metropolitan area and employs 23 total staff: 4 Physicians, 6 Advanced Practice Providers (APPs), 7 Registered Nurses (RNs), and 6 Administrative Staff. The physicians also provide consultation services at a local affiliated hospital.

The practice employs several Advanced Practice Providers who, under physician supervision, provide patient care with limited oversight. This model allows physicians to be accessible for initial visits, consults, complex assessments, and follow-up visits while APPs manage routine patient care. The practice utilizes the EPIC Electronic Medical Record system for all clinical documentation, patient communication, and billing operations.

An organizational culture assessment conducted through structured interviews organized around seven organizational dimensions (the McKinsey 7S Model) and analyzed using a SWOT framework revealed a patient-centered culture with exceptional employee retention, a collaborative physician-APP relationship built on psychological safety, and a consensus-driven governance model. The full SWOT analysis is provided as a separate deliverable.

SWOT Summary

Strengths: Patient-centered culture, physician-owned governance, exceptional retention, multi-specialty agility, EPIC EMR infrastructure.

Weaknesses: Unsustainable communication demand (65% preventable), patient education as lowest-efficiency RVU activity, EMR training gaps, limited reimbursement for education.

Opportunities: Reduce 65% preventable communications, improve medication compliance, scale across specialties, reclaim provider time for higher-RVU activities.

Threats: Implementation burden during high-stress period, regulatory/clinical guideline changes, technology obsolescence, digital literacy barriers in patient population.

ENGAGEMENT OVERVIEW

Following initial stakeholder interviews, we determined that a full needs analysis would be more appropriate than developing the requested training intervention. While the partners initially sought nursing staff efficiency training for EMR communication management, our preliminary assessment indicated that the communication volume problem might have deeper structural causes that training alone would not resolve.

The engagement was structured into three phases, each building on the findings of the previous phase. This approach is grounded in Staffing to Demand (S2D) principles — a data-driven methodology used in healthcare workforce planning that aligns staffing levels with actual and forecasted patient demand rather than historical headcount. The S2D model uses MGMA-benchmarked productivity metrics (such as RVU generation per FTE and patient encounters per provider) to establish whether an organization's workforce is appropriately sized for its workload. Applied to this engagement, S2D required first quantifying the demand the workforce was responding to, then determining whether the gap was a supply problem (insufficient staff capacity or capability), a demand problem (excessive or preventable workload), or both. This distinction is critical: the appropriate intervention for a supply gap (hiring or training) differs fundamentally from the appropriate intervention for a demand gap (reducing the workload itself).

Phase	Method	Purpose
Phase 1: Organizational Analysis	McKinsey 7S Model structured interviews with all 23 employees, analyzed via SWOT framework	Identify dominant operational concerns across all organizational dimensions
Phase 2: Job Task Analysis	Two-part cognitive task analysis (group interview + individual time allocation) integrated with 12+ months of RVU reimbursement data	Quantify how physician time is allocated and identify efficiency gaps using a custom RVU efficiency metric
Phase 3: Root-Cause Analysis	Supply-and-demand economic framing applied to communication data from EMR logs, voicemails, and website feedback	Distinguish between demand-driven and supply-driven causes and determine the appropriate intervention type

KEY FINDINGS

Organizational Analysis

We used the McKinsey 7S Model to evaluate the organization across seven dimensions: strategy, structure, systems, shared values, skills, style, and staff. All 23 employees completed anonymous structured interviews designed to capture candid perspectives on each dimension. The interview data was then analyzed using a SWOT framework to produce actionable strategic insights.

The dominant theme across the organizational analysis was Patient Communication. Under the Staff dimension, all responses focused on the volume of patient contacts — by phone, voicemail, or EMR message — and the impact on staff workload. Under the Skills dimension, respondents identified technology proficiency and EMR training adequacy as areas requiring development, consistent with

research showing 43% of clinical staff rate initial EHR training as insufficient (EHR in Practice, 2023) and only 16% of medical groups conduct formal skills gap analyses (MGMA, 2024). The full coded survey responses are provided in Appendix A.

Job Task Analysis — Physicians

To mitigate bias inherent in self-reporting, we divided the JTA into two parts. First, the four physicians participated in a group interview to reach consensus on task categories and activities. Then, each physician independently reported time allocation percentages. This two-part approach produced converging estimates that increased confidence in the data.

