Clinic Based Telehealth Operations Manual

Clinical Video Telehealth

Store-and-Forward Telehealth

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Version History

Version	Date	Comments
1.0	20 April 2011	Initial Document Development
2.0	06 May 2011	Final content clean-up and minor revision to send out the Telehealth Community for comments

CHAPTER 1: Purpose, Development Process and Audience

Purpose

The purpose of the Clinic Based Telehealth (CBT) Operations Manual is to provide standard operational guidance and resources to implement, operate and monitor quality Clinic Based Telehealth services that are both safe and effective. The manual will describe the prerequisites and critical success factors for providing these services at VA Medical Centers (VAMCs) and Community Based Outpatient Clinics (CBOCs), other VA sites of care, or where applicable, non-VA sites of care (federal and non-federal), within the framework of the national, VISN or VAMC telehealth strategic plans for telehealth. The content and tools therein are required to serve as a resource to improve and expand the delivery of care via telehealth and ensure the efficiency, quality and sustainability of these services.

The Clinic Based Telehealth Operations Manual will assist VA staff to integrate the practices and procedures used in VHA telehealth programs for the benefit of patients and practitioners. This integration of processes and procedures applies to both establishing a new telehealth service and operational standards for an existing telehealth service. The Clinic Based Telehealth Operations Manual includes links to numerous resource, support and training materials. Additional Resources providing support material for this manual are identified at the end of each section.

The Operations Manual is meant to complement existing VHA clinical and administrative directives and guidelines. It provides sufficient detail for the intended audience to gain an understanding of the complex components of developing and managing telehealth programs. The Operations Manual also contains many links to additional training, tools and resources which, *if fully reviewed and used/ completed by the appropriate staff*, supplement other requirements to ensure they are competent and able to successfully plan, deploy and manage telehealth programs that are within the scope of their practice/authorization.

Development Process

Telehealth leaders from the twenty-one Veteran Integrated Service Networks (VISNs) comprised the development committee for this Operations Manual with oversight and leadership from the Telehealth Training Centers, within the national VHA Office of Telehealth Services. Content was developed with the underlying goal being *to provide the greatest amount of relevant information in the least amount of time*. Final reviews were completed by key staff within the Office of Telehealth Services (OTS) prior to approval and publication.

Audience

Although much of the content of this Operations Manual may be pertinent to telehealth operations outside of VHA, this document is a resource developed solely for internal VHA Telehealth programs, with the intended audience being VISN Telehealth leadership, Telehealth coordinators, Telehealth practitioners and VHA staff that provide management and/or support to Telehealth Programs.

CHAPTER 2: Clinic Based Telehealth - Introduction and History

Introduction to Clinic Based Telehealth

Operating the nation's largest health care system, the Department of Veterans Affairs' (VA's) Veterans Health Administration (VHA), uses a wide variety of communication and information technologies to ensure excellence in the health care it delivers to our nation's Veterans.   New information technologies are revolutionizing health care and the VA has been recognized by the Institute of Medicine as a leader in using these technologies to improve the quality of its care delivery. VA's application of three areas of technology - health informatics, telehealth and disease management - enables the VA to coordinate the care of patients by extending and enhancing current care and case management activities.

The primary focus of this Operations Manual is Clinic Based Telehealth activities, which as the name implies, normally occurs between two clinical settings. The term Clinic Based Telehealth (CBT) applies to the use of Clinical Video Telehealth, Store and Forward Telehealth and other technologies to provide clinical care and patient health education in circumstances where distance separates those receiving services and those providing services. Information can be exchanged from one site to another alleviating these constraints of time, distance and cost. Specifically, Clinic Based Telehealth involves a patient site (originating site) and a provider site (distant site). Clinic Based Telehealth is most commonly implemented between:

- Two VA Medical Centers (VAMCs).

- A VAMC and a Community Based Outpatient Clinic (CBOC).

- Two CBOCs.

- Telehealth activity between VA Centers of Specialized Care and other VAMCs, for example those established for Spinal Cord Injury (SCI), Traumatic Brain Injury (TBI)and Multiple Sclerosis (MS).

Any of the above can take place between VA sites of care within the same VISN or between VISNs. Also, new telehealth programs are being implemented between VA sites of care and Non-VA sites of care. These programs are in their infancy and this manual will be updated once standard models for provision of care via telehealth to non-VA sites of care have been formalized. Additionally, there are advances in telehealth technologies that will allow extension of Clinic Based Telehealth into Veteran's homes (as distinctly different from existing home telehealth programs).

The two types of Clinic Based Telehealth (CBT) services are 1) Clinical Video Telehealth and 2) Store and Forward Telehealth and are defined as follows:

- Clinical Video Telehealth (CVT) – is defined as the use of real-time interactive video conferencing, sometimes with supportive peripheral technologies, to assess, treat and provide care to a patient remotely. Typically, CVT links the patient(s) at a clinic to the provider(s) at another location. CVT can also provide video connectivity between a provider and a patient at home. CVT encompasses a wide variety of clinical applications such as specialty and primary care.

- Store and Forward Telehealth (SFT) – is defined as the use of technologies to acquire and store clinical information (e.g. data, image, sound and video) that is then forwarded to or retrieved by a provider at another location for clinical evaluation. SFT in VA uses a clinical consult

pathway and VistA Imaging in conjunction with TeleReader to provide screening, diagnostic and treatment services where time and distance separate the patient and provider.

Clinic Based Telehealth services are designed to achieve:

- Increased access to specialist consultations.

- Improved access to primary and ambulatory care.

- Reduced waiting times.

- Decreased fee base care costs.

- Decreased Veteran travel.

This manual references and links to the full spectrum of telehealth services offered in the VA system, which also includes Home Telehealth (HT) that connects the VA to Veterans in their homes and other settings. Specific issues regarding telehealth into the home and other settings are addressed more thoroughly in the Home Telehealth (HT) Operations Manual.

History of Clinic Based Telehealth

VA's Office of Telehealth Services (OTS), within the VHA Office of Patient Care Services, was established in July 2003 to support the development of new models of care in VA that use leading edge health information technologies to address the pressing health needs of Veterans. Telehealth in VHA is defined as:

> *"The use of Telehealth technologies to provide clinical care in circumstances where distance separates those receiving services and those providing services. The value VA derives from Telehealth is not in implementing Telehealth technologies alone, but how VA uses health informatics, disease management, care/case management and Telehealth technologies to facilitate access to care and improve the health of Veterans with the intent to provide the right care in the right place at the right time."*

This intent is precisely Office of Telehealth Services' mission. The vision is to improve quality, convenience and access for Veteran patients to care by the use of health informatics, telehealth and disease management technologies that enhance and extend care and case management.

The Office of Telehealth Services is responsible for telehealth implementation throughout VA. The Office of Telehealth Services addresses clinical, technical and business issues whenever required to ensure telehealth programs are safe, effective, cost effective and sustainable to meet the needs of women and men Veteran patients. Collaborations that are necessary to support this work include:

- Working with other Services in the Office of Patient Care Services to incorporate telehealth and disease management technologies into routine practice.

- Working alongside other VA offices/departments, clinicians, educators and patient groups to determine how patients have access to relevant data about their own health status to enable them to actively participate in self-managing their care. An example of which is participating with other constituents in VHA in the development of My Health-e-Vet.

- Engaging in activities that support informal caregivers and volunteers. Making the home into the preferred place of care places the caregiver in a pivotal position in the care delivery process. The Office of Telehealth Services links with other VA offices/departments, clinicians, educators and external caregiver groups to understand the needs of caregivers in the context of telehealth and how they should be considered in the planning and delivery of telehealth services.

Through the work of the Office of Telehealth Services and in partnership with others, the Office of Telehealth Services supports Veteran patients' wish to achieve the following experience from their interactions with VHA: "no decision about me is made without me."

In developing Clinic Based Telehealth, the Office of Telehealth Services in VA has focused on the needs of Veteran patients as the main driver to prioritize areas of care. Consequently, the *first standardized applications* of CBT in VA were:

- Telemental health (Clinical Video Telehealth application, 2003)

- Telerehabilitation, to include Polytrauma Telehealth (CVT application, 2005)

- Teleretinal screening (Store-and-Forward Telehealth application, 2005)

- Primary Care Telehealth Outreach Clinics (PCTOC) (CBT applications, 2011)

Of the above, telemental health, the Polytrauma Telehealth Network, and teleretinal imaging are the most widespread Clinic Based Telehealth standardized applications in VA.

VHA's National Telemental Health Program

Telemental health was first documented in the United States beginning in 1959 at the University of Nebraska*. By the 1960's, the University of Nebraska was connected to Omaha, Lincoln and Grand Island VAMCs to deliver telemental health services (Wittson & Benschoter, 1972). In 1968, the VA in Bedford was also connecting Veterans using telemental health (TMH) with clinicians at the Massachusetts General Hospital (Dwyer 1973). For large scale operations, however, the Clinical Video Telehealth technologies that support telemental health were too expensive and cumbersome until the computer age flourished in the 1990s.

Beginning in 1997, the VHA implemented substantial start-up funding for telemental health services nationally. Since then, telemental health has expanded dramatically. In fiscal year (FY) 2010 alone, over 112,000 TMH visits occurred, primarily with clinicians at 76 VA hospital facilities, delivering care to nearly 50,000 mental health patients annually at 242 remote CBOCs. Additionally, in FY2010, VHA established the National Telemental Health Center (NTMHC) at the VA Connecticut Healthcare System in West Haven. Since its creation, the National Telemental Health Center has begun providing telemental health services in areas such as pain management, psychogenic non-epileptic seizure (NPES) care, as well as Compensation and Pension examinations to Veterans in the United States and overseas.

VHA's National Polytrauma Telehealth Network (PTN)

The Polytrauma Network was created in 2005 to link, via videoconferencing, VA's 4 national Polytrauma Rehabilitation Centers with the established Polytrauma Network Sites in VHA's 17 other VISNs, to improve access and to bring polytrauma care closer to home for combat wounded Veterans. Technologically, the Polytrauma Network represented VA's first clinical videoconferencing network linking all 21 VISN's with national network quality of service (QoS) standards to ensure video quality.

For the first time, clinical video traveling from VISN to VISN or coast to coast was identified and tagged as something distinct from all the other digital traffic traversing the national backbone of VA's IT network. This distinction as clinical video afforded it a higher priority and quality of service if and when IT network traffic became congested.

What began as the 21-unit the Polytrauma Network has matured into a larger national Clinical Enterprise Video Network (CEVN) that currently connects over 1,900 Clinical Video Telehealth units in VA Medical Centers and CBOCs. Most recently, VA is expanding CEVN even farther with additional Clinical Video Telehealth units in VA sites for audiology and spinal cord injury services, as well as connecting CEVN safely and securely to non-VA sites (e.g., university clinics, IHS clinics, DoD treatment facilities and private residences) for bi-directional encrypted Clinical Video Telehealth.

VHA's National Teleretinal Imaging Program

In 2006, VHA implemented a National Teleretinal Imaging (TRI) program to screen for diabetic retinopathy. Diabetes is a major burden of disease that VHA provides care for since estimates suggest that over 20 percent of the VA patient population has diabetes mellitus. The prevalence of diabetes in the Veteran population makes the timely assessment of diabetic retinopathy a major VA health care need. Teleretinal screening for diabetic retinopathy is an application whereby VHA access Veterans with diabetes for diabetic retinopathy and is based on a clinical pathway developed as part of a cooperative effort with the Department of Defense, VHA and the Joslin Diabetes Center.

Since 2006, nearly 500,000 Veteran patients have been examined via more than 450 imaging systems which are installed throughout all 21 VISNs nationwide. Since diabetes is one of the three leading causes of vision loss, the implementation of teleretinal imaging programs is resulting in more rapid diagnosis and *timely and appropriate referrals for specialty care thus *significantly reducing the risk of vision loss.

The Growth of Clinic Based Telehealth in VA

There are more than 100 additional Clinic Based Telehealth applications currently being used nationally. Table 1. lists the top 20 telehealth clinics in use during the FY 2010. Although these applications are valid uses of telehealth to provide care where distance separates the patient and provider, the Office of Telehealth Services has not completed formal reviews of all of these or

developed standardized models for their expansion nationally. The Office of Telehealth Services currently is in the process of standardizing additional telehealth applications such as teledermatology, teleaudiology, telepathology and teleintensive care unit (TeleICU). Once completed, these models will be available for widespread implementation for the benefit of Veterans.

Table 1 Top 20 Clinic Based Telehealth Clinic Stops and Names during FY11 Quarter 1

RANK	(DSS Stop Code) CLINIC NAME	All CBT Encounters
1	(718) DIABETIC RETINAL SCREENING	168,678
2	(502) MENTAL HEALTH CLINIC INDIVIDUAL	85,579
3	(373) MOVE PROGRAM GROUP	22,838
4	(304) DERMATOLOGY	17,974
5	(509) PSYCHIATRY INDIVIDUAL	13,093
6	(323) PRIMARY CARE/MEDICINE	9,275
7	(560) SUBSTANCE USE DISORDER GROUP	4,591
8	(510) PSYCHOLOGY INDIVIDUAL	3,014
9	(513) SUBSTANCE USE DISORDER INDIVIDUAL	3,008
10	(303) CARDIOLOGY	2,835
11	(562) PTSD-INDIVIDUAL	2,800
12	(123) NUTRITION/DIETETICS-INDIVIDUAL	2,661
13	(160) CLINICAL PHARMACY	2,632
14	(540) PCT-PTSD INDIVIDUAL	2,593
15	(306) DIABETES	2,459
16	(547) INTENSIVE SUBSTANCE USE DISORDER GROUP	2,454
17	(534) MENTAL HEALTH INTEGRATED CARE INDIVIDUAL	2,020
18	(301) GENERAL INTERNAL MEDICINE	1,826
19	(561) PCT-PTSD GROUP	1,640
20	(512) MENTAL HEALTH CONSULT	1,584
21	(322) COMPREHENSIVE WOMEN'S PRIMARY CARE	
22	(404) GYNECOLOGY	
23	(704) WOMEN'S GENDER-SPECIFIC PREVENTIVE CARE	

The following figures provide the growth of Clinic Based Telehealth within VA since 2004.

