J. Patrick Carter, PA-C Emeritus



Forward Deployed Healthcare AI Engineer | EHR Interoperability (FHIR, SMART on FHIR, CDS Hooks) | Former Clinician, CMO, and CTO

Wilmington, NC · info@patrick-carter.com · patrick-carter.com · linkedin.com/in/j-patrick-carter
Remote, on-site by engagement · Spanish, full professional proficiency

SUMMARY

Forward deployed engineer who embeds with health systems, digital health vendors, and research groups to take healthcare AI from pilot to production. I design the system, integrate it with Epic or any FHIR-capable EHR, validate it under HIPAA, and ship it into the clinical workflow myself, then stay through go-live and the first months of operation. Eighteen years as an emergency and primary care PA and a decade as CMO, CTO, and CMIO mean I speak to clinicians, compliance, and engineers in their own terms, which is where most healthcare AI pilots stall. Recent work: a family-facing AI assistant on Epic for Texas Children's PICU, a CDS Hooks observation platform live in freestanding EDs, and open-source FHIR and MCP tooling for JupyterHealth with UC Berkeley, the University of Chicago, and the Duke BIG IDEAs Lab.

SELECTED DEPLOYMENTS

Baylor College of Medicine / Texas Children's Hospital Forward Deployed AI Engineer (contract) Aug 2025 to Present

- Sole engineer (about 95 percent of 700 commits) on a HIPAA-compliant family-facing AI assistant that gives PICU parents plain-language access to their child's Epic chart; SMART on FHIR patient launch via MyChart against the Epic Patient Access API (R4), with discovery across 37,000 Epic-connected organizations.
- Built the clinical AI layer on AWS Bedrock as a lower-cost BastionGPT alternative: 29 setting-aware system prompts (PICU, pre-op, specialty clinics), each with its own FHIR fetch profile, versioned from an admin dashboard; pgvector retrieval over clinical-note chunks so answers cite the patient's own documents; ephemeral sessions at a 6th-grade reading level; transcripts logged by FHIR ID for clinical review.
- Shipped a lawyer-facing standard-of-care screening tool in four weeks: deterministic clinical rules plus an adversarial LLM review panel with a differential oracle (512 tests), S3 SSE-KMS with Object Lock, hardened upload endpoint.
- Built an AI-guided pre-visit intake producing a structured HPI, differential, workup, and ICD-10 codes for a 30-second provider review, launched from Epic MyChart or Medplum.
- Consolidated the AWS footprint (4 RDS to 2, 2 ALBs to 1, 54 secrets to 6 scoped configs), added 11 CloudWatch alarms, budgets, 35-day backups, and deletion protection, and wrote the rollout and handoff documentation. Automated Epic FHIR app activation across all 500 organizations on fhir.epic.com.

Kineta Health Forward Deployed Engineer, Clinical Decision Support (contract) Apr 2026 to Present

- Designed and built a hybrid CDS Hooks and SMART on FHIR platform for emergency observation units in freestanding EDs and micro-hospitals: patient-view hook with eligibility logic and card flows, Next.js SMART sidecar for risk stratification and one-click order sets, and a poll worker that re-scores admissions as serial labs arrive. Five protocols (chest pain/ACS, abdominal pain, asthma, syncope, TIA).
- Vendor-neutral FHIR client targeting ePowerDocs via MeldRx (Darena) in production, with Medplum and SMART Health IT sandboxes; self-hosted Medplum demo stack with 12 deterministic chest-pain archetypes and a delayed-troponin bot for serial labs.
- Took the iCare observation pathway (HEART calculator, observe-vs-escalate recommendation, anonymous beacon metrics, admin dashboard) live at the clinical site on Sep 8, 2026.

The Commons Project Foundation / JupyterHealth Interoperability and AI Engineer (contract) 2023 to Present

With UC Berkeley, the University of Chicago, and the Duke BIG IDEAs Lab. All repositories public on GitHub.

- CommonHealth IPS Share: patient pulls their record from any Epic organization via MyChart (per-org SMART discovery, PKCE), sweeps USCDI v3 resources and C-CDA documents, and shares an HL7 International Patient Summary bundle; no PHI at rest.
- JupyterHealth Exchange MCP server exposing studies, patients, and Open mHealth observations to Claude and other MCP clients, scoped to the authenticated user; 34 core commits to the FHIR R5 Django platform in 2026 and maintainer of its documentation site.
- SMART on FHIR provider-launch template (Epic iframe or Medplum redirect) resolving the launched patient by MRN and rendering device data in a Voilà notebook; omh-shim pip package converting Oura and Open Wearables data to IEEE 1752 and Open mHealth schemas (11 data types); SMART Health Links export via AWS SAM Lambdas with server-side JWE for bundles up to 5 GB.
- Earlier: verifiable COVID credentials for cross-border travel and the first digital SMART Health Insurance Card in US production; contributor to shc-web-reader.