We integrated the time allocation data with 12+ months of RVU (Relative Value Unit) reimbursement records to create a custom efficiency metric: $\text{RVU Efficiency} = \text{RVU Multiplier} / \text{Category Hours per Month}$. The RVU Multiplier is a binary indicator (1 or 0) representing whether a task activity directly generates reimbursable value under the Medicare Physician Fee Schedule. Activities marked 1 are billable clinical services; activities marked 0 are either administrative overhead (marked N for non-generating) or dependent activities (marked D) that support but do not independently generate RVUs. The resulting efficiency metric provides a standardized comparison of how effectively each billable task generates reimbursable value per unit of time invested.

Key Efficiency Finding

The most efficient reimbursable task is Consult Services Differential Diagnosis (RVU Efficiency: 0.133). The least efficient is Patient Education Communication (RVU Efficiency: 0.035) — physicians earn less than half the reimbursable value per hour spent on patient education communication compared to most other clinical activities. A complete RVU efficiency analysis is provided in Appendix B.

The RVU efficiency finding directly informs the intervention logic: because clinician-delivered patient education generates low reimbursable value relative to other clinical activities, shifting patient education to a self-paced asynchronous format would free physician time for higher-RVU activities (such as differential diagnosis and clinical consultations) while simultaneously reducing the communication demand that drives the operational problem. The analysis also revealed that communication tasks in the EMR (Documentation in the EMR: Communication) consumed significant provider time at moderate skill levels, suggesting that targeted EMR workflow training could improve the efficiency of handling the communications that remain after demand reduction.

Root-Cause Analysis

Given the organizational analysis identifying communication volume as the primary concern and the JTA quantifying the efficiency cost, we conducted a root-cause analysis to determine the nature of the communication demand. We assessed the strongest drivers of patient communication by reviewing 12 months of redacted communication records across three data sources: EPIC EMR patient messages, voicemail transcriptions logged by nursing staff, and patient feedback submitted

through the practice website. Each communication was categorized by its primary driver using a three-category coding scheme developed from the organizational analysis themes: (1) post-visit information recall failure, (2) anxiety driven by external information sources, or (3) legitimate clinical inquiry.

More than 30% of messages were follow-up questions about information from the patient visit that was forgotten or unclear — patients asking their care team to repeat information that had been provided during the diagnostic appointment. An additional 35% were anxiety-driven inquiries from patients or family members who had obtained inaccurate or alarming information from unvetted internet sources, often identifiable by specific references to online content or by the nature of the questions (e.g., asking about conditions or side effects not relevant to their diagnosis). Together, these two categories accounted for more than 65% of all incoming patient contacts. The remaining 35% represented legitimate clinical interactions — symptom changes, medication questions, scheduling needs, and referral follow-ups — that constitute the irreducible clinical communication workload.

We framed the communication challenge using supply-and-demand economics, consistent with the S2D methodology. The patient population (demand) was consuming all available communication capacity (supply), but the clinic could not raise prices or refuse service. Increasing supply alone — through additional staffing or efficiency training — would not sustainably resolve the issue, because latent demand would absorb any new capacity. Reducing demand alone — through patient education — would not address the legitimate efficiency gaps the client identified in their original request.

Root-Cause Conclusion

The problem was primarily demand-driven, but required a **complementary solution** that also addressed staff efficiency. The remaining 35% of communications represent legitimate clinical interactions that can be made more efficient through targeted EMR workflow training and communication skills development.

RECOMMENDATION: COMPLEMENTARY INTERVENTION

Based on the three-phase needs analysis, we recommend a complementary, two-component intervention that directly responds to the client's original request while also addressing the root cause the analysis uncovered. Neither component carries the full burden: patient education reduces the volume of avoidable communications, and efficiency training improves the handling of necessary ones. Together, they address both the root cause and the presenting symptom.

Component 1: Patient Education Series (Demand Reduction)

When patients are first informed of a new chronic diagnosis, the experience can be overwhelming — combining the emotional toll of the discovery, the reaction of family members, and a physician who is speaking at a level they cannot fully absorb. A self-paced patient education program enables patients to access reliable, physician-vetted information when they are emotionally ready to engage cognitively. The program serves as a credible alternative to unvetted online sources that currently generate anxiety-driven communications.

Purpose: Develop a sustainable, self-paced, asynchronous patient education program for the patient population of a private multi-specialty clinical practice. The program will enable patients to access reliable medical information on demand, reducing unnecessary contacts with nursing and clinical staff.

Instructional Goals: Improve patient outcomes by providing self-paced education options that do not require additional healthcare provider time. Subordinate goals include increasing medication compliance confidence, improving patient understanding of when and how to seek help, providing tools for productive neurologist conversations, and connecting patients to community support resources.