Figure 1 CVT Patient Numbers, FY2005-2010 and Projected through 2012
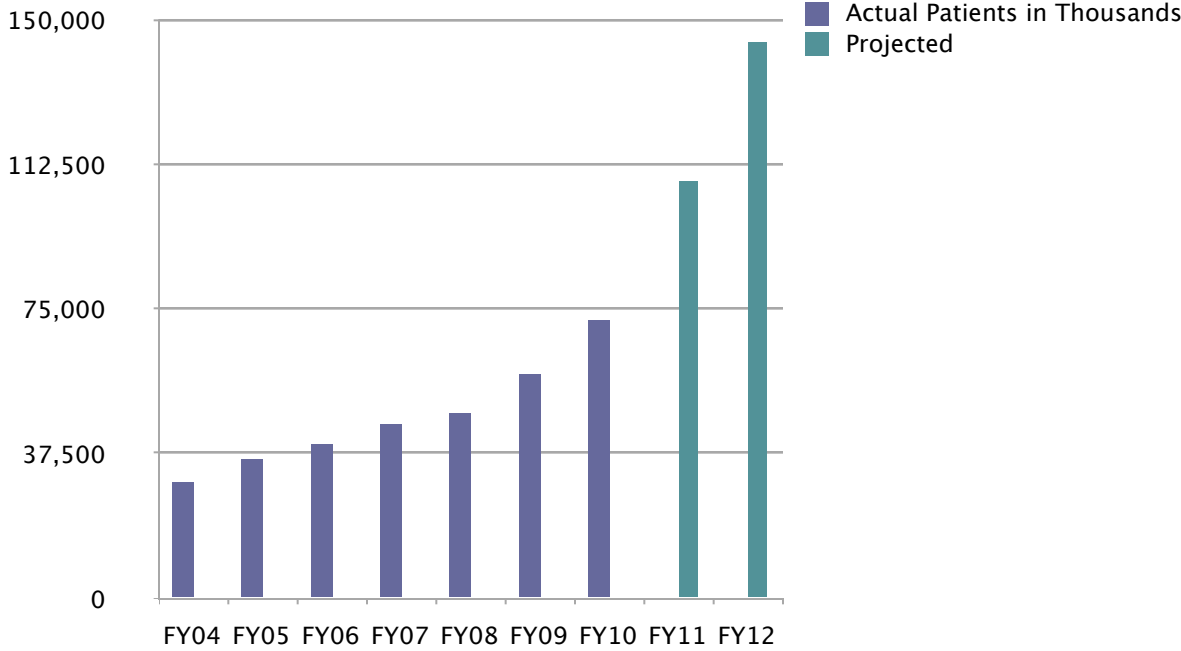
Figure 2 SFT Patient Numbers, FY2005-2010 and Projected through 2012

CHAPTER 3: Organization and Infrastructure of the VISN Telehealth Network

Organization and Infrastructure

The importance of organization and infrastructure, at both **VISN** and **VAMC** (Station) levels, in the development and operation of telehealth programming cannot be over emphasized. Because telehealth involves such a large number and variety of organizational entities within these different levels of the organization, high degrees of coordination and oversight are necessary. An effective communication plan is essential.

Telehealth must be seen as a continuum, including clinic-based, home based and mobile patient settings, as well as synchronous (Clinical Video Telehealth) and asynchronous (Store and Forward Telehealth) modalities of clinical service delivery. Table 2 illustrates this point. (Please see Positions Descriptions in the [Office of Telehealth Services Master Document Library](#) for example of position descriptions and functional statements listed in Table 2.)

Table 2 Telehealth Categories

	Clinic Based Telehealth		Home Telehealth	
	Store-&-Forward	Clinical Video	Store-&-Forward*	Clinical Video
Provider Setting	Clinic	Clinic	Clinic	Clinic
Patient Setting	Clinic	Clinic	Home	Home
Technologies	• VistA Imaging • Digital Camera • Image Capture • Peripherals	• Video teleconferencing • Telemedicine Cart • Peripherals	• Messaging Device • Interactive Voice Response (IVR) • Peripherals	• Broadband Video (MOVI) • Videophone • Peripherals
Staff	• Telehealth Clinical Technician (TCT) • Imager • Reader	• Telehealth Clinical Technician (TCT) • Telepresenter	• Care Coordinator	• Provider • Care Coordinator
Examples	• Retinal Imaging • Dermatology • Wound Care • Pathology • Cardiology • Gynecology	• Mental Health • PM&R • Audiology • Patient Health Education • Endocrinology • Gynecology • Women's Health • Pharmacy	• Non-institutional care • Management of chronic conditions • Health Promotion/ Disease Prevention • Acute Care/Case Management	• HBPC • Mental Health • Medication Management • PM&R • Home Evaluations • Care Coordination

Although using a SFT pathway, home telehealth (HT) programs have dedicated stop codes and clinic locations that are distinctly different and separate from those used for SFT. Clinical video telehealth (CVT) stop codes and clinic locations for care provided into the home setting are identical, whether provided by and HT program or a CVT program. Please see Workload Capture section for further details.

Clinic Based Telehealth is one part of the telehealth continuum and must be integrated into an overall telehealth organizational matrix. In order to effectively plan, deploy and operate telehealth programs, a basic infrastructure and oversight should be in place at the VISN and VAMC levels. Important elements of this infrastructure which relate to Clinic Based Telehealth are listed in Table 2: Oversight.

This manual will describe the underlying processes to 1) plan, 2) implement and 3) manage the day-to-day operations for maintaining and expanding safe and effective Clinic Based Telehealth programs.

A VISN Telehealth program and infrastructure consists of both Clinic Based Telehealth and Home Telehealth services and programs and are designed to achieve:

- Increased access to healthcare, including primary care and specialist consultations and patient education.

- Improved continuity and coordination of care, across the continuum of care.

- Reduced waiting times for access and treatment.

- Provide alternatives to long-term institutional care.

The general strategy for implementing telehealth in a VISN takes place in five stages:

1. Develop, standardize and maintain the organizational, clinical, technical and business infrastructure at VISN, VAMC and program levels, as a foundation to all telehealth development and operations.

2. Identify the healthcare needs of Veteran patients that telehealth can address appropriately, safely and cost-effectively, ensuring a thorough analysis of cost/benefit and sustainability.

3. Determine suitable telehealth clinical, business and business/management processes to meet the identified healthcare needs.

4. Design, implement and manage telehealth programming to meet identified health care needs.

5. Practice continuous quality improvement processes to optimize telehealth operations at all levels of the organization.

An aspect of a VISN Telehealth Program is to provide timely, efficient access to healthcare, improve clinical outcomes, improve patient satisfaction and reduce health care costs. The VISN Telehealth Program is also charged to promote and advance the use of telehealth modalities for clinical care, consultations, health promotion and disease prevention and coordination of care, where such use is deemed appropriate.

The organizational structure of the VISN Telehealth Program is designed to ensure local control with proper VISN oversight for planning, deployment and operational functions. Integration with existing programs and processes as well as functional communication with VISN and station systems is a critical success factor. Also, there are technology infastructure components to support the VISN which include the VHA Clinical Enterprise Videoconferencing Network (CEVN) and telereader/ VISTA applications.

Established in 2009, the CEVN represents the clinical component of the larger Enterprise Video Teleconferencing Network (EVTN) . The CEVN provides the VISN telecommunications capability and clinical videoconferencing technologies for telehealth that are interoperable in a manner that is secure, reliable, of sufficient quality, cost-effective and readily usable by staff. Please see Chapter 12 for more information regarding CEVN.

The telereader/ VISTA application supports the VISN infrastructure through the clinical workflow for teleretinal imaging. The initial surveillance consult is initiated for the diabetic patient, either by the primary care provider or the imaging technician. The patient arrives as part of an associated visit or as a separate retinal screening visit, images are acquired and appropriately demonstrated to the patient at the imaging workstation. Images are sent via the DICOM gateway to the VistA server, where they are accessed at a remote site by in independent licensed provider certified to review the study. The resulted study is then available to the imager or primary care provider, who acts on the report to appropriately appoint the patient for future follow-up. Please see Chapter 12 for more information regarding TeleReader and VistA.

CHAPTER 4: Planning and Deploying Integrated Telehealth Services

Planning for Clinic Based Telehealth Services

Planning is essential. Developing a plan to implement Clinic Based Telehealth involves numerous steps. A methodological approach is recommended to ensure that critical elements are not overlooked, which could seriously impact overall program success. Successful telehealth applications integrate technology with clinical program need. The primary components of planning for integrated telehealth services are:

- A thorough *needs assessment*, which includes basic infrastructure such as staffing, equipment and space.

- A strong *business case* which includes an analysis of the return on investment and plan for sustainability, which is an essential foundational element for telehealth program development.

- A well-developed *budget* which will identify the resources and provide a foundation to track, report and sustain the program financially and provides additional evidence that the program is both *feasible and sustainable.*

- Gaining approval and *Service Level Agreements* which include service chief and Chief Medical Officer (CMO) approvals along with *clinical*, business and technology requirements for deployment, organization, accountability and management.

Needs Assessment

There may be situations where a health care service may want to formally establish a new telehealth program and/or expand an established telehealth program. In either instance, the program needs to show solid evidence that the telehealth program provides cost-effective and equal or greater benefits for patients over traditional care. In order to do this, one may consider soliciting the assistance of staff that have expertise in this area (i.e. health systems specialist, health services researcher, etc) to conduct a formal needs assessment.

The needs assessment provides a structure to guide you in developing your program business plan. The needs assessment identifies the goals and objectives of the project as well as resources and activities needed to achieve the plan. In order to develop the business plan, one needs to complete a needs assessment. The needs assessment is used to provide information such as the targeted population, business perspectives and metrics for performance evaluation. A needs assessment is also a systematic method of identifying the unmet needs of the population and making changes to a population that will benefit from an intervention. The criteria in the needs assessment appraisal must include the following:

- Access to the targeted population: *What specialty population(s) will you serve with telehealth?*

- Expected outcomes from both the clinical and business perspectives: *What do we hope to accomplish using telehealth?*

- Performance measures: *What performance measures will telehealth affect?*

- Space and resources available: *Is there appropriate space to conduct a telehealth visit?*

- Staffing needs: *Is there a specialty provider willing and able to use telehealth? Are there other clinical staff that can assist in the telehealth visit?What training may be needed to support/provide telehealth? Are there specific staffing requirements for special populations, e.g. female technicians for women Veterans, and Chaperones for gender-specific examinations?*

- Capacity and workload: *How many specialty clinics could utilize this technology based on the resources available?*

- Technical considerations: *What types of telehealth equipment will best serve your specialty population? Is there adequate bandwidth to support new clinics and/or new equipment?*

- Equipment inventory: *What equipment currently exists to support telehealth? Will it meet the patient needs as well as information and privacy security and quality standards of practice?*

The telehealth service planner needs to determine the patient population as well as the specific fields of relevance for analyses. Useful data includes:

- Patient data

- Documented problems in meeting the needs of a group of patients (such as distance and travel barriers, no-shows, particular medical problems, weather problems, etc.)

- Available resources

- Workload and capacity

- Special needs populations

- Provider data

Information received from the [needs assessment](#) will help support a productive clinical strategic plan to deploy telehealth.

Business Case Development

A business case is developed to support the notion that the program will be fiscally responsible and sustainable. A business case is made to assure that the program will provide not only quality care but also a return on the financial investment and have potential for sustainability. The needs assessment is also a major component of the business case and constructed from the 1) number of patients that have health needs that can be treated via telehealth and 2) the costs of providing care via telehealth as compared to other ways of doing so. Given the current demand for primary and specialty care services in VHA and the mandate to improve access to services, especially at geographically remote sites, it is likely that the need for telehealth will continue.

Factors to consider when developing the business case for telehealth:

- Costs associated with equipment, labor and facilities.

- Capital investment, expenses and overhead.

- Start-up and ongoing sustainability for both the patient site and provider site.

- Complex issues surrounding workload and reimbursement.

- Lifespan of technology.

It is important to develop specific strategies and targets to guide the Clinic Based Telehealth program development. The next step in developing the plan is execution and deployment. Information obtained from the needs assessment should guide the plan. The following are key elements that should be included when developing the strategic plan:

- The plan should focus on the "Who, What, Where, When and How" of both clinical and business aspects of the telehealth program.

- Roles and responsibilities of the team should be well-defined for a successful implementation.

- Action items and deadlines should be clear.

Budget Development

Due to the national VA initiatives for telehealth, there has been a recent infusion of funding to VISNs for expansion of telehealth, especially to Veterans in rural areas. For the majority of telehealth programs, these resources are allocated from the VISN to VAMCs or additional funding is provided at the VAMC level. In either scenario, there is a need to assess and plan for funding requests to support telehealth.

Things to consider when putting together the budget proposal:

- Perform a needs assessment of telehealth services at VISN and/or facility level.

- Identify necessary resources (i.e. telehealth equipment, staffing, furniture, etc.).

- Estimate the cost of resources and set the budget request.

- Develop a proposal that describes the needs, goals, strategies, investment, evaluation and expected outcomes.

- Document the telehealth program investment payback period.

- Refine and specify estimated items as the project is implemented.

- Gather any supporting data reflective of the needs. For example: waiting time, travel cost etc. Assistance from VISN strategic planners may be required to obtain this data. Establish targets for all utilization, expenses and benefits (both indirect and direct).

Feasibility and Sustainability

Feasibility is defined as the ability for a program to meet a clinical need and achieve specific outcomes. Sustainability is a program that is developed in such a manner that it will be able to continue functioning long into the future and achieve financial and clinical stability, while meeting clinical outcomes and providing quality care. Long-term sustainability of any telehealth program requires

methodical planning and evaluation. It is important to train providers and give providers feedback that they are doing a good job (e.g. data on number of visits per provider, service, patient satisfaction, etc.).

Funds may be available to pilot a program, but evidence must be provided, in terms of quality and performance outcomes, in order to continue and/or expand a newly established program beyond the pilot phase. Clinical, technical and business elements need to be assessed and analyzed using data collection, as well as the design of business operations to ensure processes are in place to enable effective, efficient and sustainable telehealth programs.

The following contacts may be helpful to provide guidance regarding feasibility and sustainability of a program:

- National Telehealth Training Centers

- National Telehealth Clinical Video Telehealth Leads

- VISN Telehealth Leads/Program Managers

- The Office of Telehealth Services Intranet website

Specialty "hub" and "spoke" programs in VHA (e.g. Endocrinology televisits between Medical Centers and affiliated CBOCs, Spinal Cord Injury specialty consults between SCI hub site and support clinics)

Satellite Broadcasts for telehealth (available on VA Knowledge Network and re-broadcast on the Content Distribution Network). Provides current updates and changes in the field and allows for interaction between the field and subject matter experts.

