IMPACT

Virtual First Medical Practice Collaboration

IMPACT, a virtual-first care initiative co-hosted by

DIGITAL MEDICINE SOCIETY

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A Tech Stack for Effective V1C Care Transitions

Navigating the Tech Stack

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V1C Care Transitions

- Initiation & Onboarding
- Co-Management
- Downstream Referrals

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QuickLinks to V1C Care Transitions

Initiation & Onboarding

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A Tech Stack for Effective V1C Care Transitions

In the digital age of medicine, information is the currency. How virtual-first care (V1C) organizations spend this capital is a critical differentiator. Processes and tools that you use to acquire, analyze, and share information - known as your digital health tech stack - is the foundation to optimize transitions of care.

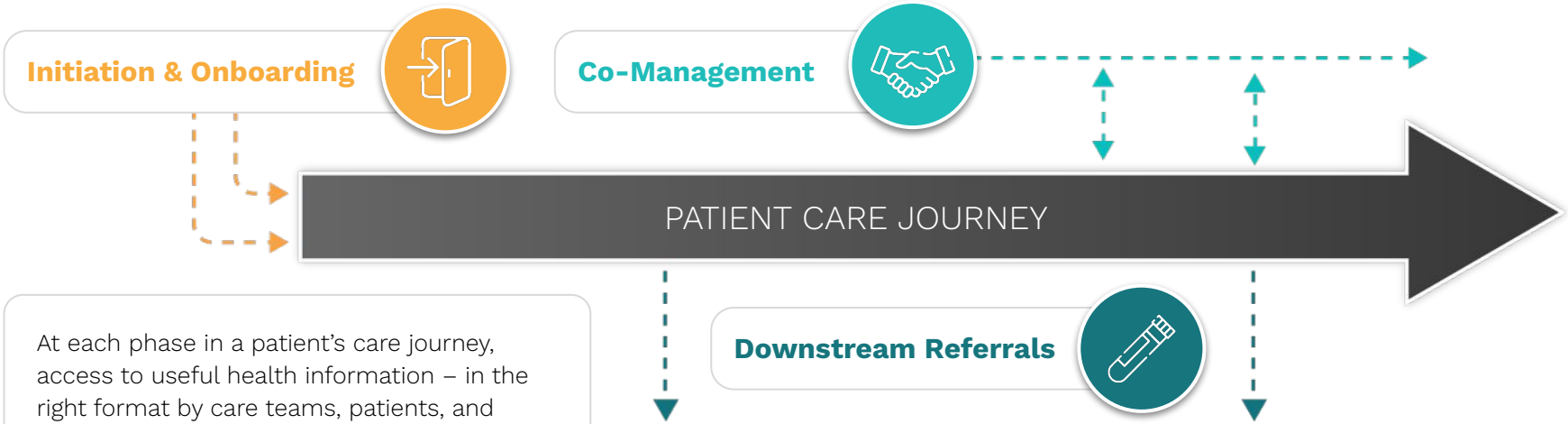
The right tech stack can transform laborious manual **information gathering, processing, and sharing** activities, enabling optimal deployment of your most valuable asset: a highly skilled workforce.

What is a **TECH STACK**?

Alternatively called a solutions stack, a tech stack is the a collection of software services that are used for developing and running a program.

- ✓ Health data communication is particularly important in the virtual care environment due to the multidisciplinary and decentralized care teams and a fluctuating cadence of interaction.
- ✓ In this rapidly changing environment, simply obtaining access to records is a minimum.
- ✓ To realize the true potential of V1C to improve efficiency and outcomes of care, leaders will invest strategically in technologies that facilitate ingesting, analyzing, and sharing data critical for seamless care transitions.
- ✓ V1C providers will chose to build capabilities internally or partner with an expanding array of companies offering technology solutions purpose built for digital medicine.

Timely, Actionable Data Is Foundational to Effective V1C Care Transitions Across the Patient Journey



At each phase in a patient's care journey, access to useful health information – in the right format by care teams, patients, and caregivers – is critical for:

- Efficient deployment of clinical workforce
- Delivery of high-quality, evidence-based care
- Avoidance of duplicative, conflicting, or delays in care services

V1C Initiation & Onboarding

Opportunities to Streamline Care Transitions

- Insurance eligibility & coverage
- Access to current & past clinical records
- Medication reconciliation
- Integration of patient-generated data

➡ Successful patient transitions into V1C practice requires getting to know patients, history, and conditions as efficiently and completely as possible.

