![ata™]

WHITE PAPER

TELEHEALTH INTEROPERABILITY

Driving Choice, Continuity, and Scale

INTRODUCTION

Telehealth has passed the tipping point of market momentum. It is universally understood that telehealth is a necessary form of care delivery to address the supply-and-demand challenges that healthcare faces in the U.S., and to achieve the Triple Aim of improving quality of care, reducing healthcare costs, and enhancing population health. Unfortunately, many telehealth initiatives have suffered from a narrow service-line focus and lack of financial sustainability. In many cases, telehealth clinical services and settings are fragmented and data is siloed, with low-volume telehealth services such as those for specific locations or clinical specialties standing alone rather than being designed as part of a larger, integrated system. As these fragmented systems proliferate, they result in costly, redundant software infrastructure and endpoints that limit the potential to improve overall quality and access to care. These fragmented systems also make it difficult for payers (government agencies, private insurers, and employers) to gain access to the comprehensive member data needed for claims and utilization management systems, and add to the challenges of performance tracking, reimbursement, and incentives.

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As telehealth services expand and mature—from an exceptional alternative for enhanced access in limited-care settings to integrated routine care, management, and reimbursement across the care continuum—they will continue to advance in efficiency, productivity, quality, and financial sustainability. Interoperability is the key to making that happen. And it has impacts for all stakeholders—providers, payers, and patients/plan members, as well as the telehealth vendors who support them.

VISION AND VALUE: WHAT DOES TELEHEALTH INTEROPERABILITY LOOK LIKE?

Examples of successful interoperable telehealth initiatives provide context for its value. One such example can be found in a western city in China, where more than 250 hospitals and clinics support a population of seven million citizens. Population health teams at each clinic are responsible for a wide range of patient panels, from 90,000 to as many as 800,000 local patients, where they can segment chronic care patients who can be monitored and scheduled for appropriate care. Each location includes a telemedicine center to connect practitioners in local clinics with larger remote teaching hospitals and tertiary care centers for specialist services such as radiology and cardiology consultations. At the same time, city governments have access to

aggregate population health dashboards based on location that provide vital information such as status of vaccinations, blood supply availability, and where additional clinic capacity is needed.

THE FEDERATED STATE OF U.S. HEALTHCARE DATA

A challenge for telehealth interoperability in the U.S. is that healthcare data will always be in a federated state, residing primarily where it is created as opposed to a central data clearing house. That means that telehealth technology must support the re-use of data from multiple sources.

Importantly, practitioners have universal access to all the records of the seven million patients in the city, including notes from every provider as well as patients' lab results and images. In addition, citizens can see their complete medical records, including images, lab tests, all their doctors' notes, a summary of all their hospitalizations—as well as dependents' records, as appropriate—all easily accessible on mobile devices.

This is a striking example of how telehealth interoperability presents opportunities for better patient care at scale. It's about getting the right information to the right people at the right times so that it can be used to take better care of patients, and then provide accountability and performance metrics for quality standards and reimbursement.

While this example is specific to China's regulatory, technology, and payment models, U.S. examples can be found in large delivery networks, such as large academic medical centers that provide services to smaller rural hospitals and clinics that may or may not have their own electronic health records (EHRs). Because the smaller providers feed high-risk or complex medical patients to the large hospitals, an interoperable telehealth platform is needed to share patient records directly in the large hospital's system during a telehealth encounter, saving time and maintaining continuity of care for patients who may require ongoing services from the regional medical center. This can be automated and seamless thanks to existing interfaces between the telehealth platform for both the referring and consulting health systems' EHRs.

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Without telehealth, this would be a remarkably inefficient process, involving e-faxing and manual double entries which takes valuable time from clinicians and presents the risk of transcription errors. With an interoperable telehealth platform, clinicians initiate workflows from inside their own familiar EHRs, rather than managing VPN remote logins and having to learn the heterogeneous EHR implementations and interfaces for each remote customer site. In addition, the patient record is automatically updated with the summarized results of the consultation captured in the integrated telehealth platform.

