Telehealth Service Implementation Model (TSIM©): A Framework for Telehealth Service Development, Implementation, and Sustainability

Overview

Telehealth is experiencing exponential growth and substantial resources are available to guide early-stage adoption (e.g., infrastructure, regulation), including tools outlining the basic steps to develop a telehealth service. Yet, telehealth programs are not widespread, small-scale services are poorly integrated into health systems, and a majority of successful pilots are ultimately not sustained. At the Medical University of South Carolina, as our telehealth service portfolio expanded, we began experiencing a variety of growing pains related to increasing demand, planning challenges, resource needs, knowledge concentration risk, and the ongoing need to demonstrate value for telehealth through robust evaluation. We developed numerous tools including checklists and protocols but ultimately identified the lack of a comprehensive and systematic framework as a major impediment to ongoing telehealth service design and sustainment. We recognized a need for practical resources for telehealth service development and implementation beyond the startup phase and sought a solution. We identified the Information Technology Infrastructure Library (ITIL) as a valuable resource for this purpose. ITIL is a structured framework used worldwide for information technology implementation. Because telehealth is a clinical service provided over an IT platform, ITIL provided the inspiration to create a structured telehealth framework, resulting in the Telehealth Service Implementation Model (TSIM©). This novel approach to telehealth service development has enabled our institutional goal of comprehensive telehealth integration. What follows is a description of the phases of TSIM© along with their requisite components, followed by an infographic summarizing the framework (**Figure 1)**.

Strategy Phase

The Strategy Phase is the phase in which a new service is aligned with overall organizational clinical strategy. This increases provider engagement and mitigates mission creep. A driving question asked in this phase is 'what is the exact problem that the telehealth service is attempting to solve?' Subsequently, the scope of the new service is developed, accounting for factors that will affect operational and clinical workflows such as the condition(s) being treated, patient location, and providers delivering care. A simple assessment is conducted to evaluate the potential impact the new service may have on the following five stakeholders: (1) the patient, (2) the referring provider, (3) the consulting provider, (4) the payer, and (5) the health system as a whole, realizing that no service will successfully scale or sustain if it has a significant negative impact on any one of those stakeholders. In addition, a standardized scoring tool is utilized to assist with prioritizing services in the development process.

Key processes include: Strategy Management, Service Portfolio Management, Financial Management, Business Relationship Management (BRM), Governance, Technology Strategy Management, Value Creation

Design Phase

During the Design Phase, the 'build' occurs. This is when clinical and operational protocols are drafted, and performance metrics are identified. Clinical protocol design includes clinical workflow and impact on staffing. Operational protocols include workflow development regarding patient

registration/scheduling, clinical documentation, and billing. In this phase, electronic health records are adapted, compliance/legal personnel are engaged, and credentialing occurs. Performance metrics are developed, and key performance indicators are established that typically include short, intermediate, and long-term outcomes. Navigating multiple stakeholders during service design can be extremely challenging, but TSIM© provides a common architecture with defined roles and responsibilities and specific triage and communication matrices to identify who is responsible, accountable, consulted, and informed for each step.

Key processes include: Design Coordination, Risk Management, Information Security Management, Licensure and Credentialing, Contract Management, Technology Development and Integration, Compliance Review

Transition Phase
The Transition Phase is the period from 'test' to 'go-live.' Providers are trained on workflows and equipment, mock calls are practiced, and launch dates are established. Meticulous communication and robust technical and operational support are imperative, as any initial frustration has significant long-term impacts on provider engagement and implementation success. New services will remain in the Transition Phase post go-live until a predetermined patient volume and/or time interval has been met and consensus has been achieved to move the service into the Operations Phase.

Key Processes include: Training Management, Transition Planning & Support, Knowledge Management, Change Management

Operations Phase
Once a service reaches the Operations Phase, alignment between strategy and operations is evaluated from multiple stakeholder perspectives. The goal is to deliver highly reliable, high-quality services that continue to improve the patient and provider experience. Operational procedures are in place to identify and manage 'incidents' defined as any unplanned events that adversely impact the delivery of the telehealth service. Incidents may stem from personnel, process, or technical issues.

Key Processes include: Incident Management, Problem Management, Operational Technology Management, Systems Support Management, Customer Success, Data Management, Business Development, Marketing, Government Relations, Payer Relations

Continual Quality Improvement
Throughout the lifecycle, Continual Quality Improvement provides a mechanism to align and re-align the telehealth service to evolving stakeholder needs. This occurs through recurring assessment of the key performance metrics and the establishment of process improvement tools.

Key Processes include: Performance Management, Quality Review

To learn more about TSIM©, please contact the MUSC Telehealth Center of Excellence (TelehealthCOE@musc.edu).

Figure 1: TSIM Framework

Strategy

Define scope of the service

- Condition(s)
- Location of the patient
- Type of providers
- What problem is being solved?

Design

Clinical	Protocols	Workflows	Test Scripts
Technology	Equipment & Site Assessment	Procurement	Installation
Administrative	Legal	Credentialing - Regulatory	Billing - Compliance
Outcomes	Performance Metrics	KPI Tracking	Outcomes Reporting

Transition

Training
- Equipment
- Workflow

Mock Calls
- Technology Pre-check
- Dedicated Support

Go-Live
- Dedicated IT Support and Operational Support

Operations

- Deliver a highly reliable, high quality service
- Manage "incidents"
- Focus on improving the patient and provider experience

Continual Quality Improvement