Health Data Needs For V1C Care Transitions

- Determining which healthcare and wellness services their health insurance benefits cover and relevant benefits design schemes (e.g., copays and incentives.)
- Retrieving and ingesting past health history and treatments, including basic demographics, diagnoses, comorbidities, and procedures.
- Documenting current providers and sites of care.
- Updating current medications and verifying information with patients.
- Mapping informal care partner roster.
- Integrating relevant patient-generated data.

V1C Initiation & Onboarding

Insurance Eligibility & Coverage

Opportunities to Streamline Care Transitions

- **Insurance eligibility & coverage**
  - Access to current & past clinical records
  - Medication reconciliation
  - Integration of patient-generated data

Considerations For Effective Care Transitions Into V1C

- ✓ Are the patient's covered benefits related to the services in question?
  - Covered services, conditions for coverage, coinsurance, and copays depends on patient's insurance provider and plan type.
  - Be aware that patients may also have benefits available directly through their employer.

Tech Stack Options

★★☆ **Acceptable**: V1C providers can access eligibility and coverage from clearinghouses directly. Risks include inefficiencies of manually navigating cumbersome interfaces and potential for incomplete benefits information.

★★★ **Ideal**: Use an "onramp" service for cleaner and more comprehensive data. Third-party vendors will update and standardize data formats and mine multiple clearinghouses for complete information.

Example Vendors

Apero | Candid | Change Healthcare | Eligible

See a vendor we missed? Add it here.

V1C Initiation & Onboarding

Access to Current & Past Clinical Records

Opportunities to Streamline Care Transitions

- Insurance eligibility & coverage
- **Access to current & past clinical records**
- Medication reconciliation
- Integration of patient-generated data

Considerations For Effective Care Transitions Into V1C

- ✓ Data “liquidity” is now federally mandated through the 21st Century Cures Act, but additional layers of “translation” improve efficiency of “ingesting” data from health data exchanges and aggregators such that the records are both available and useful.
- ✓ How can we improve the efficiency and accuracy of retrieving clinical records?

Tech Stack Options

★★☆ **Acceptable**: V1C providers need to pull historic patient records from data repositories, including State HIEs, as well as plug-and-play networks. Major EMR systems continue to expand functionality for sharing between providers, though the quality and usability of data varies.

★★★ **Ideal**: Use an “on-ramp” vendor that adds a translation layer as it pulls the data in. On-ramp vendors are differentiated in the value-add services they offer.

Example Vendors

Health Gorilla | Intersystems | Kno2 | Particle | Redox | Zus

See a vendor we missed? Add it here.

V1C Initiation & Onboarding

Medication Reconciliation

Opportunities to Streamline Care Transitions

- Insurance eligibility & coverage
- Access to current & past clinical records
- **Medication reconciliation**
  - Integration of patient-generated data

Considerations For Effective Care Transitions Into V1C

- ✓ Which processes and technologies will you use to access medication history and update current medications and validate the information?
- ✓ Be aware that patients and care partners are best source of truth regarding what medications they are taking.

Tech Stack Options

★★☆ **Acceptable**: Surescripts is the main, ubiquitous network for medication history. Their standards are older and certification process is cumbersome.

★★★ **Ideal**: Onramps offer portals to pull medication history. This is also a required feature of certified electronic health records (EHRs) and included in most off-the-shelf EHRs.

Example Vendors

Bravado | Dosespot | DrFirst | Intersystems | Most EHRs | Surescripts | Zus

See a vendor we missed? Add it here.

V1C Initiation & Onboarding

Integration of Patient Generated Health Data

Opportunities to Streamline Care Transitions

- Insurance eligibility & coverage
- Access to current & past clinical records
- Medication reconciliation
- **Integration of patient-generated data**

Considerations For Effective Care Transitions Into V1C

✓ How to ensure that patient-generated health data (PGHD) is accessible, relevant, and trustworthy to power clinical decision-making.

Tech Stack Options

★★☆ **Acceptable**: Current data aggregator first use interfaces that allow patients to authenticate into their connected sensor technology account, such as wearable fitness monitors, granting access to external applications. V1C companies can build this into their onboarding flow in order to gain access to patient-generated data.

★★★ **Ideal**: See toolkits from DiMe's Sensor Data Integrations project launching July 18.

Example Vendors

HumanAPI | Intersystems | Terra | Validic | Vital

See a vendor we missed? Add it here.

V1C Co-Management & Coordination Activities

Opportunities to Streamline Care Transitions

- Efficient, timely documentation
- Sharing clinical data with other providers
- Emergent notifications

➡ Patients living with one or more chronic disease commonly experience fluctuations in their symptoms requiring a change of care plan – simple diet changes or the need for a dental procedure are enough to prompt medication titration. More serious events such as hospitalization or new diagnoses bring new providers and sometimes conflicting orders to the table.