INTEROPERABILITY DELIVERS ON THE PROMISE OF TELEHEALTH FOR ALL STAKEHOLDERS

As these examples illustrate, interoperability allows telehealth practices and payers to share data across the same systems used for in-person encounters, and interoperable telehealth systems are being successfully deployed, particularly in large health networks. Although they are typically the result of long-term, customized integrations rather than out-of-the-box installations, these health system telehealth initiatives are scaling from individual, siloed departmental projects to enterprise-wide programs (including across extended geographical areas for remote services) that aggregate data for a 360-degree view of the patient. This provides expanded access for both providers and patients/plan members across the continuum of care and longitudinally throughout individuals' lifetimes. Payers are also using large-scale telehealth systems—online video visits in particular—for care management and access to employees to address health and well-care needs.

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To support these efforts, payers are incenting telehealth interoperability to help reduce total cost of care and unplanned utilization of care. This is led by government payers, particularly the Centers for Medicare & Medicaid Services (CMS)—including Medicare and Medicaid in its various forms—which is the primary payer for roughly 50 percent of U.S. healthcare spending. Other government payers include the Department of Veterans' Affairs, the Indian Health Service, Public Health Service, and the Department of Defense. All of these have interoperability requirements and active initiatives today, with additional rules underway. In fact, every CMS payment—including classic fee-for-service through Medicare Advantage plans and state Medicaid programs—will have interoperability requirements. Private payers are following this lead and have adopted many of the same requirements and policies to incent members to utilize virtual services.

THE ROLE OF STANDARDS IN INTEROPERABILITY

Technology standards play a significant role in enabling interoperability across all stakeholders' disparate established systems. Newer open interoperability specifications such as SMART on FHIR (a double acronym for Substitutable Medical Applications, Reusable Technologies and Fast Healthcare Interoperability Resources) build on existing standards for patient data exchange and imaging such as HL7 and DICOM (respectively) and allow organizations to more easily integrate services. These include pharmacy, delivery systems, scheduling, imaging, social services, and more, that can provide a comprehensive, transparent, and high-value contextual experience across the continuum of care. One implementation of SMART on FHIR is used by EHR vendors who are creating "app store"-style frameworks to support interoperable third-party telehealth solutions. This is similar to the open application programming interface (API) development environments that Apple, Google, and Microsoft have created to support the creation of approved apps for smartphones or tablets. For telehealth applications and systems, the availability of APIs is a move in the right direction, but most of these frameworks require the developer to share revenue with the EHR vendor and their APIs today remain limited.

REQUIRED CATEGORIES OF TELEHEALTH INTEROPERABILITY

Unique Patient/ Member ID	Must be implemented with rules for registration authority throughout entire flow of healthcare services and payment, including telehealth and onsite services and payer systems
Patient/Member Health Data	Must be securely shared with enterprise data warehouse (EDW), electronic health record (EHR), picture archiving and communication systems (PACS), telehealth platforms, and claims and utilization management systems for timely access and reimbursement, population health management, and performance reporting
Telehealth Workflows	Must be interoperable between care management solutions (EHR) and cross-vendor telehealth solutions
Remote Examination	Requires interoperability among disparate video solutions
Patient Data Capture	Requires interoperability with diagnostic medical devices and remote monitoring devices
Patient/Member Communication	Requires interoperability between communication platforms, scheduling, and communication devices and capabilities
Interstate Licensure	Required to compress the time and expense associated with delivery of care across state lines

For video conferencing, robust standards including SIP/H323 exist but new options such as WEBRTC are making seamless connections possible in any browser without having to download additional apps. The industry can help evolve these standards and make medical devices work seamlessly as part of video conferences. Additionally, the patient experience will not be complete without integrated communication platforms to accompany the on-demand or scheduled telehealth encounter. Interoperability must incorporate communication platforms across the gamut of secure paging, texting, IM, chats, video, phone/VOIP, faxing/e-faxing, and scanning.

As standards, specifications, and interfaces become more robust and more broadly implemented, they will support an even richer telehealth infrastructure and a seamless clinical experience. An ongoing challenge, however, is the lack of standards across payer systems, including claims, utilization management, benefit design, registration, and employee assistance programs. Interoperability at the payer level is required for effective reimbursement and incentives, which will help reduce opportunity costs for telehealth adoption and support related improvements in quality, cost, and access to care.

