HealthWeave

AI-Powered Health Data Synthesis & Clinical Insights

Transforming Patient Data into Actionable Clinical Intelligence

CONFIDENTIAL BUSINESS PROPOSAL

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Table of Contents

Executive Summary

HealthWeave is an AI-powered platform that synthesizes patient health data with current medical literature to generate actionable clinical insights and doctor-ready reports. The platform addresses a critical gap in healthcare: patients have scattered health data across multiple sources with no way to understand trends, correlations, or clinical implications.

Key highlights:

- **Market Opportunity:** $4.2B patient engagement market, growing at 18% CAGR
- **Target Users:** 133M Americans with chronic conditions who need frequent monitoring
- **Distribution Strategy:** Integration with existing hospital patient portals for instant access to thousands of users
- **Business Model:** B2B SaaS: $5-10 per patient per month, hospitals pay or revenue share with patients
- **Differentiation:** Proper citation of peer-reviewed literature, synthesis vs. simple data display, doctor-ready reports
- **Traction:** Proof of concept validated with complex patient case (CLL + liver disease), ready for pilot
- **Initial Target:** Erie County Medical Center pilot (40,000+ patients), expanding to FollowMyHealth network (40M patients)
- **Financial Projection:** $1.2M ARR potential within 12 months with 10 hospital deployments

HealthWeave represents a unique convergence of validated patient need, technical feasibility (enabled by recent AI advances), and clear distribution channel through existing healthcare infrastructure. The founder is both the developer and the first user, ensuring deep problem understanding and authentic product development.

The Problem

Patient Perspective

- Health data is scattered across multiple portals, apps, and paper records
- Lab results show numbers without context or explanation of clinical significance
- No way to identify trends or correlations across different test types
- Difficult to prepare informed questions for doctor appointments
- Medical research is inaccessible and difficult to understand
- Chronic disease patients must monitor multiple interacting conditions
- Current patient portals simply display data without analysis or insights

Physician Perspective

- Patients arrive uninformed or misinformed (WebMD, social media)
- Significant appointment time spent explaining basic test results
- Difficult to see longitudinal trends when data is in different systems
- Patients struggle to connect recommendations to their specific data
- Lack of tools to help patients understand complex multi-system conditions
- Burnout partially driven by repetitive patient education

Healthcare System Perspective

- Patient engagement scores directly impact CMS reimbursement
- Low patient portal utilization despite significant investment
- Poor patient understanding leads to worse outcomes and higher costs
- Medication non-adherence costs healthcare system $290B annually
- Hospital readmissions (many preventable) cost $25B annually
- Need to differentiate in competitive healthcare market

The Impact: Patients make poorly informed decisions, physicians spend valuable time on basic education, and healthcare systems achieve suboptimal outcomes while facing financial penalties for low engagement.

The Solution

HealthWeave is an AI-powered platform that automatically synthesizes patient health data with current medical literature to generate personalized, actionable clinical insights delivered through existing patient portal infrastructure.

Core Capabilities

- **Data Aggregation:** Imports health data from labs, wearables, patient-entered information, and medical records
- **Intelligent Analysis:** AI identifies trends, correlations, and anomalies across multiple data sources
- **Literature Synthesis:** Connects patient-specific findings to current peer-reviewed medical research
- **Report Generation:** Creates doctor-ready reports with proper citations and clinical context
- **Actionable Insights:** Provides personalized recommendations based on individual patient data patterns
- **Longitudinal Tracking:** Monitors trends over time and flags concerning trajectories
- **Question Preparation:** Generates informed questions for patients to ask their physicians

What Makes It Different

- Proper Citation: Every clinical claim is backed by peer-reviewed literature with full references
- Synthesis, Not Just Display: Connects disparate data points to identify meaningful patterns
- Doctor-Ready Output: Professional reports physicians actually appreciate and engage with
- Portal Integration: Works within existing healthcare IT infrastructure, not another app to download
- Condition-Specific Intelligence: Understands complex interactions between multiple chronic conditions
- Patient-Centric Design: Built by a patient with chronic conditions who needed this tool
- Privacy-First: HIPAA-compliant architecture, data never sold or shared