Health Data Needs For V1C Care Transitions

- Which platforms will you use to streamline documentation, generate summary reports in standard formats, and share with other providers?
- Do your providers have access to partner EMRs? Which documentation processes can you establish to streamline transitions between providers?
- What events outside the practice do your providers need alerts for? E.g., hospitalizations, discharges, prescriptions, new test results.

V1C Co-Management

Efficient, Timely Documentation

Opportunities to Streamline Care Transitions

- **Efficient, timely documentation**
  - Sharing clinical data with other providers
  - Emergent notifications

Considerations For Efficient Documentation

Providers spend upwards of 15 hours weekly performing “catch up” with documentation in the electronic medical record (EMR).

- ✓ How will you ensure timely and accurate completion of clinical records for communicating relevant health data or reducing the duplication of services?
- ✓ How will you ensure patients understand and use clinical information, in accessible formats and language, with defined actions?

Tech Stack Options

★★☆ **Acceptable**: Clinical dictation and transcription services are being gradually replaced by speech recognition software. Clinicians will still spend a lot of time checking for errors. Population of structured reports is still limited.

★★★ **Ideal**: Emerging ACI solutions use AI to improve back-end data clean up and formatting for structured reports. These applications record real-time patient interactions and convert them to patient-accessible notes or documentation. This can reduce weekly documentation catch up time from 15 to 5 hours.

Example Vendors

Abridge | Deepscribe | Nuance (DAX)

See a vendor we missed? Add it here.

V1C Co-Management

Sharing Clinical Data with Other Providers

Opportunities to Streamline Care Transitions

- Efficient, timely documentation
- **Sharing clinical data with other providers**
- Emergent notifications

Considerations For Effective Care Transitions

✓ Which platforms and processes will you use to share data and establish bi-directional communication between co-managing providers?

Example Vendors

Kno2 | Health Gorilla | Intersystems | Redox

See a vendor we missed? Add it here.

Tech Stack Options

★★☆ **Acceptable**: DirectTrust is a nationwide network for pushing data in a secure email-like fashion. It supports all payloads (e.g., PDF, flat files,) but ubiquitous support is limited to clinical data architecture (CDA) documents. This is the most common way to send care summaries broadly, but the standards are older and certification is cumbersome.

★★★ **Ideal**: On-ramps vendors help V1C companies use this network; it is also a required feature of certified EHRs. New standards in 2023 will mandate that patient health records be “exportable” in modern formats. V1C providers with large-shared patient panels should invest in integration interfaces with clinical partners’ health systems.

V1C Co-Management

Emergent Notifications

Opportunities to Streamline Care Transitions

- Efficient, timely documentation
- Sharing clinical data with other providers
- **Emergent notifications**

Considerations For Effective Care Transitions

- ✓ What alerts and real-time information do your care teams need about emergent events?
- ✓ Which platforms are currently available to source this information?
- ✓ How will you integrate these data streams into clinical workflow?

Tech Stack Options

★★☆ **Acceptable**: Different networks exist that offer proactive notification of emergent events. For example, emerging vendor networks offer notification of admission, transfer, and discharge for subscribed patients. Surescripts offers notification of medication dispense events, fulfillment of a prescription, or a patient missing their prescription pickup.

★★★ **Ideal**: On-ramps vendors add smart “translation” layers to the data streams above for easier access for V1C organizations.

Example Vendors

Audacious Inquiry | Collective Medical | Cureatr | Intersystems | PatientPing | Zus

See a vendor we missed? Add it here.

V1C Downstream Referrals & Services

Opportunities to Streamline Care Transitions

- Ordering & fulfillment of lab tests
- Navigating drug costs & prior authorization
- Ordering & fulfillment of prescription drugs
- Ordering & obtaining results of imaging
- On demand in-home care providers

➡ Guiding patients to appropriate downstream services makes the difference between an order that is completed or not, in a clinically relevant timeframe, and at acceptable costs to practice and patient.

Health Data Needs For V1C Care Transitions

- How will you determine which options are available in a local market, satisfy patient preferences, and deliver high-quality results in for acceptable and competitive prices?
- Which tools do you use for ordering, scheduling, and obtaining results of procedures and tests?
- How do you ensure continuity of care when you refer a patient to an outside clinician?

V1C Downstream Referrals

Ordering & Fulfillment of Lab Tests

Opportunities to Streamline Care Transitions

- **Ordering & fulfillment of lab tests**
- Navigating drug costs & prior authorization
- Ordering & fulfillment of prescription drugs
- Ordering & obtaining results of imaging
- On demand in-home care providers

Considerations For Effective Care Transitions

✓ How to improve efficiency of ordering and integrating lab work?