This situation puts buyers of telehealth technology—payers, employers, post-acute care, and health systems that are investing in long-term telehealth enterprise programs—in the driver's seat. When buyers were willing to

3 VENDORS WHO SUPPORT TELEHEALTH INTEROPERABILITY

American Well | AmericanWell.com
American Well is Cerner's embedded telehealth solution partner and also integrates with Epic and other major electronic medical records (EMRs) across a range of solutions from HL7 and SMART on FHIR to deep integrations using its EMR gateways. American Well believes in matching provider workflows to accelerate the use of telehealth and lower barriers in care delivery.

Teladoc Health | Teladochealth.com
For Teladoc Health, true interoperability is achieved through its Virtual FirstTM approach. The virtual front door serves as a single point of entry to an optimized care experience enabled by a scalable platform that leverages relevant information—beyond just data. In this way, Teladoc Health gives consumers access to comprehensive clinical services, integrated into the broader healthcare ecosystem and aligned with the best, most appropriate care.

ViTel Net | Vitelnet.com
ViTel Net is a leading telehealth innovator, connecting and scaling healthcare IT infrastructures. Its cloud platform automates and simplifies data and work flows, providing clinicians access to all patient data with a single sign-on. ViTel Net delivers on interoperability, sharing data between multi-EHR, multi-PACS, multi-PHR, and multi-vendor solutions. The results: clinicians make more informed decisions with greater efficiency using aggregated data across the telehealth care continuum.

invest in siloed telehealth systems, vendors of those or broader health IT systems had little incentive to work toward interoperability. But that's changing with increased understanding of the value of interoperability and the long-term risk of non-interoperable systems. Today's buyers must drive the implementation and adoption of standards and require vendors—of both telehealth systems and EHRs—to incorporate standards-based interoperability support across heterogeneous solutions.

LOOKING BEYOND TECHNOLOGY FOR SUCCESS

While standards are clearly important, the industry must look beyond technology for success. Widespread telehealth interoperability within health systems requires governance initiatives that are driven by leadership and that incorporate advisory groups and committees to take telehealth out of individual clinical silos and into horizontally integrated, enterprise-wide programs. This leads to the development of workflows and processes that integrate these telehealth programs into routine care that is optimized for the benefit of both patients and clinicians. In addition, these systems must document compliance with HIPAA security and patient privacy laws, state and federal regulations, and medical accreditation guidelines and must be financially sustainable through integration with plan designs as well as payer systems and programs.

Strides have already been made to ease external pressures that have made telehealth integration challenging. Favorable federal and state regulatory environments, advocacy to address interstate licensure, and improved financial incentives by both government and private payers are helping to advance the adoption of telehealth.

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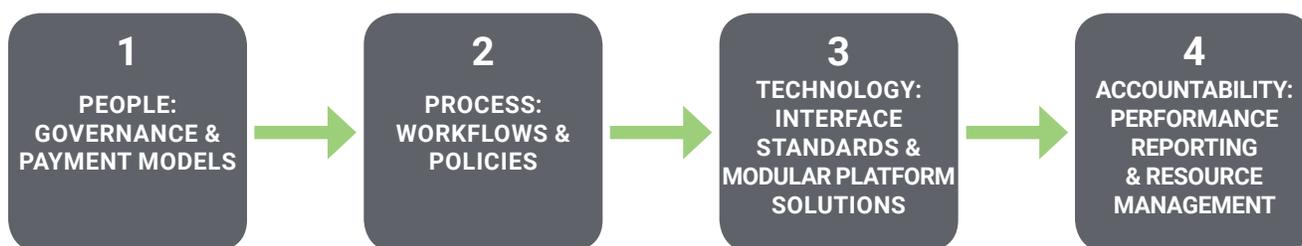
This convergence of policy and newly aligned payment incentives, provider acceptance, consumer demand, and technology innovation has positioned telehealth as a fast-growing industry of services and technologies, driving telehealth implementations at record rates. The time is now to ensure telehealth interoperability between disparate telehealth systems, with existing healthcare IT and payer systems, and with the exploding number of remote health and medical devices for monitoring, diagnostics, and communications.