Market Opportunity

Market Size

Market Segment	Size	Growth Rate
Patient Engagement Platforms	$4.2B (2024)	18% CAGR
Healthcare AI Market	$20.9B (2024)	38% CAGR
Remote Patient Monitoring	$2.7B (2024)	22% CAGR
Digital Health Overall	$211B (2024)	19% CAGR

Target Customer Segments

Primary: Hospital Systems & Health Networks

- 5,000+ hospitals in the United States
- Average 10,000-50,000 active patient portal users per hospital
- Strong incentive to improve patient engagement (CMS penalties/bonuses)
- Active investment in AI and digital health initiatives
- Budget allocation: $50K-500K for patient engagement tools annually

Secondary: Patient Portal Vendors

- Epic MyChart: 250M+ patients
- Cerner Health: 200M+ patients
- FollowMyHealth (Allscripts): 40M+ patients
- Vendors seek differentiation and value-add features
- Platform-level integration = massive distribution

Tertiary: Direct to Patients (Long-term)

- 133M Americans with chronic conditions
- 60M with multiple chronic conditions
- High willingness to pay for health management tools

- Growing comfort with AI-powered healthcare tools

Beachhead Market: Chronic Disease Patients

Initial focus on patients with complex chronic conditions who require frequent monitoring and coordination across multiple specialists:

- Cancer patients (especially blood cancers like CLL): 2M+ in active treatment
- Liver disease patients (NAFLD/NASH): 100M Americans, 20M with advanced disease
- Diabetes patients: 37M, requiring frequent monitoring
- Cardiovascular disease: 126M Americans
- Autoimmune conditions: 24M Americans

Key Insight: These patients are high-value to hospitals (high utilization, complex care), highly engaged (motivated by serious conditions), and underserved by current tools. A solution that improves their care and engagement has immediate ROI for healthcare systems.

How It Works

For Patients

1. Access: Log into existing patient portal (no new app to download)

2. Connect: System automatically accesses available health data from portal

3. Upload: Optionally upload additional documents (outside labs, wearable data)

4. Analyze: Click "Generate Insights" - AI analyzes all available data

5. Review: Receive easy-to-understand dashboard with trends and correlations

6. Report: Generate doctor-ready PDF report with citations

7. Prepare: Review suggested questions to ask physician

8. Share: Report automatically available to care team through portal

For Physicians

- Patient generates report before appointment
- Report appears in physician dashboard with alert
- Physician reviews 1-2 page summary (2-3 minutes)
- Key findings, trends, and patient questions highlighted
- Full report with citations available if deeper review needed
- More efficient, informed appointment conversation
- Documentation automatically added to patient chart

For Hospital Systems

- IT integration with existing patient portal (API-based)
- White-label interface matches hospital branding
- Pilot with selected patient cohort (e.g., oncology, complex chronic)
- Monitor engagement and satisfaction metrics
- Expand to additional departments based on success
- Aggregate analytics show population health trends
- Demonstrate improved patient engagement scores to CMS

Business Model

Revenue Streams

Primary: B2B SaaS (Hospital/Health System Licensing)

- Per-patient-per-month subscription model
- Pricing tier based on patient portal size:
- - Small systems (<10K patients): $8/patient/month
- - Medium systems (10-50K patients): $6/patient/month
- - Large systems (>50K patients): $5/patient/month
- Hospital pays, free to patients
- Annual contracts with monthly billing
- Minimum pilot: $2,500/month (500 patients)

Secondary: Platform Integration (Portal Vendor Partnerships)

- License technology to patient portal vendors (Epic, Cerner, FollowMyHealth)
- Revenue share model: $1-2 per patient per month
- Platform vendor charges $3-5/patient/month to hospitals
- Massive distribution in exchange for lower per-patient revenue
- Long-term strategic play for scale

Tertiary: Direct to Consumer (Future)

- Freemium model for patients not in partner hospitals
- Free: Basic data aggregation and simple insights
- Premium ($19.99/month): Full AI analysis, report generation, research synthesis
- Family plan ($29.99/month): Up to 4 family members
- Acquisition channel for B2B sales (prove value, then sell to their hospital)