EXPERIENCE

Interconnect Health Founder and Principal, Wilmington, NC — Sep 2022 to Present

- Independent forward deployed engineering practice for healthcare AI and interoperability. Engagements above plus advisory to Wrapped Health. Six client engagements in 2026 spanning academic medical centers, an ED operator, and a research consortium.

CareMessage Director of Engineering — Sep 2025 to Present

- Lead engineering for a nonprofit patient-engagement platform serving FQHCs, free clinics, and tribal health centers.
- Set AI adoption strategy and built the AI quality and testing harness: evaluation suites, agent frameworks, and PHI/HIPAA AI governance with the security and compliance team.

agilon health Director of Product Management — Sep 2024 to Sep 2025

- Owned EMR interoperability and quality care gap closure for value-based primary care: burden-of-illness, quality measures, and care planning data flows across partner EHRs.

The Commons Project Foundation Clinical and Technology Lead, Global Health — May 2022 to Oct 2024

- Reported to the CEO. Led FHIR interoperability programs across sub-Saharan Africa and the US with Mastercard Foundation, Tony Blair Institute, Apple Health, Google Health, and Samsung Health.
- Represented the foundation in CARIN Alliance, HHS, CMS, and ONC interoperability work; mentored regional health-tech founders on SMART on FHIR.

ChartSpan Medical Technologies CMO, CTO, and Chief Medical Integration Officer, Greenville, SC — 2011 to 2022

- Three successive C-suite roles reporting to the CEO and Board at the nation's largest Medicare chronic care management provider, which I co-founded.
- As CMIO, delivered HL7, API, and RPA integrations with every major US EHR and practice management vendor, an ONC-certified EHR for Meaningful Use and MIPS, and patented ETL automation for health and claims data.
- As CTO, led onshore and offshore engineering through the migration from a monolith to AWS microservices; first healthcare platform on AWS Connect.
- As CMO, supervised 150+ clinicians; care management protocols produced $76 PMPM in Medicare savings and an Annual Wellness Visit platform with over 98 percent completion across all markets.

Earlier leadership. Department Chair and Faculty, Physician Assistant Department, East Carolina University (2010 to 2012); Chief Operating Officer, Rural Access Medical Providers (2006 to 2010).

Clinical practice. Emergency medicine and primary care physician assistant, 1997 to 2015, in rural and underserved communities in the US and Central America. Also CEO of Clarity Health Project Foundation, a 501(c)(3) providing free AI translation of medical records in 120+ languages (2025 to Present).

TECHNICAL SKILLS

- **Interoperability:** FHIR R4 and R5, US Core and USCDI v3, SMART on FHIR (patient and provider launch, PKCE, backend services), CDS Hooks, HL7 v2, C-CDA, International Patient Summary, SMART Health Cards and Links, Open mHealth and IEEE 1752; Epic Patient Access API and Vendor Services, Medplum, MeldRx (Darena), vendor-neutral FHIR clients.
- **Healthcare AI:** AWS Bedrock (HIPAA-eligible), Google Cloud Vertex AI and Healthcare API, Claude and OpenAI APIs, MCP servers, retrieval over clinical notes (pgvector), versioned clinical system prompts, adversarial LLM review panels with deterministic oracles, evaluation harnesses, structured clinical output (HPI, differentials, ICD-10), PHI-safe AI governance.
- **Cloud and delivery:** AWS (ECS Fargate, Lambda, SAM, RDS, S3 with SSE-KMS and Object Lock, CloudFront, Secrets Manager, CloudWatch), GCP (Vertex AI, Cloud Healthcare API, Cloud Run), Docker, GitHub Actions CI/CD, Playwright, infrastructure consolidation and cost control.
- **Languages and frameworks:** TypeScript and Node (Express, Next.js, React, Vite), Python (Django, Django REST Framework, Jupyter), PostgreSQL, pnpm monorepos.
- **Clinical and regulatory:** HIPAA and BAAs, HEDIS and UDS quality measures, value-based care and care gap closure, Medicare CCM and AWV, ONC certification, Meaningful Use and MIPS, CMS and ONC interoperability policy.

CREDENTIALS AND EDUCATION

- PA-C Emeritus, National Commission on Certification of Physician Assistants (NCCPA)
- AWS Certified Solutions Architect, Associate; AWS Certified Developer, Associate; AWS Certified Cloud Practitioner
- MS, Physician Assistant Studies, University of Nebraska at Omaha
- Surgical Residency for Physician Assistants, Yale University School of Medicine
- BS, Physician Assistant Studies, Wichita State University
- BS, Organismal Biology, University of Kansas