BRIDGE THE GAP – THE PATH FORWARD

As organizations implement a departmental telehealth capability, a common approach is to establish a pilot project that begins with a search for telehealth services and technologies to address a specific need or medical condition for individual clinics or specialties. Unfortunately, the result is often a number of siloed solutions that don't enable continuity of care, accountability, or data-sharing between disparate health IT systems and that don't improve workflow efficiencies. While software standards are widely available, implementation of these standards in the U.S. is limited in terms of sharing data and efficient workflows with EHRs, PACS, and other major health IT systems. Many telehealth systems and services vendors continue to offer niche solutions that solve a specific problem for a specific care setting but don't communicate with other solutions or share data.

Without the support of enterprise top-down leadership, central governance, standard processes, and workflows, these initiatives can face predictable resistance from clinicians and cannot be effectively scaled across the organization. Ultimately, a technology-first approach can detract from—rather than enhance—coordinated patient-centered delivery models across specialties, care settings, and providers to improve clinical outcomes, quality, and satisfaction.

A FRAMEWORK FOR TELEHEALTH INTEROPERABILITY SUCCESS

1 PEOPLE: GOVERNANCE & PAYMENT MODELS	→	2 PROCESS: WORKFLOWS & POLICIES	→	3 TECHNOLOGY: INTERFACE STANDARDS & MODULAR PLATFORM SOLUTIONS	→	4 ACCOUNTABILITY: PERFORMANCE REPORTING & RESOURCE MANAGEMENT

1. PEOPLE: GOVERNANCE & PAYMENT MODELS

Instead, the path forward begins at the top. Interoperability and data-sharing represent a potential threat to the heterogeneous care-delivery system and fee-for-service (FFS) payment models in the U.S., so this must be addressed up front. While physicians are dedicated to their patients' well-being, the business reality is that face-to-face clinical services are a higher source of revenue in a FFS payment environment, and patient/member records are critical in processing claims at that higher revenue. Leadership and governance must address those issues during the transition to alternative payment models that incentivize high-quality outcomes over high-volume services. Longitudinal and episodic clinical outcome measures require interoperability between onsite and remote patient-care systems on a larger scale.

TELEHEALTH ENTERPRISE ARCHITECTURE
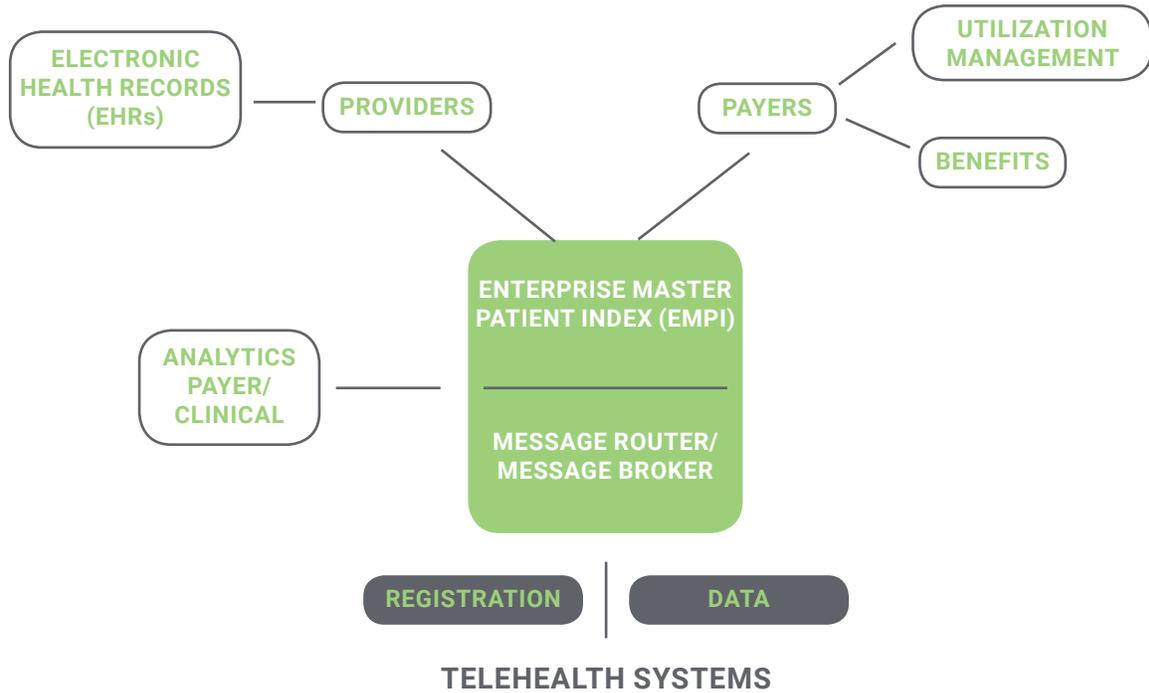
Beyond the issue of payment models, high-level governance within and between organizations also provides for centralized versus departmental agreements related to data sharing, protocols, and accountability for delivering care within and between organizations. Unique patient identification is a critical element of those governance decisions. Because telehealth allows patient/member identifiers to be established outside of typical administrative processes for the primary provider (that is, outside of the EHR), the issue of matching patient identifiers is fundamental to how organizations share data.