Organizational Goals: Reduce incoming phone calls and messages regarding patient care inquiries. The aggregate impact of improved medication adherence will include fewer admissions for severe episodes and less time spent by nursing staff per patient in their initial post-diagnosis year.

Pilot Cohort: Seizure patients in the Neurology practice — specifically, patients newly diagnosed with Generalized Epilepsy Tonic-Clonic Seizures (GETCS) and focal seizures. The Neurology practice area was selected for the pilot because (a) seizure diagnoses generate among the highest volumes of anxiety-driven patient communication due to the acute safety implications and lifestyle restrictions (driving, employment, activity limitations), and (b) the Neurology partner initiated the engagement and serves as the project champion, providing both clinical subject matter expertise and organizational buy-in for the pilot.

Component 2: Staff Efficiency Training (Supply Optimization)

Targeted training for clinic staff addresses the client's original request and is supported by the analysis findings. This component focuses on:

EMR Workflow Optimization: Processing patient messages more efficiently within the EPIC system.

Communication Skills Development: Evidence-based frameworks (e.g., the R.E.D.E. model for relationship-centered care; AAFP, 2017) for handling patient interactions.

Technology Proficiency Training: Addressing the EHR adoption barriers documented in the literature (43% of clinical staff rate initial EHR training as insufficient).

Structured Competency Assessments: At 30, 90, and 180-day intervals (Oncology Practice Management, 2022).

Cost-Benefit Analysis

We modeled three intervention scenarios to provide the partners with a clear financial comparison. The patient education projections assume 4 total hires (3 Instructional Designers and 1 Project Manager) working remotely on 12-month contracts, with detailed formula derivations in Appendix C. The staffing alternative assumes hiring 2 additional Registered Nurses and 1 Receptionist at competitive Atlanta-area salaries plus benefits, creating approximately \$260,000 in annual personnel costs.

Metric	Patient Education Only	Increased Staffing Only	Complementary Approach (Recommended)
Year 1 Investment	\$436,189	\$260,000	~\$450,000
3-Year Cumulative	~\$437,447	\$780,000	~\$465,000
Addresses Demand (Root Cause)	Yes	No	Yes
Addresses Supply (Client Request)	No	Partially	Yes
Ongoing Annual Cost	~\$629 (hosting)	\$260,000+ (salaries & benefits)	~\$15,000 (hosting + training refresh)
Scalable Across Specialties	Yes	No	Yes

The patient education component requires a higher initial investment than the staffing alternative but becomes nearly cost-free after the first year (\$629/year server hosting). The staffing approach creates a permanent annual cost obligation of \$260,000+ (2 RNs at approximately \$75,000–85,000 salary plus benefits each, plus 1 Receptionist at approximately \$45,000–55,000 plus benefits) while addressing only the supply side of the problem.

The complementary approach costs marginally more than patient education alone in Year 1 (~\$14,000 for the training development component, based on comparable competency-based training programs documented in the Oncology Practice Management framework) but substantially less than the staffing alternative over time. The 3-year cumulative figure adds education maintenance (\$629/year) plus estimated annual training refresh costs (~\$14,000/year) to the Year 1 base.

Assumptions Disclosure

Each column in the cost-benefit comparison rests on stated assumptions and contains known exclusions. The patient education column uses fully documented formula derivations (Appendix C). The complementary approach training estimates are based on comparable competency-based training programs (Oncology Practice Management, 2022) and should be treated as order-of-magnitude estimates pending detailed training design. All columns exclude potential revenue recovery from provider time recaptured. A detailed assumptions and exclusions table is provided in Appendix D, and a structured client data framework for expanding the analysis is provided in Appendix E.

Success Criteria

Success criteria have been calibrated against published meta-analytic benchmarks from epilepsy self-management education research:

Metric	Target	Benchmark Source
Hospital admissions reduction (medication noncompliance)	5% reduction	Goh et al. (2023): low certainty evidence for modest reduction
Patient confidence improvement	SMD ≥ 0.30 for self-efficacy (ESES or equivalent)	Huang et al. (2025): SMD = 0.32 for epilepsy self-management education
Patient education communication volume reduction	10% reduction	Conservative estimate; no direct benchmark available
Staff-reported efficiency improvement	Measurable improvement on post-training survey	Component 2 tracking metric
Quality of life improvement	SMD ≥ 0.40 (QOLIE-31 or equivalent)	Huang et al. (2025): SMD = 0.56 for QoL

Why 10% When 65% Is Preventable?