Example Vendors

Change Healthcare | Health Gorilla | ixLayer | Redox

See a vendor we missed? Add it here.

Tech Stack Options

★★☆ **Acceptable**: Quest and Labcorp are the two dominant outpatient labs that account for over half of the market. They utilize older HL7v2 standards.

★★★ **Ideal**: On-ramp companies provide simpler application programming interface (APIs) to place orders and receive corresponding results from these labs. There are also emerging solutions for ordering remote diagnostic testing. Electronic health records (EHRs) commonly support integrations with lab vendors. For all of these, implementation time is needed with each lab vendor, as none can be used without tailored adjustments.

V1C Downstream Referrals

Navigating drug costs & prior authorization

Opportunities to Streamline Care Transitions

- Ordering & fulfillment of lab tests
- **Navigating drug costs & prior authorization**
- Ordering & fulfillment of prescription drugs
- Ordering & obtaining results of imaging
- On demand in-home care providers

Considerations For Effective Care Transitions

- ✓ Which tools will your provider prescribers need to navigate drug costs and copays in real-time?
- ✓ Prescribers need actionable data on affordability and options at the point of prescribing.
  - Copays are highly dependent on the insurance plan, PBM, and fulfilling pharmacy.
  - Affordability can drive non-adherence to prescriptions.
  - Off-formulary drug costs can be prohibitive for some patients
  - Most EHRs lack features to provide full information on plan and pharmacy-specific costs, formulary alternatives, and biopharma coupon programs.

Tech Stack Options

★★☆ **Acceptable**: The drug pricing tools sold by Surescripts, owned partly by the PBMs CVS Caremark and Express Scripts, includes data from those companies, but not from OptumRx, a PBM owned by UnitedHealth. The OptumRx drug pricing tool includes Optum data but not that of Express Scripts and CVS.

★★★ **Ideal**: Emerging platforms are able to aggregate and analyze payor data as well as enable price comparisons between pharmacies – particularly important for patients with high-deductible health plans or without insurance altogether.

Example Vendors

CoverMyMeds | GoodRx | Intersystems | OptumRx | SureScripts

See a vendor we missed? Add it here.

V1C Downstream Referrals

Ordering & Fulfillment of Prescription Drugs

Opportunities to Streamline Care Transitions

- Ordering & fulfillment of lab tests
- Navigating drug costs & prior authorization
- **Ordering & fulfillment of prescription drugs**
- Ordering & obtaining results of imaging
- On demand in-home care providers

Considerations For Effective Care Transitions

✓ Choosing an e-prescribing platform.

Tech Stack Options

★★☆ **Acceptable**: Surescripts is the main, ubiquitous network for e-prescription.

★★★ **Ideal**: Prescription drug-focused on-ramps are now offering additional functionality, such as portals, to e-prescribe. This is also a required feature of certified EHRs.

For V1C companies that want delivery of their medications to the patient's' home, newer whitelabel pharmacy delivery options can be used directly through modern APIs.

> Example Vendors
>
> Bravado | Dosespot | DrFirst | Most EHRs
>
> See a vendor we missed? Add it here.

V1C Downstream Referrals

Ordering & Obtaining Results of Imaging

Opportunities to Streamline Care Transitions

- Ordering & fulfillment of lab tests
- Navigating drug costs & prior authorization
- Ordering & fulfillment of prescription drugs
- **Ordering & obtaining results of imaging**
- On demand in-home care providers

Considerations For Effective Care Transitions

How will you identify high-value imaging vendors?

- ✓ There are currently no networks or vendors akin to Quest or Labcorp for imaging. However, national scale imaging companies are growing their footprint, linking sites with fellowship-trained, subspecialty radiology interpretations and standardized guidelines.
- ✓ Imaging rice transparency, availability, and scheduling are in early stages of development.
- ✓ Be aware that the posting pricing for common procedures might not cover all the associated costs, such as reading fees.

Tech Stack Options

★★☆ **Acceptable**: Whenever available, leverage payor relationships to identify preferred in-network vendors.

★★★ **Ideal**: A small number of newer companies are moving to become an aggregator/network for shopping.

Example Vendor

ImagingPanda

See a vendor we missed? Add it here.