Gaining Approval and Service Level Agreements
All Clinic Based Telehealth development and implementation activities must involve those individuals who have ultimate responsibility for governance, administrative and fiscal authority and oversight of the programs. An example of the individuals with approval authority include the Chief Medical Officer(s) (CMOs), Director(s), Chiefs of Staff (COS) and clinical service chiefs for each location involved in the planned telehealth service. Potential programs should be thoroughly vetted and have approval obtained from the governing individuals noted at the VISN and facility levels depending on the type of program. The approval process should go through appropriate channels.

Included in the approval process is the completion of the Service Level Agreements (SLAs) and Memorandum of Understanding (MOU) agreements. Credentialing and Privileging also have levels of administrative and clinical approval. Examples of these documents are found in the links below. The resources will guide you through the steps of the agreements and their purpose. The Office of Telehealth Services, in cooperation with the VISN telehealth leads, has developed the resources to support the development and implementation phases for Clinic Based Telehealth programs.

Deployment and Management of Clinic Based Telehealth Services
The key elements to success are the knowledge of all the integral components of Clinic Based Telehealth(CBT), to include the clinical applications, business plan and partners, Veteran populations

to be served and promotion and outreach strategies. The core of the Clinic Based Telehealth business plan is to implement business practices that support the goal to improve access, quality of care and Veteran satisfaction by using state of the art telehealth technologies and the supporting IT infrastructure that facilitates provision of care to Veterans.

The key to success is to implement the business plan simultaneously with your clinical plan. No matter how robust the technical infrastructure is, a telehealth program cannot be successful without appropriate business infrastructure.

Policies and procedures are used to ensure quality of the clinical practice in telehealth and will establish responsibility for the specialty services provided. Policy and procedure documents define the structure of the service and provide standardization of procedures for safe, high quality delivery of care. Some elements that must be covered by polices and procedures are:

- Staffing: Roles and responsibilities of staff involved.

- Credentialing and privileging.

- Clinical Protocols, to include specific specialty clinic telehealth protocols.

- The CBT visit and clinical environment, to include patient privacy, safety, and confidentiality.

- Scheduling and clinical pathways.

- CBT Documentation and informed consent.

- Workload Capture and Data Management.

- Telehealth Technology, including patient data security.

- Staff competency and training. (maybe special training requirements for special populations, including women Veterans.)

- Patient and caregiver education and training.

- Qualtiy and Risk Management, to include Conditions of Participation and Emergency management.

The Chapters that follow will provide further detail and resources for these critical components as well as promotion of telehealth services through information outreach.

Clinic Based Telehealth Service Deployment Checklist
This is a comprehensive 65 item checklist which should be used each time a new clinic based telehealth program is contemplated.

Telehealth Needs Assessment Template
The Needs Assessment is a fundamental component to any telehealth development.

Telehealth Service Approval Process
Reference chart to ensure that all approvals are completed

Chief of Service Line Approval Form
Template for approval of Service Line Chief

Chief of Staff Approval Form
Template for Chief of Staff approval

CHAPTER 5: Human Resources: Key Positions, Roles and Responsibilities

Human factors involved in a telehealth visit are crucial to a successful service and must be considered when creating telehealth clinics. A major challenge in the implementation and sustainability of programs is working with a large number of individuals, varying procedures and protocols, different work styles, development of position descriptions and functional statments, biases and human factors. Human factors include the ability to build relationships, communicate effectively and provide quality cutomer service. It is the human factors that matter most in the Veteran's experience during a telehealth visit. The people involved arguably contribute as much, or more, toward a successful visit or service, as do specialized telehealth equipment or adequate video connections.

One of the critical predictors of a successful and sustainable telehealth program is adequate, appropriate and competent staff. There will need to be the same professional and support members available as there are in the regular clinical setting. Additionally, there needs to be adequate technical support staff and, if possible, a facility telehealth coordinator.

Key Positions

Staffing is one of the challenges of Clinic Based Telehealth and Store-and-Forward Telehealth implementation. The best practice staffing model for telehealth is inclusive of several positions and levels that are designed to facilitate the operation of Clinic Based Telehealth and Store-and-Forward Telehealth services. Once the basic administrative and clinical operational systems are agreed upon and established, the heart of the successful patient visit is dependent upon the patient, provider and support staff preparation. The roles and responsibilities of the primary care provider, specialty provider, site clinical coordinator, Telehealth Clinical Technician, clerk and patient must be clear to each person involved to provide a smooth and efficient telehealth visit.

Something that is particular to this service is that all staff involved need to be synchronized in the delivery of care. The location where the patient is receiving the Clinic Based Telehealth services is known as the patient site (Originating Site or OS). Generally, the patient site is at a CBOC or other outpatient clinic (OPC). The provider location (also known as the facility site or Distant Site (DS) and is generally where the primary care, specialty or consulting provider is located. This particular section will provide examples of staff position descriptions, roles, duties, recommended competencies, training and orientation for those involved in Clinic Based Telehealth, as there are the Joint Commission (JC) requirements for telehealth programs to at least have:

- Position descriptions for each staff.

- A training plan for orientation and regular review.

- Trouble-shooting procedures.

VISN Telehealth Managers and Program Leads

The mainstay for any telehealth program is the VISN-level Telehealth Program Manager (Telehealth Program Lead). The VISN Program Telehealth Manager is responsible for the

development, deployment, management and quality of all telehealth programs throughout the VISN. Due to the size and scope of these responsibilities, the structure may also include a VISN Lead assigned to CBT and another to Home Telehealth (HT) services. These positions are responsible for the execution and operation of telehealth programs within the VISN. To optimize the implementation of all telehealth services, as a standard clinical practice, it is recommended that this position be aligned under the VISN Chief Medical Officer (CMO).

Facility Telehealth Coordinator

The Facility, or VAMC-level, Telehealth Coordinator (FTC) is a key player for success. This position is responsible for the execution and operation of telehealth programs within the facility and other divisions (i.e. CBOCs). Responsible for theoverall planning, coordination, implementation and evaluation of clinical applications of telehealth and video conferencing technology based on facility needs. The Facility Telehealth Coordinator works collaboratively with the VISN-level Telehealth Program Manager, when applicable. To optimize the implementation of Clinic Based Telehealth as a standard clinical practice, it is recommended that this position be aligned under the facility Chief of Staff.

Clinical Champion

This is another key player for success. The Clinical Champion is a practitioner that strongly supports the implementation of one or more Clinic Based Telehealth applications into the system of care and is interested in promoting Clinic Based Telehealth among peer providers. The following elements describe this key role:

- Is an "expert" on Clinic Based Telehealth within specialty clinics.

- Can clear the path for Clinic Based Telehealth deployment by working around barriers and assisting with resistance to change that may occur with any new program implementation.

- By serving as a role model and strong supporter of telehealth services, the Clinical Champion can encourage and motivate others to develop similar programs in their own specialty areas.

Clinical Provider

Telehealth cannot be conducted without the distant primary care and specialty providers' participation and contributions toward the telehealth program. It is important for the provider to have a good understanding of the benefits telehealth can provide to both Veterans, the VA and themselves. The providers establish many of the clinical service roles, exclusion criteria and duty specification such as:

- What services will be offered through telehealth and at which sites.

- Defining the population being served through telehealth by either primary care, specialists or consulting providers.

- Providing criteria for a specialty consult to the referring provider.

- It is also key that the specialty and primary care provider collaborates with CBOC staff, particularly the patient site coordinator for telehealth services to set up high quality interactions with Veterans.

- The provider must also be very familiar with all aspects of the telehealth equipment and the clinical environment.

Telepresenter and Telehealth Clinical Technician

The telepresenter and Telehealth Clinical Technicians can be any person assisting the provider in the presentation of the patient using video-conferencing. The telepresenter is essential for the clinical aspects of the intervention, assessment, diagnoiss and evaluation. The telepresenter has been known to be the hands for the provider. The telepresenter is also a key part of the clinic team specialty and/or PACT teamlet, available for all telehealth visits. Depending on the skills needed for the encounter, telepresenters can also be licensed independent providers, registered nurses, licensed practical nurses, and Telehealth Clinical Technicians (TCT). The Telepresenter and Telehealth Clinical Technician are usually assigned the following duties:

- Cover all telehealth clinics scheduled for the day. (recommended)

- Manage all required screenings and complete any clinical reminders, documentation, scheduling and address opening and closing the encounter required prior to the actual telehealth visit.

- Assist the primary care or specialty provider with the patient physical exam as needed.

- Be responsible for any patient education, documentation and assistance with workload capture that is basic for the completion of the visit.

- Have regular contact with the Facility Telehealth Coordinator to work out any process issues, equipment needs/problems, data collection and any other logistical issues.

- Perform all Telepresenter duties for the encounter.

- Provide ideal customer service to all Veterans. Appropriate scheduling and follow up for patients is critical.

- May want to consider having a female Telehealth Clinical Technician who can also serve as required chaperone for female patients, when required.

The Telehealth Clinical Technician is a staffing asset that supports many aspects of telehealth. They are key staff that support the clinical, business and technical areas needed to deploy, implement and manage telehealth. They are also serve an important role clinically as a chaperone for female patients (please refer to VHA Handbook 1330.01 "Health Care Services for Women Veterans" for services that require female chaperones). Their role is complex and diverse. Please review the functional statement and position description for role specifics.

SFT Imager

At the patient site, the imager is essential for the clinical aspects of the intervention, should be part of the clinic team and available for all Clinic Based Telehealth visits. Telepresenters and Telehealth Clinical Technicians can also be trained to perform the duties of a Store-and-

Forward Telehealth Imager, or this can be a dedicated position such as in the teleretinal screening clinics. The duties of the Imager include:

- Functioning as a patient care coordinator and being familiar with computer use and CPRS, the scheduling package and Veterans Health Information Systems and Technology Architecture (VistA).

- Obtaining digital Store-and-Forward Telehealth images according to validated protocols.

- Specifically for teleretinal screenings, providing post-imaging patient education sessions which include a brief anatomical explanation of important appropriate structures and an overview of the pertinent condition.

- Specifically for teleretinal screenings, reporting and communicating findings of the image evaluations to appropriate providers and clients and being responsible for maintaining a patient database.

- Identifying patients requiring immediate image evaluation once images are obtained and assisting in scheduling and appointing patients for referral and comprehensive specialty care examination.

- Being proficient in navigating CPRS, Vista and proprietary image acquisition software required to operate the digital imaging systems.

- Being proficient in operating digital retinal and hand-held imaging systems to acquire non-simultaneous stereoscopic images for retina and appropriate skin/ lesion images for dermatology.

  o May want to consider having a female Telehealth Clinical Technician who can also serve as required chaperone for female patients, when required.

Clerical Support

An important component responsible for the administrative tasks involved in every visit. It is an existing position at the clinic, which will be used for Clinic Based Telehealth as well, to support the services as follows:

- The amount of missed clinic appointments can be reduced by clerk involvement either through making reminder phone calls to the Veteran or through reminder letters.

- When the Veteran arrives for the scheduled appointment the clerk checks the Veteran in through VISTA into two clinics; specialty provider site (facility-distant) and patient site (originating). The Veteran must then be checked out of VISTA once the Clinic Based Telehealth clinic appointment is completed.

- The clerk will also schedule Veterans for follow up appointments if ordered by the specialty provider.

- Responsible to hand out and collect the patient's satisfaction surveys and send them to the telehealth coordinators in a timely manner.

Technical Support

IRM, IT and Biomedical Engineering (the group of individuals that support information and clinical technology) are responsible for the set up and troubleshooting of pertinent equipment used for Clinic Based Telehealth. They provide technical support to the providers and support staff related to the hardware for reliable connections and efficient performance. They make recommendations to the Facility Telehealth Coordinator on new equipment, replacement and maintenance.

Education and Training

Training is the cornerstone of successful telehealth efforts. Perhaps the single greatest challenge when installing telehealth systems into the existing traditional clinical environment is assuring that clinicians are comfortable using the new technologies and are aware of the clinical and business aspects. Superior interpersonal skills are also required of all telehealth staff. The Boston Store and Forward and the Rocky Mountain Telehealth National Training Centers have developed multiple sources for training and an extensive library of resources. More information and resource links can be found in the Staff Education and Training Section.

The Following Links Will Direct You to Related Resources

Position Description Telehealth Clinical Technician
Standardized Functional Statements and Position Description for hiring and human resource management purposes.

Ocular Imager Position Descripton (GS-06)
The research assistant serves as the Ocular (digital retina) Imager and as an ophthalmic technician for the technician assisted components of an eye examination for the detection of diabetic retinopathy and non-diabetic eye disease

Facility Telehealth Coordinator Competencies
This document assists in providing guidance on the skills and knowledge component of the Facility Telehealth Coordinator (FTC) position.

Telehealth Clinical Technician Competencies
This document assists in providing guidance on the skills and knowledge component of the Telehealth Clinical Technician (TCT) position.

CHAPTER 6: Credentialing and Privileging

The process of credentialing and privileging reduces the risk to patients for adverse outcomes by completing the appropriate assessment of staff and reducing the risk for liability. The Directives listed in the resources section allow for systemic review that ensures practitioners have the competencies for approved privileges and provides a comprehensive statement on the requirements for VHA provision of remote services through Clinical Video Telehealth. Criteria must be followed as stated.

A September 16, 2010 Memo from the Deputy Under Secretary for Health Operations and Management (10N) provided guidance on a major change in VHA's process for privileging practitioners using telehealth to provide care. In summary, the practitioner using telehealth to provide care need not be privileged by the 'patient' facility as long as there is a formally agreed Memorandum of Understanding (MOU) between the 'providing' and 'receiving' VA facilities. The Memo included an extensive 19-page sample MOU as guidance to facilities on how this should be done, to include the quality review requirements for both sites.

The signed Memo and Sample MOU are included below as additional resources. Since September, 2010, The Office of Telehealth Services has further refined how, under the VISN MOU umbrella, Clinic Based Telehealth services are actually implemented and documented using individual Telehealth Service Agreements (TSAs) between facilities for discrete clinical applications (e.g. a TSA for intraVISN telemental health services, a TSA for intraVISN teleretinal imaging services, etc.) As stated elsewhere in this manual, Clinic Based Telehealth services require the MOU and, for each service, a TSA. The reward is: the Clinic Based Telehealth provider need only be privileged in one VISN facility.

The Office of Telehealth Services applauds this development and continues to work to further streamline the process, while ensuring patient safety.

The Following Links Will Direct You to Related Resources

Credentialing and Privileging Memorandum
Agreed and signed by facility leadership and provides governing for remote privileging process for telehealth. Must be used in conjunction with the telehealth Service Agreement.