2. PROCESS: WORKFLOWS & POLICIES

Once governance is established, configurable clinical processes and workflows follow, with a focus on approaches that can be widely emulated and adapted. Clinical design and multidisciplinary collaboration approaches are often overlooked and underestimated as a key element of telehealth success. Focus may be put on a provider's workflow but fail to mimic the intake process in the office.

ATA TELEHEALTH PRACTICE RESOURCES

ATA's broad range of practice guidelines for telehealth form a critical foundation for the deployment of telehealth services. Grounded in empirical research and clinical experience, these guidelines form the basis for uniform, quality patient care and safety, and help to accelerate the adoption of telehealth across the healthcare industry.

As a result, information is lost or manual processes are built to overcome the missed process, leading to frustration that can impact adoption. Time and effort must be given to workflow design, understanding the number of clicks or steps required in a software application or process, identifying and resolving obstacles, and knowing what data must be measured before the program starts in an effort to build a baseline and prove return on investment. Building workflows that mimic the current processes or offer large-scale efficiencies will lead to sustainability in the long run.
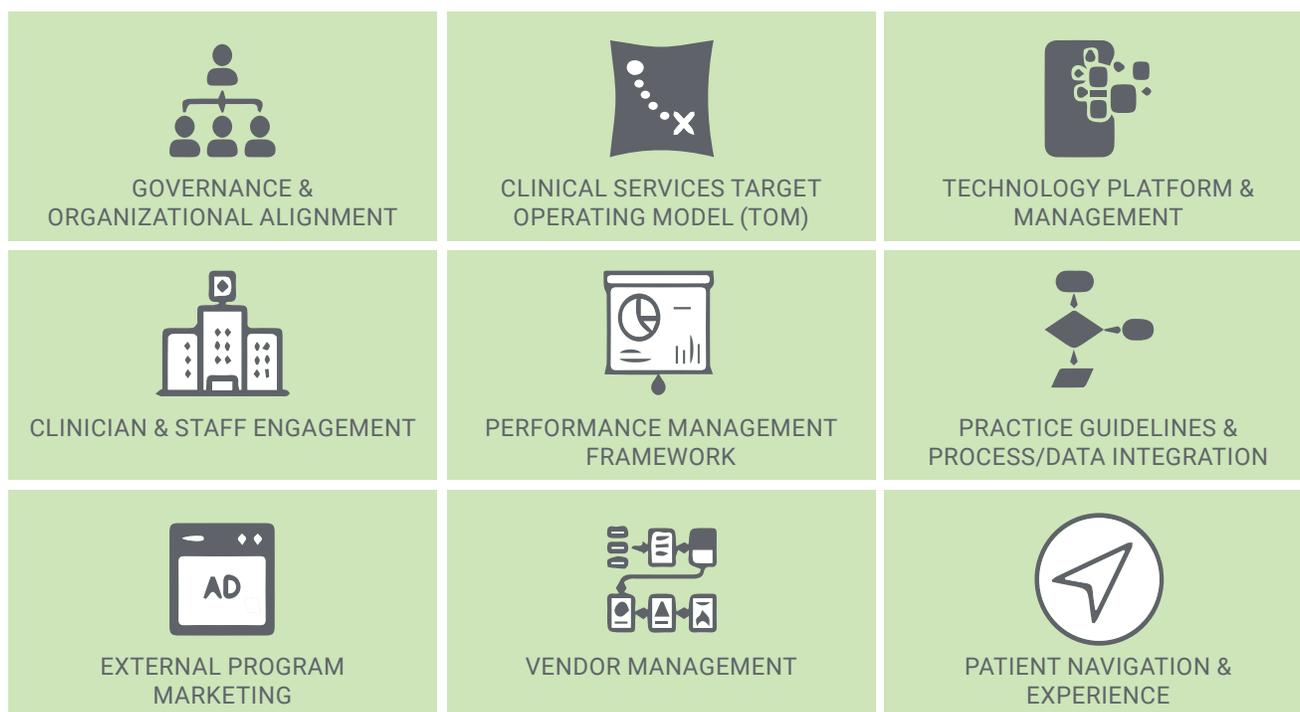
Clinical practice guidelines, such as those provided by the ATA, provide a basis for these processes that can be successfully adapted for a range of specific work environments. A key consideration is the impact of disparate, siloed systems on clinician burnout. Telehealth processes and workflows must be seamlessly integrated within the systems that care providers already use and cannot compete with established front-line systems and workflows.