V1C Downstream Referrals

On Demand In-Home Care & Services

Opportunities to Streamline Care Transitions

- Ordering & fulfillment of lab tests
- Navigating drug costs & prior authorization
- Ordering & fulfillment of prescription drugs
- Ordering & obtaining results of imaging
- **On demand in-home care providers**

Considerations For Effective Care Transitions

- ✓ On demand in-home care providers are now available in many markets and offer a wide variety of services that address the “last mile of care” problem by bringing services directly to patients' homes.
- ✓ How will you identify available and appropriate on demand in-home services?
  - Which platforms can help providers find service menu, costs, and turn-around time in local markets?

Tech Stack Options

★★☆ **Acceptable**: Health insurance payor partners most likely own or have preferred in-home providers Humana with OneHome and Anthem with MyNexus and are the initial place to source in-network, high quality vendors.

★★★ **Ideal**: A small number of newer companies are moving to become an aggregator/network for shopping.

Example Vendors

Axle Health | Impilo Health | Workpath

See a vendor we missed? Add it here.

Summary: Attributes of the Disrupters V1C Tech Stack

- ✓ **Lean**: purpose-built for efficiency and value-oriented care
- ✓ **Cloud-based**: pay for what you use
- ✓ **Reporting super power**: single source of truth for value reporting

Check out this article to dive deeper on digital health developers' buy/build/partner decisions.

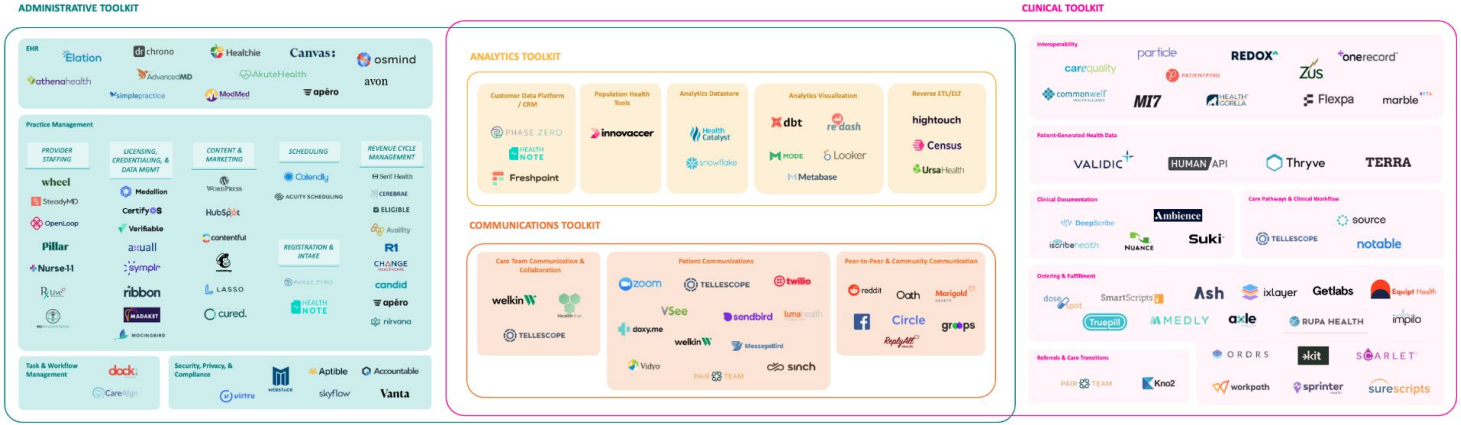


Image source: Second Opinion, March 22, 2022

Glossary

ACI: Ambient Clinical Intelligence is advanced, AI-powered, voice recognizing technology that quietly listens in on doctor-patient encounters and aids the EHR workflow process by automating medical transcription, note taking, and documentation.

AI/ML: In the context of healthcare, Artificial Intelligence and Machine Learning (AI/ML) are the human-like capabilities of specific mathematical algorithms processed by computers. It refers to software applications that, using advanced statistical methodologies, can learn patterns and derive insights from seemingly complex datasets.

API: Application Programming Interface is a software intermediary that allows two applications to talk to each other. APIs support the ability of an application from one developer to read and write data from another developer's application.

C-CCD: Consolidated Continuity of Care Document has been one of the default export formats for all Meaningful Use-certified EHRs. C-CDA is being phased out in favor of the next generation FHIR standard but it is still widespread.

FHIR: Fast Healthcare Interoperability Resources standards are the Health Care API Instruction Manual; managed through HL7. Universal FHIR compatibility is a baseline, not the finish line.

PGHD: Patient-Generated Health Data. Health-related data created, recorded, or gathered by or from patients (or family members or other care partners) to help address a health concern.

Tech Stack: Alternatively called a solutions stack, a Tech Stack is simply a collection of software services that are used for developing a program. Here is a useful list of current digital health software solutions.