Telehealth Service Agreement
Essential document for each telehealth application to identify telehealth variables. To be used in conjunction with the Credentialing and Privileging MOU

CHAPTER 7: Clinical Protocols

Telehealth Clinical Protocols are tools and processes that assist in identifying variables between telehealth and traditional face-to-face healthcare. The goal of all clinical care is to provide the right care, at the right time and place while assuring patient safety and quality outcomes. The tool assists in exploring all areas of clinical assessment, diagnostic testing, support service, interdisciplinary support and implementation of the care and follow up. The Telehealth Clinical Protocol process identifies the variations in clinical practice when providing care with the use of telehealth technologies. Once identified, solutions to variations are recommended by the clinician panel of experts for the telehealth service. From the solutions, the technology algorithm is developed and the necessary skills for the Telehealth Clinical Technician and/or Telepresenter identified.

The following provide several examples of clinical protocols for telehealth:

- An example of this process is the palpation variation found in a physical examination. The distant provider is unable to touch and palpate their patients due to the distance and use of technology. The decision is to assure the Telepresenter and Telehealth Clinical Technician are trained professionals capable of this skill and assessment.

- Another example is the need for the patient to complete a questionnaire prior to a patient education group encounter. The method has been to fax the documents to the patient site, have the Veteran complete and then fax back. Through this process, the addition of a document camera was used during the session to view the document during the Clinical Video Telehealth visit. This expedited the information and enhanced the encounter. The Veteran did not have to travel for another visit and the information was helpful in developing the treatment plan the same day of the visit.

- For teleretinal screening, when anatomic or other factors limit the ability to obtain readable images, the pupil can be dilated to optimize image quality and provide the opportunity to make a teleconsulting diagnosis. This pathway limits the number of ungradeable studies and reduces travel requirements for the patient since in many instances, they will not have to be referred for an in-person eye examination if images are readable.

The Following Links Will Direct You to Related Resources

Telehealth Clinical Protocol Development Tool
Tool and process to identify variables between telehealth and traditional face-to-face healthcare.

Unlicensed Assistive Personnel Dilation Guidance
Provides discretionary use of Unlicensed Assistive Personnel for medication administration.

CHAPTER 8: The Clinic Based Telehealth Environment

The additional advantage of the telehealth visit, in contrast to the traditional medical visit, is the extension of the medical provider's knowledge, competence and resources across time and space. Creating the clinical environment and using appropriate communication skills when utilizing telehealth can be a challenge for health care providers who are used to the traditional face to face/ hands-on visits with a Veteran. At the same time, it is critical for success. It is not about the sophisticated technology in place, it is about the Veterans' experience which will also determine if they want to use telehealth again.

Conducting the Clinical Video Telehealth Visit

There are several key things to consider for a successful visit. Providers must be constantly aware that they are interacting over a different medium. Rather than being in the room with the patient, they are working over distance through a limited "bandwidth" which to some degree alters the ability to interact and communicate (see Technology and Pathways for more details on bandwidth and how to ensure sufficient resources). Patient-provider rapport is affected by this medium. The providers must take particular care to try to overcome these limitations. Careful introductions are the first crucial step in initiating adequate interaction and communications.

It is crucial to begin each Clinical Video Telehealth visit with complete introductions for the patient and any caregivers or other support personnel present. All individuals involved on camera and off camera should be introduced. At times there may be personnel present who are not seen by the patient on the monitor. Nonetheless, these individuals should be identified to ensure the patient has awareness of their presence and participation. This is particularly important for support personnel and students who might "pop into" the patient's view in support or educational roles. Without all individuals being identified at the outset, there is risk that the patient will feel confidentiality and privacy have been violated.

Conducting the physical examination by telehealth follows standard medical protocols and procedures with the exception of the tools. Specific instruction about the various telehealth equipment and devices are presented later in this manual.

Several key guidelines for a successful visit:

- Equipment images and audio must be clear.

- It is essential that the Veteran see the clinician consistently throughout the visit.

- The clinician must appear to be making eye contact with the Veteran. For example, computer monitors should be placed to the side for optimal patient viewing during the contact.

- Other video "table manners" must be considered for an effective interaction.

- Be yourself, speak naturally and clearly, don't shout, use a normal speaking voice.

- Be prepared.

- Be camera conscious, keep the camera on the speaker and/or material presented.

- Introduce conference participants.

- In a group conference, speaking one at a time ensures understanding. The microphone should face toward the speaker.

- Avoid distracting behavior such as side conversations and note passing, interrupting the speaker, finger tapping, paper shuffling and whispering, as the camera is sound activated.

Conducting the Store-and-Forward Telehealth Visit

To conduct a successful visit, the provider must be able to appropriately identify patients needing screening for diabetic retinopathy or dermatological conditions. It is important to begin every Store and Forward Telehealth visit with an appropriate explanation to the patient of the purpose of the visit and what will actually take place. Providers must be constantly aware that they are the only intervention that takes place directly with the patient, since the specialist reviewing the images or other data will not have contact with the patient. Therefore, it is critical to obtain as much historical and helath-related information from the patient that is not necessarily included in the patient's CPRS medical record. This information can then be available to the reader, who must make a diagnosis as part of the teleconsulting encounter, but in fact never has any interaction with the patient.

Specific instructions to the patient and several key guidelines are required for a successful store and forward visit:

- The provider must give direction and specific instructions to the patient to ensure that quality images are obtained.

- The equipment was be properly maintained and appropriate hygiene measures take place in front of the patient.

- Appropriate demonstration of the images to the patient should occur immediately following the imaging session.

- Images must be deleted form the workstation and the appropriate QA/QI measures taken while the patient is in the examination room.

- The provider should provide assistance by escorting the patient back to the waiting room if the patient has limitations ambulating.

The Clinical Environment and Space

It is not only important to ensure that the technology and staff are appropriate, but also the clinical environment as well. Space is a challenge in many VAMCs and especially CBOCs. The Facility Telehealth Coordinator and/or telehealth planner must ensure that there is adequate and appropriate space where clinical telehealth encounters can take place. There are some requirements that are standard for all clinical spaces, such as adequate space for special needs patients and/or employees to navigate using wheelchairs and this must be re-assessed with the addition of telehealth equipment into the space to ensure it still meets accessibility standards.

Different telehealth clinics require different space and equipment. For example:

- A primary care clinical encounter which is conducted in an examination room fitted with exam table and other necessary equipment. Privacy and confidentiality needs are recognized and addressed. The teleprimary care visit must have the same considerations.

- For gender-specific procedures and examinations, clinics need to ensure that the clinical environment and spacing of the examination rooms, equipment, and female chaperones are considered (See VHA Handbook 1330.01 Health Care Services for Women Veterans).

- For teleretinal imaging, patient (acquisition) sites must provide the space necessary to accommodate the imaging device, workstation and supporting furniture. Rooms require darkening and preferably should be located in a windowless location or should use complete blackout filters over windows. As a general rule, roughly 100 square feet should be allocated for the imager, workstation and patient care activity.

- Clinical Video Telehealth often uses group clinics for patient eduation and group therapy. Space is dependent on the size of the group and the clinical application. Technology can include: document cameras, presenter software, interactive whiteboards, projectors and large monitors.

CHAPTER 9: Scheduling and Clinical Pathways

Clinical Video Telehealth

Scheduling has been identified as the single most powerful predictor of success in Clinical Video Telehealth. Because Clinical Video Telehealth encounters are synchronous events, the scheduling aspects of the clinical pathway have heightened importance. Clinic Based Telehealth encounters can be within a facility or health care system (Intrafacility), between facilities or health care systems (Interfacility), or the Veteran patient may be located at a non-VA clinical setting. Figure 3 shows the clinical pathway for each will be described in the document at length and its importance to the Telehealth Service Agreement.

The scheduling of telehealth visits is more complicated than the scheduling of traditional in-person medical visits. However, at a minimum, the scheduling system for visits should not differ from the system already in place for in-person visits in terms of telephone access number, personnel, etc. Scheduling Real-time telehealth clinics involves numerous resources:

- The patient (VistA).

- The provider (VistA).

- Female chaperones for gender-specific examinations and procedures

- Rooms on both sides.

- Technology on both sides.

- Bandwidth.

- Telepresenter (if required).

When any one of these resources is absent at the time of the clinic, the encounter typically fails, with obvious negative consequences (see Risk Management) It is, therefore, essential to have a comprehensive and capable Clinical Video Telehealth (CVT) scheduling process in place. The CVT Clinical Pathway, developed by the Clinical Video Telehealth VISN Leads presents such a resource. Remember that the Telehealth Service Agreement must be used in conjunction with the pathway, in order to identify variables and assign responsibility. Clinical Video Telehealth entails scheduling the patient, provider, rooms and equipment that is not necessarily dedicated to one function but supports many clinical functions. One of the goals of the Pathway in the scheduling/administrative tasks related to telehealth visits is that the process is also "invisible" to both the provider and Veteran patient (see Workload Capture for specific guidelines related to the offset of time for the provider and patient).

Depending on whether or not the Clinical Video Telehealth encounter is within a facility (VAMC to one of its own CBOCs) or is an interfacility visit, different staff will have responsibility for completing the scheduling steps. Since VistA scheduling system is not capable of scheduling resources beyond the clinic, patient and provider, an external system, Microsoft Share Point, is one method that can be employed in order to schedule the other necessary resources, rooms, technologies, etc. The Office of

Telehealth Services is working with OIT to assess options for a national scheduling solution for Clinical Video Telehealth.

The Following Links Will Direct You to Related Resources

Clinical Video Telehealth Clinical Pathway
Tool and process to identify steps and process for scheduling Clinic Based Telehealth encounters.

VHA Consult Policy VHA Directive 2008-056
A guidance tool to provide steps and processes for clinic consultation

Telehealth Service Agreement
Essential document for each telehealth application to identify telehealth variables. To be used in conjunction with the Credentialing and Privileging MOU

CBT Clinical Pathway Telehealth
Tool and process to identify steps and process for scheduling Clinic Based Telehealth encounters

Figure 3 Clinical Video Telehealth Clinical Pathway Workflow

Referring provider writes clinical consult for specialty care indicating the veteran consents to telehealth visit.

Specialist determines that telehealth visit is indicated.

YES

NO

Arrange face-to-face visit.

Telehealth Team Consulted

Specialist or specialty office initiates telehealth consult, which alerts all involved telehealth teams

1. To notify of need for telehealth services for the patient and

2. Possible need to support telehealth services for provider

telehealth consult provides for communication and documentation of scheduling efforts and results among all

Scheduling & Prep

According to telehealth Service Agreement and documented scheduling information in telehealth consult components, the PRO and PAT appointments are scheduled and rooms/ equipment booked in SharePoint.

Clinical Services & Consult Completed

- telehealth consultation visit takes place.

- Progress note written and provider encounter closed in CPRS, closing clinical consult.

- Patient encounter closed/ coded per telehealth Service Agreement.

- Closure of consult sends CPRS alert to consult initiator, indicating that results are available in VistaWeb Consult Results for review.

Store and Forward Telehealth

Scheduling is not as critical with Store-and-Forward Telehealth. Store-and-Forward Telehealth is asynchronous and usually has dedicated staff, resources, rooms and providers and allows for a less complex scheduling system. A Store-and-Forward Telehealth encounter usually follows an in-person visit from a provider. A consult request is either placed by the initiating provider to have the Telehealth Clinical Technician take pictures of body parts in question or the patient has a screening reminder that must be addressed (i.e. diabetic eye reminder).

Scheduling Store-and-Forward Telehealth clinic involves:

- The patient (VistA)

- The telehealth Imager (VistA)

- Technology for image acquisition (i.e. Teleretinal or teledermatology camera)

- Telereader (if required)

Figure 4. illustrates the clinical workflow for teleretinal imaging. The initial surveillance consult is initiated for the diabetic patient, either by the primary care provider or the imaging technician. The patient arrives as part of an associated visit or as a separate retinal screening visit. Images are acquired and appropriately demonstrated to the patient at the imaging workstation. Images are sent via the DICOM gateway to the VistA server, where they are accessed at a remote site by in independent licensed provider certified to review the study. The resulted study is then available to the imager or primary care provider, who acts on the report to appropriately appoint the patient for future follow-up.

As of this publication date, a national, standardized teledermatology pathway has not been established by The Office of Telehealth Services. Widespread deployment of the newly developed DICOM patch 106 in concert with the appointment of a national Teledermatology Lead are in process and once completed, a national, uniform program will be developed.

The Following Links Will Direct You to Related Resources

Store&Forward Technology and Installation Protocol
Policy and procedures to identify steps and process for training and protocol

VHA Consult Policy VHA Directive 2008-056
A guidance tool to provide steps and processes for clinic consultation

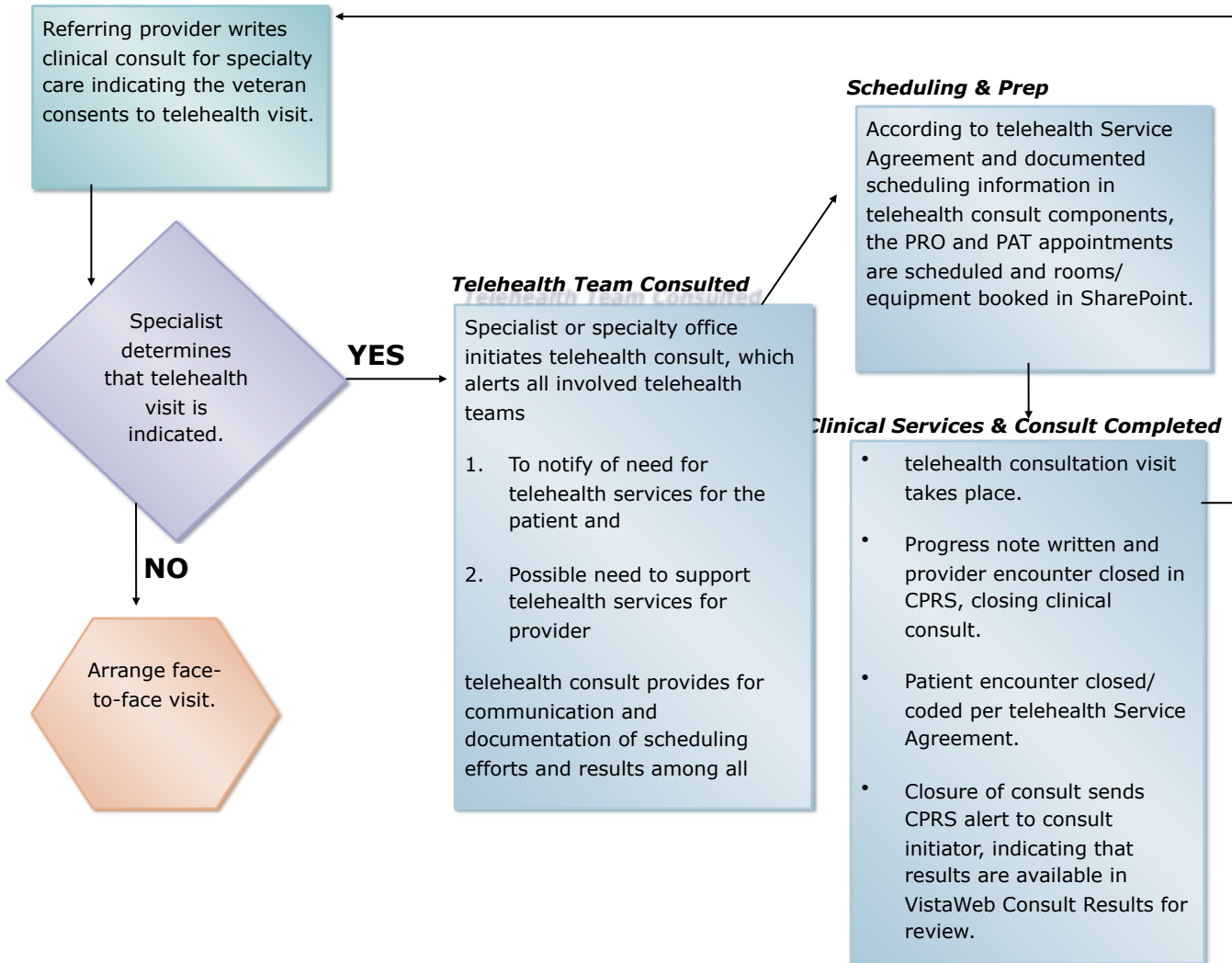**Figure 4 Store-and-Forward Clinical Workflow**

Acquisition Site

Consult for Teleretinal Imaging is initiated by the Imager or Primary Care **Acquisition site. Appointment scheduled.**

Patient arrives at the imaging location same day or different day. **Patient provides consent for image capture.**

Certified Imager reviews and completes the consult by documenting patient responses to the template. Questionnaire, health factor data is captured. Health information & education is provided and charted..