Unit Economics

Metric	Value
Average Revenue per Patient per Month	$6.00
Cost of Goods Sold (AI API, hosting, etc.)	$0.50
Gross Margin	92%
Customer Acquisition Cost (B2B)	$5,000 per hospital
Average Hospital Size	20,000 patients
Adoption Rate (conservative)	10% = 2,000 active users
Monthly Revenue per Hospital	$12,000
Annual Revenue per Hospital	$144,000
CAC Payback Period	~4 months
Lifetime Value (3-year contract)	$432,000
LTV:CAC Ratio	86:1

Go-To-Market Strategy

Phase 1: Proof of Concept (Months 1-3)

- Build MVP with core functionality
- Validate with founder's own health data (CLL + liver disease case)
- Recruit 10-15 beta users with chronic conditions
- Gather testimonials and feedback
- Refine product based on real-world usage
- Create compelling demo materials
- Cost: <$5,000 (bootstrapped)

Phase 2: Initial Pilot (Months 4-9)

- **Target:** Erie County Medical Center (ECMC) - founder is patient there
- **Approach:** Warm introduction through existing physician relationships
- **Pitch:** Free pilot with 100-200 patients (complex chronic conditions)
- **Duration:** 3-6 months pilot period
- **Success Metrics:** Patient satisfaction >80%, physician approval >75%, engagement >60%
- **Deliverable:** Case study with quantified results (engagement, satisfaction, outcomes)
- **Investment:** Founder time + <$10K operating costs

Phase 3: Local Expansion (Months 10-15)

- Leverage ECMC case study to approach other Buffalo-area hospitals
- Target: Roswell Park Cancer Institute, Buffalo General, Kaleida Health system
- Pricing: $5K-15K/month depending on patient population
- Goal: 3-5 hospital deployments
- Revenue target: $200K-500K ARR
- Begin building sales/support infrastructure

Phase 4: Regional & Platform Strategy (Months 16-24)

- **Regional Expansion:** Expand to other New York hospitals, then adjacent states
- **Platform Partnership:** Approach FollowMyHealth (ECMC's portal vendor) with case studies
- **Pitch:** "Already deployed in 5 hospitals with strong results, integrate into your platform"
- **Distribution:** FollowMyHealth integration = access to 40M patients across 600+ hospitals
- **Revenue Model:** Revenue share with FollowMyHealth ($1-2 per active patient per month)
- **Goal:** Sign partnership agreement, begin technical integration
- **Outcome:** Path to rapid scale through platform distribution

Phase 5: Scale (Months 25-36)

- Full FollowMyHealth platform integration complete
- Active in 50-100 hospitals through platform + direct sales
- Consider approach to Epic, Cerner with proven track record
- Build enterprise sales team
- Expand product features based on hospital feedback
- Target: $5-10M ARR
- Decision point: Bootstrap to profitability vs. raise capital for acceleration

Implementation Roadmap

Technical Development Timeline

Phase	Timeline	Deliverables
MVP Core	Weeks 1-8	• Manual data entry • Claude API integration • PDF report generation • Basic web interface • Test with founder
Beta Product	Weeks 9-16	• Document upload (PDF, images) • OCR integration • iOS app (SwiftUI) • Data persistence • 10-15 beta users
Pilot Version	Weeks 17-24	• Portal API integration • HIPAA compliance • Admin dashboard • Analytics tracking • White-label capability
Production v1.0	Weeks 25-36	• HL7 FHIR integration • Wearable data import • Advanced AI features • Multi-condition analysis • Enterprise security
Scale Platform	Months 10-24	• Multi-tenant architecture • Platform vendor APIs • Advanced analytics • Population health insights • Clinical decision support

Resource Requirements

- **Months 1-6 (MVP/Beta):** Founder (part-time), AI API ($100/mo), Cloud hosting ($100/mo)
- **Months 7-12 (Pilot):** Founder (full-time), Pilot costs ($500/mo), Infrastructure ($300/mo)
- **Months 13-18 (Expansion):** Founder + 1 developer, Sales/marketing ($5K/mo), Infrastructure ($1K/mo)
- **Months 19-24 (Scale):** Team of 3-4, Sales team (2), Infrastructure ($5K/mo), Marketing ($10K/mo)