CASE STUDY:
THE UNIVERSITY OF VIRGINIA HEALTH SYSTEM

An incremental approach of adding and adapting telehealth services lines is being implemented at the University of Virginia Health System (UVA). UVA has a long history of providing multi-specialty telehealth services, with more than 60 different sub-specialties of care and remote-monitoring applications. The organization strives to be centrally managed so that standardized processes are established for integrating new and existing projects and initiatives under a centralized program. All UVA telehealth encounters are conducted using standard, interoperable, and secure video technologies, and all documentation (including remote monitoring) occurs within the context of the EHR.

One of the values of a centralized process is that it allows the organization to track performance metrics for each encounter while ensuring compliance with federal and state privacy and security standards. It also allows UVA to add clinicians and services to encounters as needed with little new training or disruption to their daily workflow. Regardless of the patient's originating site, user interfaces for clinicians are standardized as much as possible to ensure ease of use and enhanced clinical productivity and efficiency. This focus on integrating and standardizing telehealth services and its technology encourages adoption, lowers cost, and supports UVA's ability to scale systems across its enterprise.

BUILDING A BEST-IN-CLASS PROGRAM

GOVERNANCE & ORGANIZATIONAL ALIGNMENT	CLINICAL SERVICES TARGET OPERATING MODEL (TOM)	TECHNOLOGY PLATFORM & MANAGEMENT
CLINICIAN & STAFF ENGAGEMENT	PERFORMANCE MANAGEMENT FRAMEWORK	PRACTICE GUIDELINES & PROCESS/DATA INTEGRATION
EXTERNAL PROGRAM MARKETING	VENDOR MANAGEMENT	PATIENT NAVIGATION & EXPERIENCE

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3. TECHNOLOGY: INTERFACE STANDARDS & MODULAR PLATFORM SOLUTIONS

With these enterprise foundations laid, specific requirements can be defined and telehealth technologies can be evaluated based on how they support near and longer-term enterprise-wide goals while providing the capabilities needed for specific departmental programs. The ideal approach is a telehealth technology platform with a flexible, modular design that maintains interoperability even as programs and resources scale and change over time. Modest investments in a standardized telehealth platform can achieve better operational efficiency and lower costs versus an unsustainable, siloed approach that supports proprietary system interfaces.

With this approach, telehealth data is aggregated and pushed to the enterprise data warehouse where it can be used for business purposes such as financial accountability, clinical quality, and operational performance reporting. Once the technology is implemented, business case assumptions can be validated and updated as needed and adjusted as reimbursement models change. Even if initial implementations are scaled as pilot projects, they can be expanded more quickly and at a lower cost by leveraging lessons learned from existing telehealth services.

This kind of configurable, connected modular design becomes a technology enabler for scalable telehealth initiatives that can reduce complexity and technical risk, even during periods of rapid change and that support long-term programs, even without a clear view of future clinical or business objectives.

4. ACCOUNTABILITY: PERFORMANCE REPORTING & RESOURCE MANAGEMENT

Operational and utilization key performance indicators are critical to health administrators and department leaders who manage limited resources and implement new telehealth initiatives. Timely, automated reporting depends on centrally aggregated, reliable, and normalized data from an interoperable telehealth platform that is connected to legacy healthcare IT systems.