The Imager orders an Image consult and signs by policy. The consult incorporates all data acquired from the request consult and associated consult results.

Patient appointment is complete. **Results within 2 weeks.**

Before patient leaves, images are reviewed in Vista Imaging Display (Correct pt & number of images).

Imager saves images.

Images attaches to the "Pending" Teleretinal Imaging consult and that completes the image capture process.

Patient is prepared for image capture. Images are captured. Patient is assisted as necessary.

Acquisition site provider follows up on consult recommendations.

Remote Reader Site

Credentialed reading Specialist logons on to TeleReader selects a study from the UnRead list.

CPRS and VistA Imaging Display open displaying textual and image data for review.

Reader evaluated images in VistA Imaging Display. Results the associated consult in CPRS.

CHAPTER 10: Clinic Based Telehealth Documentation and Informed Consent

Documentation

As with any medical visit, intervention or encounter, the clinical documentation of the event is very important. The creation of encounter forms, progress notes and consult templates for telehealth clinic visits are other essentials. Some guidelines include:

- Using template notes to improve clinical efficiency and serve as a guideline for appropriate health information collection.

- Encounter forms will include the location title for all visits (e.g. Dermatology telehealth, Surgery telehealth, SCI telehealth, TBI telehealth etc.) and must have the appropriate telehealth encounter codes and modifiers.

- Routine visits that are not consult-specific visits will be closed with a progress note (e.g. Surgical telehealth Progress Note, Primary Care telehealth Progress Note, etc.)

- Progress note templates should include health factors that integrate with clinical reminders, pertinent physical exam information and numeric data, and include any patient education completed.

- Quality assurance process must be in place to ensure that Store and Forward images pass appropriately through the DICOM gateway and appear in VistA for the patient being examined.

- Procedures apart from image acquisition, e.g., testing visual acuity or pupil dilation, must be appropriately documented. Safety warning for pupil dilation must be provided to the patient.

- The consult template includes reasons for the specialty consult, diagnosis codes for specialty care, information regarding patient consent and/or patient suitability for Clinic Based Telehealth interactions and other necessary information for the specialist.

- Clinic-based teleconsultation or routine medical follow up encounters (Clinical Video Telehealth and Store and Forward) are either requested by remote facility providers using Interfacility Consults (IFC) or just scheduled by hub site providers as a part of an ongoing provider/patient medical care plan.

- IFCs will be closed with a consult report title consistent with specific types of service provided and standardized naming conventions.

- It is important to distinguish between "teleconsult" vs. "telemed" in the clinic and/or hospital location title. Specifically, "Teleconsult" can refer to a one-time consultation through a telehealth encounter, whereas "Telemed" is clearly a telemedicine encounter providing ongoing care.

- Work with your local CPRS Clinical Applications Coordinator (CAC) to set up the IFCs. Your local CPRS CAC is the best person to facilitate correspondence with remote/referral site CACs to properly set up the IFCs and to facilitate any future changes to the IFCs.

Procedures at both the patient and provider sites include:

- Scheduling a telehealth clinic appointment (with the appropriate primary and secondary stop codes)

- Patient check in

- Providers complete progress notes and encounter forms

- Patient check out

Provider (distant) sites may choose to set up Telehealth IFC request forms in CPRS. This process is more complicated than the Intrafacility consults. This takes coordination between facilities and using different VISTA structures. This process is discussed in detail in the clinical pathway document. Key components include the generation of the consult and coordinating the patient visit using technology, room space and assuring the patient side has all of the components necessary for the patient encounter including the Telepresenter. One of the key steps to assure is when the distant site provider writes a progress note/report and links it to the IFC, the originating patient site will also have a record of the progress note/report in the CPRS system (without having to view the progress note under the "Remote View" option in CPRS).

This is created because the provider has access to the patient side VistA through the credentialing and privileging process, allowing the provider to document the visit, write orders and manage the care of the Veteran. The credentialing and privileging process has been streamlined through the Memorandum of Understanding between facilities (See Credentialing and Privileging Section). This process if further explained through the following links at length to support the establishment of the MOUs and ultimately provide care to patients.

Patient Informed Consent
VHA and The Office of Telehealth Services are committed to providing a health care environment that supports respect for patients and protects their right to autonomous, informed participation in health care decisions. These essential elements of quality health care are noted below and establish a process for informing patients about telehealth care options and obtaining their consent prior to treatment. This Veterans Health Administration (VHA) Handbook clarifies and updates VHA's national policy on informed consent. It discusses the goals, scope and key concepts related to patients' informed consent for clinical treatments and procedures and the related responsibilities of VHA staff (see VHA Handbook 1200.05 and VHA Handbook 1058.03 for VHA policy on informed consent research.). Highlights include:

- The patient must be fully informed of the risks and benefits of telehealth services and procedures.

- The patient may give verbal permission as consent to telehealth service prior to the initiation of the telehealth clinic sessions and is documented in the encounter note.

- The patient has the right to refuse telehealth services.

- Verbal informed consent for telehealth services need only to be obtained at the commencement of each treatment and /or care program and is not required for each individual telehealth session.

- If permanent video or photographic recording is used during the telehealth session then VA form 10-3203, Consent for Use of a Picture or Voice, must be used and written consent obtained from the patient.

- In the event that the telehealth session is part of a research study, then written consent must also be obtained per VHA research guidelines.

The Following Links Will Direct You to Related Resources

VHA Consult Policy VHA Directive 2008-056
A guidance tool to provide steps and processes for clinic consultation.

VHA Handbook 1004.10 Informed Consent and Procedures
This Handbook discusses the goals, scopeand key concepts related to patients' informed consent for clinical treatments and procedures and the related responsibilities of VHA staff (see VHA Handbook 1200.5 and Handbook 1058.03 for VHA policy on informed consent for research.).

CHAPTER 11: Workload Capture and Data Management

In order to monitor clinical activity and to undertake routine outcome measurements that ensure clinical quality, it is critical that all activity for telehealth be coded correctly. Telehealth workload is captured in outpatient encounters, as is all other outpatient workload in the VHA. Specific coding is necessary to capture the workload done in the various patient and provider side scenarios and to acknowledge that it was accomplished via telehealth. It is important to note, that 1) in Store-and-Forward Telehealth when the acquisition and reading sites are located on the same campus, or 2) in Clinical Video Telehealth the patient and provider sites are located on the same campus, DSS does not identify the activity as telehealth.

The coding for Clinical Video Telehealth and Store-and-Forward Telehealth is different, but they both follow a similar model. General rules include:

* The patient and provider side of the encounter must have the same primary code.

* The secondary Credit Stop for Clinic Based Telehealth is determined by the the location of the patient and provider as well as indicating whether its Clinical Video Telehealth or Store-and-Forward Telehealth.

It is important to assure that Clinical Video Telehealth isn't coded as Store-and-Forward Telehealth and vice versa. Clinical Video Telehealth is simultaneous and the patient encounter and provider encounter should occur on the same day and have the same primary code. In Store-and-Forward Telehealth, the patient and the provider are separated by both distance and time and therefore the patient and provider encounters will normally be on different days. The business rules for including Clinical Video Telehealth workload in VERA patient classifications stipulate that Clinical Video Telehealth encounters that should be paired must occur on the same day.

Illustration of the different locations that the patient and the provider can be located is presented below in Figure 5. The coding is developed to capture the different types of locations of the providers and patients listed below. The Centers for Medicare & Medicaid Services (CMS) use different terminology for telehealth locations. The CMS refers to the Patient Site as the Originating Site (OS) and the Provider Site as the Distant Site (DS).

Currently (April 2011) coding is available for Clinical Video Telehealth in all of the scenarios in Figure 5. Coding for Store-and-Forward Telehealth is available in scenarios 1 through 2. In October FY 2012 codes will be available for Store-and-Forward Telehealth occurring in the 3rd scenario. Detailed guidance on how to set these clinics up for Clinical Video Telehealth and Store-and-Forward Telehealth is presented in the Clinic Based Telehealth coding manual. It is critical to follow these guidelines in setting up clinics for VAMC telehealth programs. This ensures that the facility receives accurate workload credit and assists National and VISN analysis in evaluating outcomes and financial impact of this practice.

Specific clinic locations/titles need to be set up prior to the implementation of the telehealth visits. Staff at both the provider side and patient side of the encounters need to be informed of the correct clinic location/title that they need to use for the scenarios in Figure 5. When staff select a clinic location/title in CPRS, they cannot see the underlying stop codes that are connected. Therefore, the names of the clinic location/title need to be as informative and concise to assist in the correct

selection. Frequently, the full clinic location/title is not fully visible when the provider is trying to make a selection. It is important that the critical components of the title be visible in the screen that the provider initially sees. A written handout of the clinic titles that are available should be provided to that staff member and what they should be used for is helpful. New or relief staff should also be instructed on the clinic location/title they should be using. There have been occasions where new staff continue to use the clinic locations that they had in their previous position for documentation which will cause coding and workload capture errors.

For new Clinic Based Telehealth programs involving multiple VA facilities, there may be administrators who have valid concerns that workload credit is appropriately allocated for the patient side (originating site) vs. provider side (distant site) for telehealth encounters. It is important to involve a local Health Information Management Service (HIMS) and Decision Support System (DSS) contact to disseminate and provide advice on changes in telehealth coding guidelines.
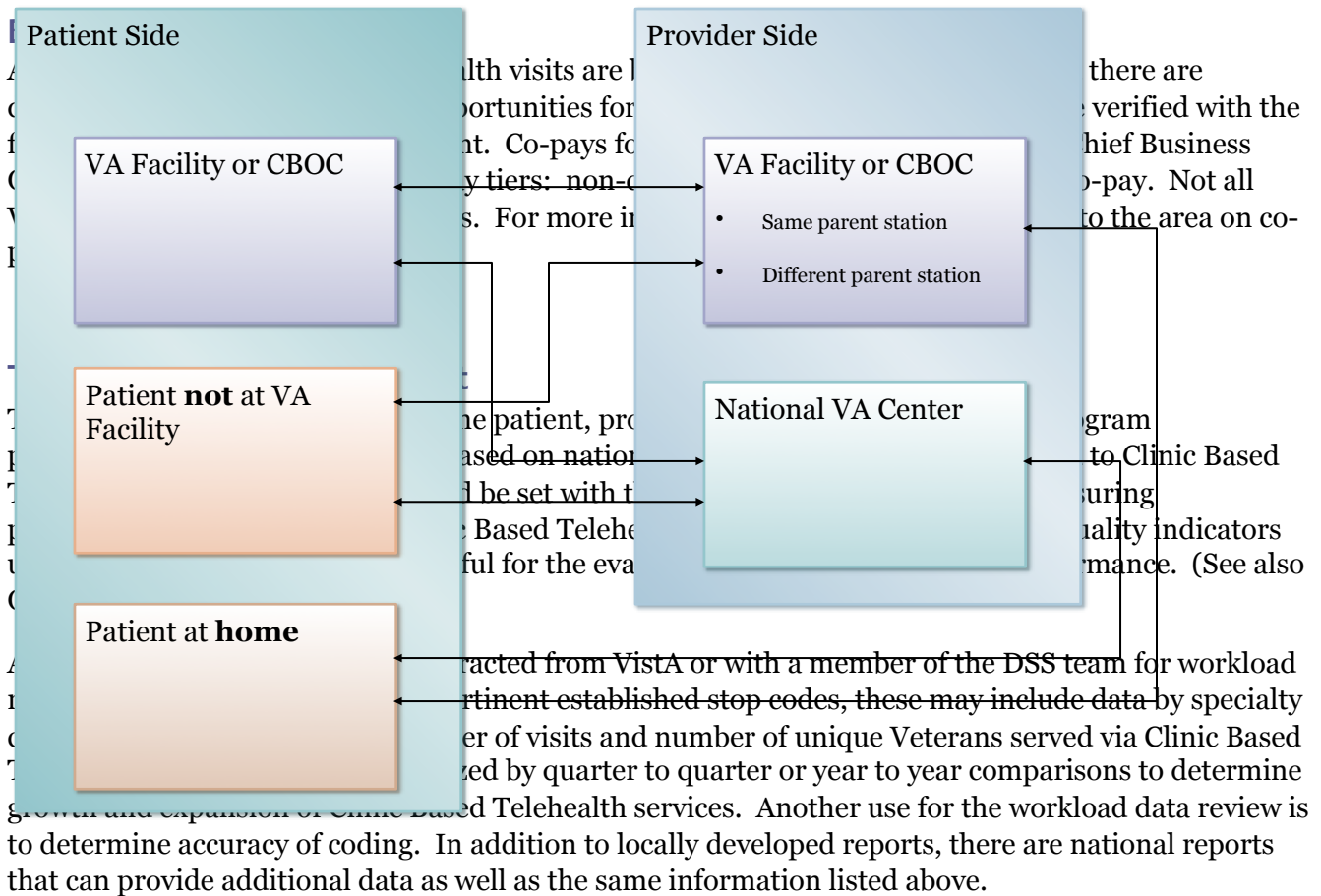
Scenario 1

Scenario 3

Scenario 2

In Development

In Development

Scenario 4

Figure 5 Coding Between Patient and Provider Locations

Figure 5 Coding Between Patient and Provider Locations

Patient Side — VA Facility or CBOC; Patient **not** at VA Facility; Patient at **home**

Provider Side — VA Facility or CBOC (• Same parent station • Different parent station); National VA Center

...lth visits are ... there are ...opportunities for ... verified with the ... portunities ...nt. Co-pays fo... hief Business ...y tiers: non-... -pay. Not all ...s. For more i... to the area on co-...