Technical Architecture

System Components

- **Frontend:** iOS app (SwiftUI), Web dashboard (React), Portal integration widgets
- **Backend:** Python (FastAPI), RESTful APIs, WebSocket for real-time
- **AI Engine:** Claude API for analysis, Azure OpenAI (backup), Custom ML models (future)
- **Data Layer:** PostgreSQL (structured data), Azure Blob Storage (documents), Redis (caching)
- **Integration:** HL7 FHIR APIs, Portal vendor APIs (Epic, Cerner, FollowMyHealth), HealthKit/Google Fit
- **Infrastructure:** Azure Cloud Services, Kubernetes for container orchestration, CI/CD via Azure DevOps
- **Security:** HIPAA-compliant architecture, End-to-end encryption, SOC 2 Type II compliance (future)

Data Flow

- 1. Patient data ingested from portal APIs, uploaded documents, or manual entry
- 2. OCR extracts text from documents (Azure Computer Vision)
- 3. AI extracts structured data from unstructured text (Claude API)
- 4. Data normalized and stored in database
- 5. Analysis engine identifies trends, correlations, anomalies
- 6. AI searches medical literature for relevant research (PubMed API)
- 7. Report generation engine creates structured output
- 8. PDF rendered with proper formatting and citations
- 9. Report delivered to patient portal and stored in patient record
- 10. Analytics captured for improvement and hospital dashboards

Security & Compliance

- HIPAA Compliance: BAA with cloud providers, encrypted data at rest and in transit
- Authentication: OAuth 2.0, MFA support, SSO integration with hospital systems

- Authorization: Role-based access control, patient data isolation, audit logging
- Data Retention: Configurable retention policies, secure deletion, backup/recovery
- Monitoring: 24/7 system monitoring, intrusion detection, security incident response
- Compliance: SOC 2 Type II (planned), GDPR-ready architecture, state privacy laws

Scalability

Architecture designed for scale from day one:

- Microservices architecture for independent scaling of components
- Horizontal scaling via Kubernetes
- CDN for static assets and report delivery
- Database read replicas for query performance
- Asynchronous job processing for heavy AI workloads
- Caching strategy for frequently accessed data
- Can handle 100K+ patients per deployment, millions at platform level

Financial Projections

Three-Year Revenue Forecast

Metric	Year 1	Year 2	Year 3
Hospitals Deployed	3-5	15-25	50-100
Average Patients per Hospital	2,000	3,000	4,000
Total Active Patients	8,000	60,000	300,000
Avg Revenue per Patient/Month	$6.00	$6.00	$5.50
Monthly Recurring Revenue	$48K	$360K	$1.65M
Annual Recurring Revenue	$576K	$4.32M	$19.8M
Gross Margin	90%	92%	93%
Net Revenue	$518K	$3.97M	$18.4M

Expense Forecast

Category	Year 1	Year 2	Year 3
Personnel (salaries, benefits)	$150K	$800K	$2.5M
AI/Cloud Infrastructure	$25K	$120K	$400K
Sales & Marketing	$50K	$400K	$1.2M
Legal, Compliance, Insurance	$30K	$80K	$200K
Operations & Admin	$20K	$100K	$300K
TOTAL EXPENSES	$275K	$1.5M	$4.6M
NET PROFIT/LOSS	$243K	$2.47M	$13.8M
Cumulative Cash	$243K	$2.71M	$16.5M

Funding Requirements

Bootstrapped approach for first 12-18 months. Potential funding scenarios:

- **Bootstrap Only:** Founder funds first $50K, profitable by Month 12, reinvest profits for growth. Slower but maintains 100% equity.
- **Friends & Family ($100K):** Accelerate development, hire first employee sooner, expand marketing. 12-18 month runway.
- **Seed Round ($500K-1M):** Build full team, aggressive hospital expansion, fast-track platform partnerships. 18-24 month runway to profitability.
- **Strategic Partnership:** Partner with FollowMyHealth or similar platform vendor, co-development agreement, revenue share model.