The 65% figure represents the proportion of incoming contacts traceable to preventable causes. The 10% communication volume reduction target reflects a conservative estimate of the achievable near-term impact, accounting for three factors: not all eligible patients will be referred to or complete the education program (estimated 60% referral-to-completion rate); patients who do complete the program may reduce but not eliminate their preventable communications; and behavioral change takes time to manifest in measurable volume reductions. The 10% target is set as a minimal clinically meaningful reduction for the initial evaluation window. If pilot data

confirms higher engagement and completion rates, the target can be recalibrated upward.

APPENDIX A: ORGANIZATIONAL ANALYSIS DATA

7S Model — Coded Survey Responses

The following table presents coded responses from anonymous structured interviews conducted with all 23 employees. Interviews were organized around seven organizational dimensions (McKinsey 7S Model) and analyzed using a SWOT framework. The dominant theme across all dimensions was Patient Communication.

Element	Question	Response
Strategy	How should we proceed to resolve the specific business problem our organization is experiencing?	Improve ourselves to be the team we know we can be.
Strategy	What is our strategy and its priorities?	Patient Centered Care that considers the Whole Patient, not a billable unit.
Strategy	How will we achieve our strategic objectives?	By delivering best in class patient care that leaves our patients confident in their care team.
Strategy	How do we compete in the market?	By providing comprehensive care where the patient is not siloed into one specialty.
Strategy	What is the organization's response to changing market conditions?	Regulation is the master of all practices similar to ours. The practice must adapt to regulatory changes swiftly.
Structure	How is our organization organized?	The four partners lead together; all major decisions require consensus.
Structure	How are reporting and working relationships structured?	23 employees total. Each APP has a physician supervisor. Nursing staff report to lead RN.
Structure	What is our process for making decisions?	Major decisions are made by the four Physician Partners with required consensus.
Structure	How are our employees aligned with the strategy?	We align the interests of our employees with our strategy by respecting their professional expertise.
Structure	How does the organization share information?	We use information radiators to disseminate any policy decisions that are made.
Systems	Is it possible to execute the strategy with the existing business processes?	Yes.
Systems	How do we track progress and evolution?	We use Project Management software to track our long-term goals and OKRs.
Systems	What internal processes and rules do we follow?	We utilize the EMR and billing practices as dictated by Medicare and our payer agreements.
Shared Values	What principles help us to achieve our goals?	Professional Respect for Providers, be they Physician or APP.
Shared Values	What makes us do what we do in the way we do it?	Regulations set the minimum bar, but our commitment to patient care sets the actual standard.
Shared Values	What is the mission of our organization?	To provide comprehensive care for our patient population across our four specialties.
Shared Values	What is our vision to get there?	Coordination within our Practice and Beyond to make sure we care for the whole patient.
Shared Values	What are our core values?	Patient First. Give the Respect You Expect. Know What You Do and Do It to the Best of Your Ability.

Element	Question	Response
Shared Values	How are we incorporating them into daily activities?	APPs have the freedom to practice the way they are most comfortable as long as they meet the standard.
Skills	What are the specific skills we will need?	Maintaining knowledge of developments in Medical Science. Expertise in our specific areas.
Skills	What skills should we develop?	Business Management Skills and Marketing Skills.
Skills	Is the employee's skill set sufficient for the job?	Yes, but we need to be able to do more than we are doing currently with the same number of staff.
Skills	How do we monitor, assess, and improve skills?	Currently we perform annual reviews, but we are not finding them to be effective tools for improvement.
Style	What leadership style will help us achieve a strategic objective?	Respect and Open Communications.
Style	What is our current management approach?	Respect and Open Communications.
Style	How are our employees responding to it?	We have received rave reviews from staff and have experienced low turnover.
Staff	Is there anything we can do to support the growth of our team?	Professional Development Opportunities and in-house training.
Staff	What are the current staffing needs?	We are focused on empowering the staff we have to do the job without burning them out.
Staff	Are there any gaps in required capabilities or resources?	We feel like we are always behind on responding to patient communications.
Staff	What is our plan for addressing those needs?	Efficiency training.

APPENDIX B: RVU EFFICIENCY ANALYSIS

The following table presents an RVU efficiency analysis that integrates physician self-reported time allocation with reimbursement data for June 2022 through June 2023. The RVU Efficiency metric represents how effectively each task activity converts provider time into reimbursable value: $\text{RVU Efficiency} = \text{RVU Multiplier} / \text{Category Hours per Month}$.