...he patient, pro... gram ...ased on natio... to Clinic Based ...l be set with t... uring ... Based Teleh... uality indicators ...ful for the eva... mance. (See also ...

...racted from VistA or with a member of the DSS team for workload ...rtinent established stop codes, these may include data by specialty ...er of visits and number of unique Veterans served via Clinic Based ...zed by quarter to quarter or year to year comparisons to determine growth and expansion of Clinic Based Telehealth services. Another use for the workload data review is to determine accuracy of coding. In addition to locally developed reports, there are national reports that can provide additional data as well as the same information listed above.

Telehealth Workload Data Cube

The Office of Telehealth Services, in collaboration with the VHA Support Service Center (VSSC), has developed a national telehealth data cube for Clinic Based Telehealth activities that includes:

- An easily accessible view to track the progress towards workload targets.

- Workload capture at both the patient and the provider site with the ability to match patient encounters to provider encounters for a complete pair. Workload is available at VISN, Facility and CBOC levels.

- The ability to identify patient and provider side encounters that cross facilities or VISNs.

- Ability to identify coding errors that may thwart achievement of workload targets or inclusion in VERA patient classification.

- An easily accessible view to review the cilinic areas that are coding telehealth encounters.

- Identify the time between when the image is taken in Store and Forward Telehealth and when it is read.

- Ability to drill down to SSN level.

The VSSC Telehealth Cube has an associated [Cube Overview](#) document that provides additional information on each of the canned reports available as well as information on how to find out what additional education is available for cubes in general and education specific to the Telehealth Cube. The associated [Data Definitions](#) document provides information on:

1. Data sources and business rules of the cube.

2. Specific validation that has been done to assure the accuracy of the cube.

3. Guidance for users to do validation activities at their station or VISN level.

It is vitally important for VISNs and VAMCs to review their data and address any coding or data capture issues that may impede the capture of workload used for performance targets, VERA capture or quality management analysis.

The Following Links Will Direct You to Related Resources

[Allocation Resource Center (ARC) website](#)
The provides information on VERA

[Chief Business Office (CBO) Website](#)
Provides detailed information on co-pays.

[Decision Support System (DSS) Website](#)
DSS – Information on DSS indentifiers, also called Stop Codes

[VHA Support Service Center (VSSC) Website](#)
VHA Support Service Center Telehealth Data Cube provides reports for Clinical Video Telehealth and Store-and-Forward Telehealth.

CHAPTER 12: Telehealth Technology

Technology

The purpose of this section is to explain how Clinic Based Telehealth and Store-and-Forward Telehealth Technologies and technical support pathways are a collaboration between the Telehealth Program, Biomedical Engineering Departments and the Office of Information & Technology (OI&T). The Technology and Pathway section defines/outlines technical expertise and how the technology, support teams and clinical staff interact to provide telehealth technical support and state of the art technology to the clinical users.

The scope of this section is to provide:

- The role and functions of Clinical Enterprise Videoconferencing Network (CEVN).

- The role and functions of TeleReader and VistA Imaging.

- An overview of the processes.

- An outline how technical equipment is selected and a list of technology resources.

- How clinical applications are approved.

- How acquisitions are conducted.

- How warranties are generated and monitored.

- Deployment of technology.

- Cleaning guidelines.

- Help desk service support are rendered in support of telehealth programs.

- CVT and SFT technology activities.

There are a variety of technologies currently available for use in Clinic Based Telehealth applications. These include various Coder-Decoders (codecs), cameras and peripheral devices. Standardization of technology is important for multiple reasons including connectivity, warranty and maximization of use. The VISN Telehealth Technical Advisory Committee will determine a standard system configuration specific to clinical applications. At the end of this chapter are several resource links to help you in your selection of technology and clinical technical support.

Clinical Enterprise Videoconferencing Network (CEVN) for CVT

VHA provides health care services to 5.6 million Veteran patients per year. Providing patients with access to care, especially specialist care in rural and remote locations is a challenge. Established in 2009, the VHA Clinical Enterprise Videoconferencing Network (CEVN) represents the clinical component of the larger Enterprise Video Teleconferencing Network (EVTN). The CEVN provides telecommunications capability and clinical videoconferencing technologies for telehealth that are

interoperable in a manner that is secure, reliable, of sufficient quality, cost-effective and readily usable by staff.

CEVN builds on and incorporates VA's first national clinical videoconferencing network: the Polytrauma Telehealth Network (PTN). The scope of the CEVN encompasses the design and implementation of a robust network that uses VA's telecommunications backbone for clinical videoconferencing within a VISN and between VISNs; with the aim to enable national clinical videoconferencing as it is expanded. The CEVN includes all the appropriate clinical, technological, business/managerial, risk management/disaster recovery and training requirements.

TeleReader and VistA Imaging Applications for SFT

The clinical practice model for diabetic retinopathy surveillance screening incorporates the use of the VistA system for ordering, scheduling, consult creation, (local and inter-facility), reminder dialogs for obtaining health factors, remote data view, as well as the day-to-day operations of patient healthcare. In parallel to the VistA system, VistA Imaging, an FDA sanctioned medical device is the clinical imaging interface designed and developed by VHA to incorporate image and document data and attach said data to the Veteran's electronic medical record.

VistA Imaging globally provides specific applications that are used for SFT. Those applications are: TeleReader, VistA Imaging Display and VistA Imaging Capture. The combined use of VistA and VistA imaging provides comprehensive electronic support for the Diabetic Teleretinal Surveillance screening program and soon the teledermatology program.

The basic model whereby care is delivered is that patients are assessed and digital images acquired in an eye or primary care clinic by certified imaging staff. The resulting image studies are available for viewing either locally, or remotely using Remote Image View by eye care professionals thru the TeleReader and VistA Imaging Display applications. The eye care specialist evaluates the image data and reports on that data thru the use of the consult template.

The TeleReader application was designed to work with the consult request tracking package in VistA and as a result the TeleReader has an unlimited scope of use. Building on the successful use of TeleReader for the Teleretinal screening program, the TeleReader application is being used for the national rollout of the teledermatology program which is currently in the pilot phase. The TeleReader application displays a list of all sites the specialist has been assigned to read for, as well as a list of image studies from those assigned sites. In addition to the listing of unread studies, the application will also display a list of studies that have been completed for up to the past 90 days.

Pilot teledermatology programs were instituted at several VA sites and affiliated CBOC centers. VA has updated the VistA Imaging Capture client to incorporate the capture of dermatology images using an information standard of practice that ensures the interoperability of capture, storage, retrieval and workflow. The development and release of the software patch (known as Mag *3_0P106), or P106 allows certified imagers in dermatology at an acquisition site the capability to capture dermatological images based on consult requests from either Dermatology or Primary Care. A uniqueness of the TeleReader application is that a specialist can "lock" a study which gives control of the consult to that specific specialist while still allowing other specialists to view the study and consult, in addition, when a study is selected, the computerized patient record system (CPRS) and VistA Imaging Display open automatically providing easy access to view the consult and image data.

CVT Technologies: Video TeleConferencing (VTC) Systems

The basic components of a Clinical Video Telehealth system are the same for both the provider site and patient site. On the sending side, a video camera is connected to a system - known as a CODEC - which "compresses" the video signal and sends it over some type of telecommunications link to the receiving side. A microphone is used to pick up sound, which is also compressed for sending over the link.

On the receiving side, the signal is decompressed; a picture is displayed on a video monitor and sound is amplified by speakers. A camera and microphone also pick up video and sound at the receiving side. The system compresses and sends the signal back to the sending side.

Both sides can see and hear each other "in synchronous." In a synchronous exchange, there is usually a short delay caused by the compression/decompression process and the time it takes to transmit the signal.

Video TeleConferincing (VTC) requires high capacity connections (high bandwidth) because of the volume of data that is exchanged between the two ends. These connections can be over special digital telephone lines known as "ISDN," or over high-speed data network connections, often "IP" networks. Connections using regular telephone lines and analog modems are inadequate for synchronous Video TeleConferencing, making "IP" the more practical type of connection used in remote areas.

Video TeleConferincing is especially useful where moving images contribute to the gathering of information by the consultant. Clincal Video Telehealth systems are often equipped with uniquely-designed diagnostic peripherals which have an integrated video pickup. Common clinical peripherals include otoscopes, general examination cameras and dermascopes.

Clincal Video Telehealth systems are also commonly equipped with [document cameras](#) so that x-rays, cardiology traces and other static information can be incorporated into the synchronous interaction.

Synchronous Clincal Video Telehealth can be used for nearly any consultation, but is especially useful for:

- General medicine and several specialty care areas.

- Mental Health.

- Situations involving barriers to access, such as distance, geography, climate/weather, cost, etc.

- Situations where motion contributes to diagnosis and/or treatment.

- Situations where it enables or improves effective patient-provider communication.

Synchronous Video TeleConferencing is a common method of communication in business and government settings. Video TeleConferencing hardware and software have become standardized and is much less expensive than was previously the case. Telehealth applications of Video TeleConferencing are generally based on the same standard Video TeleConferencing equipment and software as is used in business and government, with some adaptation. The adaptations are primarily in the area of accessories.

A Clincal Video Telehealth system has six major components and compatible Clinical Video Telehealth systems are required on both ends of the video call:

- Video Teleconferencing CODEC

- Video Camera

- Video Monitor (1 or 2)

- Microphone

- Speakers

- Accessories (not shown)

1. CODEC

CODEC is short for Coder-Decoder. The CODEC is the heart of the Video TeleConferencing (VTC) system. It compresses the two-way audio and video streams so that they can be sent over the communications link. The CODEC also provides the means to connect all devices used in a Video Teleconferencing system, such as cameras, microphones and other system components.

While there are standards for communication between Video TeleConferencing systems, each CODEC uses different methods to perform its functions with varying outcomes. Each manufacturer also creates unique features and a distinct user interface to make its system attractive to potential users.

CODECs can be dedicated hardware "boxes" running proprietary software, or can be based on a personal computer (PC). Dedicated hardware CODECs are associated with more expensive, traditional Video TeleConferencing systems. PC-based systems are associated with lower cost, recent generation systems.

New models have blurred the lines between high-end and low-end systems. High quality dedicated Video TeleConferencing systems are now available in the same price range as PC-based systems. They are often known as "appliances" or "set-top boxes" because of their small size and "all-in-one" which are built into the monitorconstruction.

re 6 Examples of Codecs

2. Video   Camera

The video camera is specially designed for Video Teleconferencing applications. It offers pan (side to side) and tilt (up and down) controls so that the user can easily point the camera at the appropriate subject. It also offers control of the zoom for a wider or tighter angle of view. (Pan/Tilt/Zoom is often abbreviated P/T/Z.) The focus is automatically adjusted by the camera. Most systems provide connections for two or more video cameras, facilitating the addition of specialized diagnostic cameras.

Camera Control: Many Video TeleConferencing systems allow control of the camera on the far end of the connection. This is especially useful for group presentations and telehealth consultations as the

consultant has direct control over the view on the near end monitor. This far end camera control ensures that the consultant can frame the subject as needed, avoiding problems with the subject being "cut off". Far end camera control has become a standard feature on newer Video TeleConferencing systems, but may not be available on older systems or those incompatible with the camera control protocol

3. Video Monitor
Each endpoint of the Video TeleConferencing connection has at least one video monitor. Many systems allow connection of two monitors. Systems with a dedicated CODEC most often use a standard video monitor (such as would be used with a VCR). PC-based CODECs generally use a computer monitor, although some newer systems use one video monitor and one computer monitor (for data display).

4. Microphone
Each end has at least one microphone to pick up the sound for transmission to the far end.

5. Speakers
Speakers allow the user to hear the sound from the far end.

Figure 8 Example of an "Intern"

6. Accessories
Video TeleConferencing system accessories are available for virtually any specialized application. Some key accessories are used often in telehealth applications:

Document Cameras - used as a general purpose device to share documents, ECG's, x-rays, graphs and other materials. The document camera must be equipped with an integrated light box for x-rays and other film-based information.   In this case the fax machine is able to be replaced.

Diagnostic peripherals - many common diagnostic scopes and other devices have been adapted for use with Video TeleConferencing equipment. They generally include a light source and a video pickup. These peripherals will be covered in detail later in this section. Some examples might include a dermascope or an ENT scope.

Digital Stethoscope - to perform auscultation over distance.

Digital Still Camera - used to capture still images.

Fax machine - a fax machine is often the least expensive and simplest way to transmit hard copy information such as charts and printed test reports.(see document camera)

Purpose-specific software - PC-based systems have the advantage of being able to run software programs directly. Dedicated hardware-based videoconference systems can usually transmit the display from a PC connected to them, so that software programs can be used during the telehealth visit.

Digital Video Disc (DVD) Recorder / Videocassette recorder (VCR) – Recorders can be useful for documenting a patient encounter or for facilitating an asynchronous consultation.

SFT Technologies: Teleretinal Imaging (TRI) Systems

The National Teleretinal Imaging Screening program is designed to access patients who have no documented record of periodic eye examinations and may be at risk of vision loss. Appropriately, TRI cameras are suggested to be located in primary care areas; however, imagers have skills that are particularly unique to the various aspects of eye care and, for this reason, imagers are required to know other aspects of eye clinic function in addition to teleretinal imaging. It is recommended that imagers are supervised clinically by the eye clinical champion, lead imager, or teleretinal master preceptor regardless of camera location. The location of a camera should ideally be in a separate division from the location of the reading center. The most important factor in the location of the program should be the needs of the patient population at the facility.

- A TRI system has two major components, located at either the image acquisition (patient) site or the reading site:

- Image acquisition – nonmydriatic fundus camera.

- Image review - reading workstation with diagnostic quality display monitor.