To achieve scale in integrated multi-specialty, multi-care telehealth services with financial sustainability, health systems need greater transparency to confirm business assumptions, measure performance, and plan appropriate new investments for staff and technology. Aggregated data from interoperable systems feeds performance dashboards and reports to inform both business and clinical decisions. It also gives providers, payers, and patients/members timely access to standardized outcome results of clinical quality metrics for telehealth services by provider, by location or care setting, and by medical specialty.

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Resource management is also important to scale the administration of centrally managed telehealth programs. Emerging requirements for telehealth interoperable platforms include the ability to track technology inventory (endpoints, medical devices, and software); professional service contracts and agreements; libraries of enterprise-curated standard policies and procedures; and documented regulatory compliance for telehealth network availability and patient privacy. The administrative requirement for compliance documentation is an emerging requirement of telehealth program accreditation and payer contracts for increasing reimbursement of telehealth services.

HEALTH SYSTEMS: GETTING STARTED WITH INTEROPERABLE TELEHEALTH

1. **Identify the team.** Who are the key stakeholders within the organization as well as key partners outside of the organization who need to be engaged?

2. **Establish program governance.** What is your data governance model for both internal and external provider workflows? What data needs to be collected? Where does it need to reside? Who needs to have access to it and from what context? How will the data be used? How will you measure the success of your programs?

3. **Perform an inventory assessment.** What existing health IT systems are in place today and what are the plans for that infrastructure moving forward? What are the existing telehealth solutions in place today? What interfaces do these assets support that can be leveraged to support the governance model?

4. **Develop a road map.** What medical specialties or service lines will benefit most from a telehealth care-delivery model? What is the organizational capacity to establish telehealth programs for new service lines? What will the impact be on the financial health of the system by implementing telehealth care delivery for chosen service lines?

5. **Define workflows.** What are the clinical and administrative workflows that need to be supported for implementation of telehealth care delivery for initial roadmap specialties or service lines? What are the corresponding data flows that align with the data governance model?

6. **Research technologies.** What are the available solutions and technology partners that can support the work and data flows in the context of your existing health IT infrastructure (EHR, PACS, EDW, etc.), as well as your existing telehealth solutions? Will you have the flexibility to grow and adapt as needs evolve? What interfaces need to be established between systems and what IT constraints need to be managed in establishing these interfaces? How will you monitor program performance?

7. **Plan execution.** What is the project plan for implementing the initial program? How will you verify the implementation before go-live? Is your staffing plan in place and credentialing and licensing in order? How will you handle user training? How do you define success for the program and how will you measure that success?

8. **Get started.** Work in partnership with your team and vendors to execute against your plans for controlled proof-of-concepts that are structured to scale on demonstrating achievement of defined success criteria. Measure and review performance continuously to make adjustments as you learn from experience.

THE ATA'S LEADERSHIP FOR TELEHEALTH INTEROPERABILITY

The ATA, the only national organization focused on telehealth, is well-positioned to drive telehealth interoperability and document its positive impacts on people, processes, and technology adoption. The organization brings 25 years of operational experience, earned industry credibility, and its heterogeneous membership composed of payers, providers, government, technology vendors, and patient advocates to this initiative. Leveraging this unique telehealth community, the ATA is bringing together stakeholders; documenting relevant, real-world use cases that implement existing technical standards and practice guidelines; and communicating measured benefits, issues, performance, and outcomes.

The initiative is well underway. Experienced health systems are defining near-term clinical requirements and connecting with like-minded technology vendors and payers. Investments and aligned financial incentives are creating an environment to demonstrate the value of integrated clinical services that leverage interoperable platform technologies. And government and private payers, along with policy advocates, are working to increase incentives and favorable reimbursement models for broad-based telehealth implementations to help drive continued improvements in cost, quality, and access.

> The ATA will continue in its role as a facilitator and catalyst to expedite this scalable telehealth transformation, working with industry leaders to implement and demonstrate use cases that have a defined clinical foundation, technical framework, and near-term financial business case.

Telehealth interoperability is needed now, but achieving meaningful progress on its complex challenges is a community journey and investment over time. The ATA will continue in its role as a facilitator and catalyst to expedite this scalable telehealth transformation, working with industry leaders to implement and demonstrate use cases that have a defined clinical foundation, technical framework, and near-term financial business case.

ACKNOWLEDGMENTS

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