Recommendation: Bootstrap through pilot phase, raise $500K-1M seed round after successful ECMC pilot to accelerate expansion. This approach validates product-market fit before raising capital.

Team & Qualifications

Founder: Garot Conklin

- Software engineer with healthcare domain expertise
- iOS development (Swift/SwiftUI) and Python backend development
- Azure DevOps and cloud infrastructure specialist
- Patient with complex chronic conditions (CLL + advanced liver disease)
- Deep understanding of patient pain points through lived experience
- Has been conceptualizing this solution for 10+ years
- Successfully validated concept through personal use case

Unique Founder Advantages

- **Patient Perspective:** Not building for hypothetical users - building for himself and others like him
- **Technical Capability:** Can build entire MVP solo, no outsourcing required
- **Healthcare Relationships:** Existing relationships with ECMC physicians and staff
- **Domain Knowledge:** Understands medical terminology, research literature, clinical workflows
- **Authentic Story:** Compelling narrative for media, investors, hospital decision-makers
- **Bias for Action:** Track record of shipping real projects, not just ideating

Future Team Needs

- **Months 6-12:** Full-stack developer for product acceleration
- **Months 12-18:** Sales/Business Development lead for hospital relationships
- **Months 18-24:** Clinical advisor (MD with informatics background), Marketing lead
- **Year 2+:** Customer success team, Additional engineers, Operations manager

Advisory Board (To Be Formed)

- Physician (MD) with patient engagement expertise

- Hospital CIO or CMIO with EHR integration experience
- Healthcare AI/ML expert
- Digital health regulatory/compliance specialist
- Healthcare executive with payer/provider relationships

Competitive Advantage

Competitive Landscape

Current market players and why HealthWeave is differentiated:

- **Apple Health / Google Fit:** Data aggregation only, no analysis or clinical insights, not integrated with hospital systems
- **MyChart / Patient Portals:** Display data but provide no interpretation, synthesis, or actionable recommendations
- **WebMD / Health Information Sites:** Generic information not personalized to patient data, no synthesis with actual lab results
- **Omada / Livongo:** Condition-specific coaching, not comprehensive data analysis across all conditions
- **IBM Watson Health:** Enterprise-focused, physician-facing, not patient-empowerment tool, expensive
- **Startups (HealthLoop, etc.):** Focus on specific use cases (post-discharge, etc.), not comprehensive health data synthesis

Defensible Differentiation

- **Portal Integration Strategy:** No one else is integrating AI-powered analysis directly into existing patient portals. This is the distribution moat.
- **Synthesis Over Display:** Competitors show data; we explain what it means in context of current research.
- **Proper Citations:** Peer-reviewed literature citations create trust with physicians that generic AI summaries lack.
- **Multi-Condition Intelligence:** Most solutions are condition-specific; we understand complex interactions across conditions.
- **Patient-First Design:** Built by a patient for patients, not by healthcare IT consultants.
- **First-Mover in AI Era:** AI technology just became viable in 2023-2024. We're early in leveraging it for patient empowerment.
- **Relationship-First Go-to-Market:** Starting with pilot at founder's own hospital creates authentic case study competitors can't replicate.

Barriers to Entry

- Hospital relationships and trust take years to build
- Portal vendor integrations require deep partnerships
- HIPAA compliance and healthcare IT expertise
- Clinical validation and physician credibility
- Understanding of complex medical conditions and interactions
- Quality of AI prompting and synthesis (not trivial)
- First-mover advantage in portal integration space

Risk Analysis & Mitigation

Risk	Probability	Impact	Mitigation Strategy
Hospital adoption slower than projected	Medium	High	Start with free pilots, focus on ROI metrics, build compelling case studies early
Regulatory/ compliance issues	Low	High	Engage healthcare legal counsel early, build HIPAA compliance into architecture from day 1
AI accuracy concerns	Medium	High	Always cite sources, position as synthesis tool not diagnostic, physician review workflow
Competition from big tech	Medium	Medium	Move fast, build hospital relationships, focus on integration advantage
Technical integration challenges	Medium	Medium	Start with simpler integrations, hire experienced healthcare IT talent
Founder capacity (solo)	Medium	Medium	Bootstrap carefully, hire strategically, leverage advisors
Physician resistance	Low	Medium	Design for physician workflow, show time savings, not replacement
Data privacy concerns	Low	High	Transparent data practices, never sell data, strong encryption, patient control