1. Image Acquisition

Acquisition systems (cameras) are typically designed as non-mydriatic fundus cameras that are DICOM compliant and VistA compatible. Systems must have the appropriate DICOM software installed so that imaging studies can seamlessly be transferred electronically from the local workstation to the facility's VistA Imaging server. Acquisition of these software programs should be coordinated with the information technology (IT) staff at both the imaging and reading site as well as the local Clinical Engineering Team. Since these acquisition workstations are medical devices, the Clinical Engineering Team should be the managers of the implementation and maintenance process. Adding a Telereader Acquisition Site is done by IT support staff are who are responsible for the installation and configuration of the software. The installation of the software requires a special VistA security keys. Refer to the following link for additional information on the Telereader the setup guide.

Figure 9 Examples of Non-Mydriactic Fundus Cameras

2. Image Review

Reading stations for all Store-and-Forward Telehealth programs must meet minimum requirements for resolution and monitor size. The standard reading monitor is a 21 inch minimum Liquid Crystal Diode (LCD) system with 1280 x 768 screen resolution. Reading stations should be integrated with the local facility computer network, since in addition to reviewing imaging studies, readers will be entering notes and reporting findings in CPRS. The reader will therefore require access to remote data when needed. Reading systems may also be set up with dual, side by side monitors, with one computer station used for the purpose of toggling more quickly between studies. All available upgrades and patches to VistA Imaging must be pushed out to reading workstations when applicable. Acquisition of these programs should be coordinated with the IT staff at both the reading and image acquisition site and at the Silver Springs VistA Imaging development group as needed.

SFT Technologies: The Teledermatology System

Image Acquisition

Figure 10 Example of a Handheld Digital Camera for Teledermatology

Various camera models with varying features and capabilities are available from several manufacturers. Constantly changing technology rapidly renders any effort to specify a particular brand and model of camera obsolete. Therefore, minimum features and specifications are discussed here. High-resolution photographic images should be taken with a digital camera having a minimum resolution of 1024 x 768 pixels (J. Am. Acad. Dermatol. 1999; 41:749-56 and www.aad.org/forms/policies/Uploads/PS/PS-Telemedicine%206-15-07.pdf.)

Much higher resolution point-and-shoot digital cameras can now be purchased at an affordable price (less than $1000), but these resolutions are often not necessary, and are associated with longer transfer times and increased storage requirements. In general, a camera with at least megapixels should offer enough flexibility in resolution to meet most clinical needs. Other important features of the camera:

- Relatively easy to operate for an average person;

- Macro mode allowing optical (not just digital) close-up view of skin;

- Control of the flash or no flash; and

- Method of image storage (e.g., flash card, other).

2. Image review

Image review standards and requirements for teledermatology are concordant with those of teleretinal imaging and other store and forward disciplines.

Telehealth Technical Advisory Committee (TTAC)

The TTAC is a VISN level committee that is chartered by the VISN Telehealth Council and meets monthly. The Telehealth Technical Advisory Comittee provides an interactive forum for SLA stakeholders to identify issues related to telehealth technologies, communicate in order to resolve outstanding issues, recommend policy with regard to telehealth technologies, develop and implement operational procedures related to telehealth technical supportand set telehealth technology standards. Telehealth Technical Advisory Committee membership is comprised of staff from all stations with varied backgrounds including technical, clinical, engineering and clerical / support disciplines. Each station will have a Telehealth Program, Biomed & OI&T representative serving on the Telehealth Technical Advisory Committee.

Technical Pathways and Infrastructure

A Technical Support Pathway is extremely important to ensure that adequate planning and technical supports are in place and made available in the event technical difficulties arise while conducting telehealth clinics. Clinical Video Telehealth encounters are synchronous events that in most cases require immediate action from technical support staff in order to avoid patient encounter interruptions or cancellations due to technical difficulties.

Technical support can be provided by VISN Telehealth Technical Service Desk staff. All inquiries and/or requests for help will be entered into the VISN Telehealth Trouble Ticket Tracking System. These tickets will be assigned appropriately, tracked to completion, resolutions posted and closed. The Telehealth Technical Service Desk staff will coordinate and triage technical support issues related to the level of support. The facility Biomed departments will provide a level of support related to equipment deployment, repair, maintenance and replacement.

Technology Procurement / Purchasing

After a list has been developed for all the necessary technical equipment and peripheral devices needed for the telehealth program, equipment procurement, the following items should be considered:

- Identification of the correct funding appropriation, (IT vs. Medical Services), which can be used to purchase telehealth technologies continues to present challenges to the field. Current VA guidelines state 'Telemedicine modalities exclude videoconferencing equipment unless the videoconferencing equipment is exclusively used for patient care communication synchronously' Therefore, Clinical Video Telehealth videoconferencing units are 'non-IT' and can be purchased with funds from the Medical Services appropriation and the aforementioned contracting vehicles are designed with that purpose considered, that planners must consult closely with OI&T, The Office of Telehealth Services and VISN Clinical Video Telehealth and Store-and-Forward Telehealth leads throughout this process.

- VA's Acquisition & Materiel Management Service (AMMS) staff assigned to procure equipment for a multi-site telehealth program may be at a different location than the coordinator assigned to complete all the paperwork needed to procure the equipment for all sites.

- The need to be aware that the acquisitions competition process is no longer necessary when using the national BPA for purchasing equipment, eliminating delays in the purchasing

process. This may be important information to know when a telehealth program needs to buy multiple quantities of a smaller peripheral device.

The VISN Telehealth Coordinator can assist with the selection of the telehealth equipment and procurement process. The Office of Telehealth Services, in cooperation with VA logistics and contracting services and the VISN Clinical Video Telehealth and Store-and-Forward Telehealth leads, has developed contract vehicles including Blanket Purchase Agreements (BPAs) (see link below) to facilitate the technology acquisition process. The Office of Telehealth Services strives to update these contracting vehicles to ensure that the most up to date technologies are available to the field. In short, it is highly recommended that telehealth planners and Facility Telehealth Coordinator's (FTC) coordinate all acquisition and contracting processes with The Office of Telehealth Services and VISN Telehealth Program Managers/Leads.

Planning, Deployment and Inventory

In order to provide adequate technical support to end users a comprehensive, accurate inventory of technology assets will be in place and regularly maintained. The Telehealth Program will complete and maintain a database of existing telehealth technologies and endpoints. The Telehealth Program will report anticipated new endpoints to the VISN telehealth Technical Advisory Committee on a monthly basis. Data will include Model, Make, Serial Number, IP Address (if applicable), Point of Contact, Site Information, EE number and Service Maintenance Contract Information.

Before purchasing new equipment, a review of existing telehealth and administrative equipment used by other programs should be completed to determine if they are available and can be used for multi-purpose endpoints and a decision should be made on which peripheral accessories will be needed, if any. All CVT systems must have the following components:

- Hardware

    o Input devices to capture sound and picture

        ▪ Cameras and microphones

    o Output devices to generate sounds and pictures

        ▪ Monitors and speakers

    o Peripheral equipment, if appropriate

    o Transmission media to carry the audio and video signals

- Software

    o Capable of high level computing functions

    o To convert signals from analog to digital

    o To filter noise and clean-up both audio and video signals

    o To code and decode data (codec)

    o To synchronize audio and video components

Cleaning Equipment

All telehealth technology and equipment must have an established standard operating procedure for cleaning equipment being utilized in telehealth areas of the VAMC, mobile telehealth clinic, outreach clinics and CBOCs. All cleaning will be conducted per the manufacturer's recommendation.

Information Security

The facility Information Security Officer (ISO) should be involved in the planning stages to make sure the proposed telehealth program is HIPPA compliant. This is also the contact for staff to receive access to other facilities if needed.

OIT Informatics Support and Biomedical Engineering Support

It is imperative that OI&T and Biomedical Engineering at both VISN and local levels are involved in the planning of any new telehealth programs from the beginning.   The VISN and local CIO's support is critical to the success of telehealth initiatives. Develop a working relationship with these staff. They will know current problems, future plans for the system and the bandwidth available. This information will minimize the many technical challenges that the clinic coordinators already face.

Compliance

All equipment and any peripheral device used in Clinic Based Telehealth(CBT) programs must meet and be maintained to meet VHA and regulatory standards for patient safety, information security and infection control (VHA Directives, HIPPA and The Joint Commission).

CBT Technology Advisory Group
This tool assist in establishing the purpose, structure and responsibilities of the group.

End User Support/ SLA (National and VISN)
This document provides a better understanding of relevant issues and clarifies responsibilities of each stakeholder to facilitate delivery of telehealth services by; providing the technical support required to design, deployand operate telehealth programs and activities

Buyers Purchase Agreement
This document is provided as a general guide for ordering video equipment and maintenance.

Clinical Enterprise Videoconferencing Network (CEVN)
This is a document describing the function of the system and its capabilities.

Technology Guide
This is a guide to help you in your planning, selection and installation of your equipment.

The Following Links Will Direct You to Related Resources

CHAPTER 13: Information Outreach

As a basic principle, information outreach is about means of communication. Information Outreach strategies, though varied, are all aimed at convincing people to try out or continue using particular products or services. Business managers should carefully plan their marketing strategies and performance to keep their market presence strong, acceptable to customers and to obtain the desirable buy-in to an innovative product.

Information Outreach is based on the importance of customers to a business. An important principle is to ensure that all policies and activities are directed toward satisfying customer needs. A marketing strategy identifies customer groups that you will be working with and whom your business will better serve. Successful marketing requires timely and relevant market information to be disseminated to all possible areas. Setting a marketing strategy will help you to focus on the target markets that Clinic Based Telehealth can serve best.

Every outreach program contains these key components:

- Description of Products or Services

- Target Customers

- Information Promotion & Dissemination

- Performance Evaluation

Promoting the telehealth program is not different and should begin during the planning phase and should include internal and external stakeholders. Sharing of information early on will also encourage buy-in from healthcare providers and other clinicians whose collaboration will be vital to the success of the program.

Describing Telehealth Services

As part of the dissemination effort, it is important to define and describe telehealth for people to have a clear understanding of what is clinical video telehealth, the scope of practice and its application. This will be the educational component of the outreach strategy. Even though telehealth have been practiced in VHA for a decade now, there is a need for increased penetration into service delivery . This education needs to be customized to patients, providers, telehealth coordinators and executive leadership.

Customers

Clinic Based Telehealth mainly serves the Veteran and the provider because it facilitates the provision and delivery of care, but this clinical practice involves several others. Marketing strategies need to be designed to consider:

Target Patients - Working to identify patient care issues – distance, no-shows, care-giver burn-out – For the application of any new program, appropriate steps must be taken to ensure that the

intended use of telehealth will receive care that will be enhanced by the telehealth related process. Identification of patients might include recognition of a diagnosis or issue that may benefit from an alternative form of healthcare. Preparation will include utilizing a checklist that will support the admission of the patient into a particular modality for help to identify patient physical and cognitive capabilities, diagnosis and history of admission or problems, and disease management issues. Both inclusion and exclusion criteria should be developed and utilized as a standard for providing care (see Clinical Protocols). Once standard criteria is organized and identified local Decision Support System (DSS) staff can be helpful in extracting information that may assist in populating new programs.

Collaboration - VA is collaborating with a number of organizations in developing telehealth related activities. For example Department of Defense and Indian Health Services have been working collaboratively on multiple VA telehealth initiatives for some time. Collaboratives may lead to stronger programs as the intellectual and physical capital of participating programs is leveraged and can be structured to more effectively meet the program goals.

Program Promotion

Training resource and program promotion strategies include advertising and direct customer interaction. Dissemination of information through multiple venues is essential because of the limited ability to spend on advertising. Some of the elements to use include but are not limited to:

- Direct mail with informative letters, flyers, brochures, etc.

- Video presentations. Different VISNs have developed video tapes with real success stories.

- The Office of Telehealth Services Intranet provides information that will assist you in your marketing.

- When marketing to leadership and business officers, share with them outcomes data, success stories from colleagues and the performance measures & monitors requirements set for Clinic Based Telehealth.

- Educational programs, literature and reports, technology fairs, luncheons or related events can be used to spread the word and build a base of support for the program.

- Press releases to the local media-newspapers, TV and radio stations should also be considered working through the local public affairs officer.

Evaluation

After implementing the marketing program, it is important to evaluate its performance. Every program should have performance standards to compare with actual results. At least quarterly, evaluate if you are moving forward with your plan. Check the following:

- Is your program doing all it can to be customer-oriented?

- Are your expectations and goals met?

- Are your customers satisfied?

- Are your customers, business partners and executive leadership well aware of Clinic Based Telehealth opportunities?

- Is everyone engaged in supporting Clinic Based Telehealth operation and growth?

The Following Links Will Direct You to Related Resources

Clinical Video Master Document Library is a resource for the application of telehealth in the VHA system.

 Store and Forward telehealth Patient Satisfaction
The survey is important so that you know what the Veteran thinks about the value of our store and forward telehealth programs. Their comments will help you learn how you can improve care to all Veterans. This survey is currently undergoing official approval and will be released soon with official guidance for its use.

CHAPTER 14: Staff Education and Training

Telehealth Training Centers and Telehealth Educational Opportunities

The Office of Telehealth Services has two national telehealth training centers that focus on Clinic Based Telehealth Training. Established in 2005, The Rocky Mountain Telehealth Training Center (RMTTC) and the Boston Telehealth Training Center (BTTC) provide training and consultation for Clinical Video Telehealth and Store and Forward programs involving establishing telehealth programs, the use of telehealth technologies with supportive peripheral devices and on how to provide care and consultation using telehealth between clinics and hospitals to other hospitals. The national telehealth training centers and VHA Employee Education System provide educational opportunities in a number of modalities. Independent learning experiences are available via:

- Web-based courses.

- Video available on demand on CDN.

- VAKN live and recorded satellite broadcasts.

- Local, regional and national conferences.

In addition, the Office of Telehealth Services telehealth training centers provide specific training activities via:

- Live videoconference and web-conference training sessions.

- Mentor/coach programs.

- Communities of Practice / collaborative learning groups and discussion boards.

- Telehealth laboratories to simulate the experience in the field.

Clinical Video Telehealth applications require the following training:

- How to operate videoconferencing equipment.

- How to connect peripheral devices for use with videoconferencing equipment.

- Telehealth operations, management for success.

- Telehealth operations, the Patient Encounter.

- Web Based Courses.

- Live Videoconference training and consultation.

- Live Meeting Training.

- Just in Time Training.

- Videos.

- Printed Resources.

- Satellite Broadcasts.