The analysis reveals a clear hierarchy of efficiency. Consult Services Differential Diagnosis generates the highest RVU return at 0.133 per provider hour — physicians earn more than twice the reimbursable value per hour spent on differential diagnosis compared to most other clinical activities. Patient Education activities cluster between 0.035 and 0.088, confirming that patient education is among the least efficient activities in terms of RVU generation. Administration and Documentation communication tasks generate zero RVUs, representing pure overhead.

Task Category	Task Activity	Cat Hrs/Mo	Act Hrs/Mo	RVU Mult	RVU Eff	RVU Act	% of Cat
Administration	Communication	8	2.4	0	0	N	30%
Administration	Meetings	8	4.8	0	0	N	60%
Administration	Prof. Development	8	0.8	0	0	N	10%
Clinical Services	Chart Review	76	19	1	0.083	Y	25%
Clinical Services	Communication	76	19	1	0.083	Y	25%
Clinical Services	Differential	76	19	1	0.083	Y	25%
Clinical Services	Order Entry	76	19	0	0	D	25%
Consult Services	Chart Review	76	15.2	1	0.067	Y	20%
Consult Services	Communication	76	15.2	1	0.067	Y	20%
Consult Services	Differential	76	30.4	1	0.133	Y	40%
Consult Services	Order Entry	76	7.6	0	0	D	10%
Consult Services	Triage	76	7.6	0	0	N	10%
Documentation (EMR)	Billing	18	7.2	0	0	D	40%
Documentation (EMR)	Communication	18	3.6	0	0	N	20%
Documentation (EMR)	Order Entry	18	7.2	0	0	D	40%
Patient Education	Care Management	40	20	1	0.088	Y	50%
Patient Education	Communication	40	8	1	0.035	Y	20%
Patient Education	Meetings	40	12	1	0.053	Y	30%
Supervision	Chart Review	10	3	0	0	N	30%

Task Category	Task Activity	Cat Hrs/Mo	Act Hrs/Mo	RVU Mult	RVU Eff	RVU Act	% of Cat
(APPs)							
Supervision (APPs)	Communication	10	6	0	0	N	60%
Supervision (APPs)	Triage	10	1	0	0	N	10%

Legend: RVU Act column values: **Y** = generates RVUs directly; **D** = dependent on RVU-generating activity (indirect); **N** = does not generate RVUs.

APPENDIX C: PROGRAM DEVELOPMENT COSTS

The following table details the projected first-year development costs for the Patient Education Series component of the complementary intervention. All figures assume 4 total hires (3 Instructional Designers and 1 Project Manager) working remotely on 12-month contracts. Formula derivations are provided in the Notes column.

Category	Expense	Unit Cost	Program Total	Calculation
Direct	Instructional Designer (ID) Salary	\$50/hour/ID	\$312,000	$\$50 \times 3 \text{ IDs} \times 40 \text{ hrs/wk} \times 52 \text{ wks}$
Direct	Project Manager Salary	\$50/hour	\$104,000	$\$50 \times 1 \text{ PM} \times 40 \text{ hrs/wk} \times 52 \text{ wks}$
Indirect	Microsoft Office/Teams Licenses	\$70/year	\$280	$\$70 \times 4 \text{ staff}$
Indirect	Cellphone/Internet Stipend	\$150/month/staff	\$7,200	$\$150 \times 4 \text{ staff} \times 12 \text{ months}$
Indirect	Adobe Creative Cloud Licenses	\$55/month/ID	\$1,980	$\$55 \times 3 \text{ IDs} \times 12 \text{ months}$
Indirect	Articulate Storyline/Rise Licenses	\$100/month/ID	\$2,100	$\$100 \times 3 \text{ IDs} \times 7 \text{ months (design phase)}$
Indirect	Cloud Storage (Server Hosting)	\$52.41/month	\$629	$\$52.41 \times 12 \text{ months}$
Indirect	Equipment (Laptop/Office/Design Tools)	\$2,000/year/staff	\$8,000	$\$2,000 \times 4 \text{ staff}$

	Amount
Total Direct Costs	\$416,000
Total Indirect Costs	\$20,189
Year 1 Program Total	\$436,189
Ongoing Annual Cost (hosting only)	\$629

APPENDIX D: COST-BENEFIT ASSUMPTIONS AND EXCLUSIONS

Each column in the cost-benefit comparison rests on stated assumptions and contains known exclusions. The following table makes these boundaries explicit so that the comparison can be evaluated on its own terms (Levin et al., 2018).