Success Metrics

Product Metrics

- Monthly Active Users (MAU): Target 60%+ of enrolled patients
- Report Generation Rate: Target 2+ reports per patient per month
- Report Quality Score: Physician rating >4/5
- Time to Insight: <2 minutes from data upload to report generation
- Patient Satisfaction: >80% NPS score
- Feature Adoption: Track usage of different analysis types

Clinical Impact Metrics

- Patient Engagement: Portal login frequency increase
- Appointment Efficiency: Reduction in time spent on basic education
- Medication Adherence: Improvement in medication compliance
- Patient Activation: Increase in Patient Activation Measure (PAM) scores
- Health Literacy: Self-reported understanding of health data
- Clinical Outcomes: Track condition-specific outcomes where possible

Business Metrics

- Hospital Acquisition: Number of signed contracts
- Revenue: MRR and ARR growth
- Churn: Hospital and patient retention rates
- CAC Payback: Time to recover customer acquisition costs
- Gross Margin: Maintain >90%
- Expansion Revenue: Increase in patients per hospital over time

Pilot Success Criteria

For initial ECMC pilot to be considered successful:

- ✓ 60%+ patient engagement rate (using tool at least monthly)

- ✓ 80%+ patient satisfaction (NPS >50)
- ✓ 75%+ physician approval rating
- ✓ Measurable increase in portal usage frequency
- ✓ Qualitative feedback: Physicians report more informed patient conversations
- ✓ Zero security/privacy incidents
- ✓ Technical reliability: 99%+ uptime
- ✓ Hospital willing to expand pilot to larger patient population

Appendices

Appendix A: ECMC Pilot Proposal

See separate detailed proposal document for ECMC pilot program.

Appendix B: Sample Report Output

Sample analysis report generated for founder's CLL + liver disease case demonstrating:

- Integration of bone marrow biopsy, FibroScan, and ultrasound results
- Synthesis with 2024-2025 peer-reviewed medical literature
- Identification of metabolic connections between conditions
- Properly cited sources (8 peer-reviewed publications)
- Actionable recommendations for patient and physicians
- Professional formatting suitable for clinical discussion

(Full sample report available upon request)

Appendix C: Technical Specifications

- **Programming Languages:** Python 3.11+, Swift 5.9+, TypeScript
- **Backend Framework:** FastAPI 0.104+
- **Frontend Frameworks:** SwiftUI (iOS), React 18+ (web)
- **Database:** PostgreSQL 15+
- **Cloud Infrastructure:** Microsoft Azure (App Service, Functions, Blob Storage, SQL Database)
- **AI/ML:** Anthropic Claude API, Azure OpenAI
- **Integration Standards:** HL7 FHIR R4, OAuth 2.0, RESTful APIs
- **Security:** AES-256 encryption, TLS 1.3, HIPAA compliant architecture
- **Development Practices:** Test-driven development, CI/CD via Azure DevOps, Infrastructure as Code

Conclusion

HealthWeave represents a convergence of critical factors at the perfect moment:

- Validated patient need through founder's lived experience with complex chronic conditions
- Proven technical feasibility with recent advances in AI (Claude, GPT-4)
- Clear distribution channel through existing patient portal infrastructure
- Strong business model with high margins and predictable recurring revenue
- Compelling value proposition for all stakeholders (patients, physicians, hospitals)
- First-mover opportunity in AI-powered patient data synthesis
- Founder with unique combination of technical skills, healthcare knowledge, and authentic motivation

The healthcare technology landscape is littered with solutions built by people who don't understand the problem. HealthWeave is different. This is a tool built by a patient who desperately needed it, has the technical skills to build it, and has already proven it works.

With a bootstrapped approach through pilot phase, followed by strategic capital raise after validation, HealthWeave can become the standard for patient health data synthesis within 3-5 years.

The question is not whether patients need better tools to understand their health data. They do. The question is who will build it. We have the unique combination of motivation, capability, and opportunity to be that builder.

The time is now. Let's build this.