Factor	Patient Education Only	Increased Staffing Only	Complementary Approach
Development costs	Fully documented with formula derivation (Appendix C)	N/A (no development required)	Education: same as Column 1. Training: ~\$14,000 estimate based on comparable programs (Oncology Practice Mgmt, 2022)
Ongoing maintenance	\$629/yr hosting. Excludes: content refresh cycles (est. 18–24 months), regulatory updates, platform licensing renewals, accessibility audits	Full annual salary + benefits. Excludes: recruitment costs, onboarding time, turnover replacement	\$15,000/yr est. (hosting + training refresh). Excludes: same content items as Column 1, plus competency reassessment costs
Revenue impact	Excludes: potential revenue recovery from provider time recaptured (low-RVU to higher-RVU activities)	Excludes: additional revenue from increased patient throughput	Excludes: combined revenue recovery from demand reduction and supply optimization
Indirect costs	Excludes: SME time during development (provider hours diverted from clinical work)	Excludes: management overhead for additional staff	Excludes: SME time for both components; coordination costs for dual-component rollout
Useful life	3-year useful life before major content overhaul	Ongoing (staff costs are perpetual)	3-year education content life; training refreshed annually

Note on Complementary Approach Estimates

The Year 1 figure (~\$450,000) is derived by adding the documented education development cost (\$436,189) to the estimated training development cost (~\$14,000). The 3-year cumulative figure (~\$465,000) adds education maintenance (\$629/yr × 2 = \$1,258) plus estimated annual training refresh costs (~\$14,000/yr × 2 = \$28,000) to the Year 1 base. Training cost estimates are based on comparable competency-based training programs and should be treated as order-of-magnitude estimates pending detailed training design.

APPENDIX E: CLIENT DATA FRAMEWORK

The current cost-benefit comparison captures direct costs but does not model revenue impact because the required data resides with the clinic. If DRNC Partners elects to expand the analysis, the following framework identifies the specific data points needed and the calculations they would enable. This framework is presented as a ready-to-populate structure, not as a recommendation that the clinic must provide this data.

Data Request 1: Revenue Recovery from Demand Reduction

Purpose: Estimate the revenue value of provider time currently consumed by preventable patient communications that the education intervention is designed to reduce.

Data Point	Source	How It Would Be Used
Average provider time per patient education interaction (minutes)	EMR time-tracking or provider self-report	Converts communication volume reduction into provider-hours recovered
Provider billing rate or average RVU value per hour	Practice financial records	Converts recovered provider-hours into revenue potential
Current monthly volume of patient education communications	EMR message logs, call logs	Establishes baseline for the 65% preventable communication estimate
Payer mix for new patient appointments	Billing records	Weights revenue recovery by reimbursement rate

Data Request 2: Revenue Potential from Additional Staffing

Purpose: Estimate the revenue that additional clinical staff could generate through increased patient throughput, which the staffing-only column currently excludes.

Data Point	Source	How It Would Be Used
Current patient throughput per provider per day	Scheduling records	Establishes whether throughput is currently capacity-constrained
Average revenue per new patient visit (by specialty)	Billing records	Values incremental throughput if communication burden is reduced
Estimated additional patients per day if communication load decreased	Provider estimate	Translates time savings into throughput capacity
Current appointment wait time for new patients	Scheduling records	Indicates whether latent demand exists

Data Request 3: Education Content Lifecycle Costs

Purpose: Refine the education program's ongoing maintenance estimate beyond the \$629/year hosting figure.

Data Point	Source	How It Would Be Used
Estimated frequency of clinical guideline changes (per specialty)	Physician partners / specialty board publications	Determines content refresh cycle frequency
Hourly rate for contracted	ID contractor market rate or	Prices each content refresh cycle

Data Point	Source	How It Would Be Used
instructional design updates	internal staff allocation	
Platform licensing costs (Articulate Rise or custom hosting)	Vendor pricing	Replaces the \$629 hosting estimate with actual platform costs
Accessibility audit frequency and cost	Compliance requirements / vendor quotes	Adds periodic accessibility maintenance to ongoing costs

Framework Usage

This framework is designed to be delivered to the client as part of the implementation plan. If the client provides the requested data, the instructional designer can populate the framework and produce a revised comparison with revenue offsets and refined maintenance estimates — converting the current cost comparison into a more complete cost-benefit analysis.

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