Store-and-Forward Telehealth Training includes both web-based and face-to-face training by a trained SFT Master Preceptor. The Master Preceptor program purpose is to provide competent clinic specific staff to be availableto provide training and expertise relate to the daily operations of a telehealth encounter.

Store-and-Forward Telehealth applications for teleretinal imaging require the following training:

- Ocular anatomy primer.

- Overview of diabetes and diabetic retinopathy.

- Common nondiabetic but related eye findings.

- Image acquisition techniques and clinical and technology processes using nonmydriatic retinal cameras.

- Image triage.

- Quality assurance for DICOM and image deletion.

- Overview of Conditions of Participation.

- Patient education.

- Telehealth operations, coding, encounters.

- Camera trouble shooting and maintenance.

- Electronic resources.

- Web Based courses.

The training for teledermatology is similar to that of teleretinal imaging, with both hands-on and an in-person component. However, a standardized curriculum has not yet been established but will evolve as the national program is implemented. The following training is required:

- Telehealth Core Courses (LMS).

- "An Introduction to Telehealth in VA" .

- "Telehealth Business Operations: Management for Success".

- Background dermatology.

- Review of Skin Anatomy and select skin pathology.

- Imaging.

- Consult pathway/imaging protocol/tedchniques.

- Uploading Telederm Images and Image Deletion.

- Quality assurance/Patient safety.

- Patient Education for Teledermatology.

Master Preceptor Program

The Boston Telehealth Training Center offers a Store-and-Forward Telehealth Master Preceptor Program to certify teleretinal and teledermatology imagers with enhanced experience to train imagers at the VISN level. Master Preceptors also serve as a resource for the National VA Store-and-Forward Telehealth programs and assist the VISN leads in developing and guiding the program within their network.

This is a competitive program and there is a rigorous application process. Additional information on the Store-and-Forward Telehealth Master Preceptor program can be found at the Master Preceptor site.

Staff Competencies

The competency of the staff refers not only to their usual clinical positions, but also to a level of competence in applying those skills in a telehealth setting. A minimum level of technical competence must be achieved by all staff: clinical, support and administrative. The technical competence of the IRM staff must also be extended to meet the operational and maintenance requirements of videoconferencing technologies, telehealth peripheral equipment and accompanying LAN, WAN and connectivity requirements (see human resources for further discussion, links and resources related to roles and competencies)

Each of these competencies can be met through completing web-based courses on Clinical Video Telehealth, as well as meeting criteria demonstrated to a trained observer.

Orientation

Each new or incoming staff member should meet the minimum standard of familiarity with the telehealth environment and technical operations before beginning to see patients. This contributes to the confidence of the patients that they are being cared for by knowledgeable staff, as well as the smooth and efficient operation of the clinic. This orientation should be repeated at least annually, or whenever new equipment is received in the clinic. All staff can complete this orientation at the same time with an experienced trainer and observer. Be sure that every staff member has a chance to practice the operation of the technology even if this isn't a regular part of their job function. This cross-training enables staff to cover when others are absent and, again, assure the patient of the quality of care being received. VISNs are to develop formal training plans. The following courses are highly recommended as a part of the plan. The course review frequency is determined by the VISN. The VHA Office of Telehealth Services, and the Rocky Mountain Telehealth Training Center have developed a training algorithm to assist the VISNs in developing their formal training plan. The courses include but not limited to:

- Introduction to Telehealth in VA.

- Telehealth Technology and Environment.

- Telehealth Operations, The Patient Encounter.

Education and Training of Staff

Training is the cornerstone of successful telehealth efforts. Perhaps the single greatest challenge when installing telehealth systems into the existing traditional clinical environment is assuring that clinicians are comfortable using the new   technologies and aware of the clinical and business aspects. Superior interpersonal skills are also required of all telehealth staff. To achieve skills expected for telehealth staff, everyone involved in the telehealth will have a formal training plan that includes clinical, business and technical operation of this service. The following elements should be considered and be part of the training plan:

The VISN Training Plan should include courses and content that meets both National and VISN guidelines, Store-and-Forward Teleheatlh and Clinic Based Telehealth standards of care. The Rocky Mountain Telehealth Training Center and Boston Telehealth Training Center provide a training algorithm of required, suggested and highly recommended trainings. The common functions and resources of the training centers include:

- Super user and Leadership programs
  - Master Preceptors
  - Program Support Preceptors
- Competency development programs
  - Skill Assessments
  - Ongoing competency
- Multi-media educational programs
  - Virtual
  - Face to Face
  - Hybrid
- Continuing Education available
  - Ongoing current updates
  - Hot topic forums
  - Journal clubs
  - Evidenced Based Practice Forums
- Mentoring and performance support
  - Consultation
  - Program Development
  - Competency Evaluations
  - Remedial training
- Just-in-time training
  - Immediate consultations
  - Help desk responses
- Business Ops support and training
  - Data Mining
- Workload capture
- Train the Trainer
  - VISN support for training and validation

Educational Initiatives

Of great importance in developing a telehealth program is provider education to attest to the benefits of telehealth. This will serve to generate referrals as well as insure proper follow-up in medical center clinics.

Training needs will vary depending on the modality and technical level of telehealth applications in your program. However, the principles of patient confidentiality and HIPAA regulation permeate all types of telehealth.

To develop and sustain a successful telehealth program, providers and support staff need adequate education regarding the benefits of telehealth and efficient operational procedures. This will serve to generate referrals as well as insure proper follow-up in medical center clinics.

The Following Links Will Direct You to Related Resources

Clinical Video Telehealth Training Algorithm
This is a tool developed by the Rocky Mountain telehealth Training Center to provide the VISN guidance to develop a formal CBT training plan. The tool includes a variety of courses, program and other virtual training tools. Orientation, business, technical and clinical guides are also included in the list of offerings

Clinical Video Telehealth Resources
This link provides a list of resources to use in the development, management and evaluation of a CBT/ CVT program.

Store and Forward Based Resources
This link provides a list of resources to use in the development, management and evaluation of SFT program

CHAPTER 15: Patient and Caregiver Education and Training

It is important to ensure that Veterans that have never been exposed to Clinic Based Telehealth are oriented to the telehealth program environment and understand their rights, responsibilities and telehealth policies. Patient and Caregiver Clinic Based Telehealth orientation, education and training are intended to provide the Veteran with a comprehensive array of information and resources. The mission of telehealth is to provide the Veteran the right care at the right time and place. The Veteran centric care model supports and encourages Veterans to be full participants in their care and self-management. To this end, the patient is provided information and training regarding telehealth and how their care is impacted through the telehealth modalities. A thorough explanation on the use of Clinic Based Telehealth and its uses of new telehealth technologies must occur. The orientation and education touches on each of the following areas:

- **Cost**: total cost of care is reduced when patient and healthcare provider travel expenses are considered. Costs are also reduced if patients have the support to manage their own care, or get care early in the disease process.

- **Access**: by providing a telehealth endpoint closer to where the Veteran lives, there is greater access to specialty care. For example to see a cardiologist, neurologist, or surgeon for follow–up after surgery without traveling to the distant site.

- **Quality**: studies measuring quality of telehealth compared to inpatient visits indicate no significant perception of difference.

- **Patient Satisfaction**: surveys gathered after each telehealth encounter show a high level of satisfaction, particularly as it relates to cost and improved access.

The Following Links Will Direct You to Related Resources

New Veteran Orientation Telehealth Guide
A document to assist you in the delivery of new Veteran orientation that includes telehealth program overview

CHAPTER 16: Quality Management and Risk Management

Conditions of Participation

The Office of Telehealth Services (OTS) is responsible for an internal accreditation process for the Quality Management of all telehealth programs in the VHA. The standards utilized for all telehealth programs are known as the Conditions of Participation (COP). These Conditions of Participation reflect program processes (clinical, businessand technology) essential to the safe and effective provision of care and are required for all telehealth programs operating within VHA, including all Clinic Based Telehealth programs. The Office of Telehealth Services uses a uniform process to facilitate the development, approval and designation of telehealth programs utilizing the Conditions of Participation as the core component.

This designation process requires a successful review utilizing a combination of the following: review of self assessments of compliance with the Conditions of Participation at the network, facility and program levels for each VISN; interviews with key staff members at all levels of the network; review of relevant performance improvement and other data and documentation; remote reviews of Store-and-Forward Telehealth workstations; and the use of tracer methodology where appropriate.

Core telehealth Conditions of Participation apply to all telehealth programs. In addition to these core Conditions of Participation, there are additional program-specific Conditions of Participation that apply for Clinic Based Telehealth programs. In order to implement Clinic Based Telehealth programs within any facility or program unit, a VISN must ensure full and successful implementation of all of these Conditions of Participation (both core and program-specific) in order to achieve and sustain The Office of Telehealth Services designation status. A Conditions of Participation review process is conducted via periodic VISN-wide site visits and reviews (about every two years) by The Office of Telehealth Services Quality Management Team.

In addition, the Quality Management Team provides consultation and linkage to both field and system expertise to assist in this rapidly changing area of patient centered care. The designation process is essential for any model or application of Clinic Based Telehealth implemented, regardless of organizational alignment. With each cycle of VISN Conditions of Participation reviews, the requirements for conformance with the Conditions of Participation are successively escalated and, in some cases, additional Conditions of Participation are added as needed.

The Conditions of Participation documents and other review tools may be found on the Office of Telehealth Services Quality Management SharePoint site at: vaww.infoshare.va.gov/sites/telehealthquality/

External Accreditation

The Joint Commission and other external accrediting bodies may review some or all components of Clinic Based Telehealth programs in the course of their surveys and usual review processes. Typically, Clinic Based Telehealth programs might be identified during a typical tracer activity during a survey of any type. This may lead to review of any aspect of the Clinic Based Telehealth program including, but not limited to: privacy/confidentiality, infection control practices, clinical documentation, orientation/training/competency, performance improvement, credentialing and privileging, etc.

However there is no separate or focused review of telehealth programs and there are no separate Joint Commission standards for telehealth, with one exception. That exception is the existence of specific standards for credentialing and privileging that do apply to Clinic Based Telehealth programs. Clinic Based Telehealth Program Managers should be very familiar with these standards and able to readily demonstrate compliance. The internal accreditation process using the Conditions of Participation has been thoroughly reviewed with the Joint Commission and they are familiar with the process the Office of Telehealth Services uses for Quality Management of telehealth programs.

Performance Improvement

The Conditions of Participation require that each VISN identify, require and monitor core quality and performance indicators for all of its Clinic Based Telehealth program sites.   These indicators might be designed related to a variety of clinical, business or technology areas of interest related to Clinic Based Telehealth including, but not limited to, aspects of utilization, access, clinical outcomes, cost, quality of life, patient satisfaction, functional status, or provider satisfaction. Whenever possible, indicators should be collected from data that is electronically available for review and tracking.

Using data from the performance improvement process, each program should communicate program experiences to program staff and others as appropriate, identify opportunities for improvement and develop action plans, as necessary, to assure continuous program improvement. Utilization of the same indicators across similar Clinic Based Telehealth programs with a VISN would provide the ability to compare and benchmark results. Use of a VISN-level score card for reporting of performance data and outcomes is highly recommended.

Some suggested topics for continuous performance improvement initiatives include:

Clinical -
- Specific clinical outcome and process measures for the patient population served by the program.

- Equivalency of outcomes achieved for care using Clinic Based Telehealth as compared to standard face-to-face care.

- Follow up time from consult to treatment.

- Number, percentage of non-readable/un-gradable images by imager and location.

Business -
- Track and trend penetration by unique patients and rurality, number of encounters.

- Tracking of the number and type of specialty clinics using Clinic Based Telehealth.

- Track and trend percent compliance with matching workload capture across all Clinic Based Telehealth programs and sites on both the OS and DS.

- Patient satisfaction (A standardized national tool for Clinic Based Telehealth is currently undergoing the required review and approval process).

- Provider Satisfaction Survey

- Track and trend capacity gained from 'windshield time' for providers avoiding travel to patient sites.

- Improved access to care.

- Impact on time to next appointment for new, established patients.

- Changes in no-show, cancellation, unscheduled visit rates.

- Utilization parameters such as admissions, length of stay, ER visits, primary care visits.

- Return on investment.

- Likelihood that patient would have traveled to another VA site for care in lieu of Telehealth.

- Avoidance of miles traveled by patients.

- Avoidance of travel pay costs.

- Technology:

- Measures of Quality of Service (QoS).

- Number, percentage of images located in Teleretinal imaging workstations.

- Number, percentage of dropped sessions due to technical issues.

- Number, percentage of cancelled sessions due to technical issues.

- Number, percentage of instances of poor picture quality, pixilation, audio/video lag, etc.

Risk Management

Risk Management can be defined as a process that centers on identification, analysis, treatment and evaluation of real and potential hazards. In the area of Clinic Based Telehealth, potential risks for the program are few, but there are a couple areas of concern that may lead to a potential patient safety risk. These areas of concern include 1) the safe and effective management of any medical or mental health emergency that may occur during a Clinic Based Telehealth encounter and 2) Clinic Based Telehealth equipment failure that may prevent the patient /provider encounter from occurring.

In a medical or mental health emergency, the Clinic Based Telehealth provider who is located at a distance from the patient is unable to provide direct assistance to the patient and must rely on others at the originating site to respond safely and effectively. When equipment fails a back up or contingency plan must be in place to support safe and effective patient care. It is essential for effective risk management that policies/procedures be developed and practiced around contingency planning and emergency management of any Clinic Based Telehealth patients. Communications, roles and responsibilities of all staff must be well defined and clear. The following provides some specifics regarding safe and effective emergency management and contingency planning and procedures.

- All clinicians should be well informed of both medical and mental health emergency procedures.

- Practice drills should be implemented regularly to determine any risk

- In the case of a medical or mental health emergency, it is recommended that the specialty provider, who is at the remote site and therefore cannot provide in-person assistance/care, immediately contact the CBOC staff Telehealth Clinical Technician (TCT) and/or Patient Support Assistant (PSA) who will initiate emergency procedures per their local emergency policy.

- Mental health emergencies may require additional emergency response from the community and may involve several additional steps depending on the situation. These steps should be spelled out very clearly in policy and procedure.

- If the Telehealth Clinical Technician or Telepresenter is in the room with the patient during the medical emergency, then that individual would initiate emergency procedures.

- A phone must be available in the clinic patient exam room to provide a method for the provider to call the room and support other emergency issues.

- Other alert mechanisms should also be explored for the provider to connect immediately with CBOC staff particularly if the patient was alone in the exam room when the emergency occurred. Some of these alert mechanisms include cell phones, pagers, panic buttons and CPRS alerts.

- Telehealth equipment failures

- A back up plan should be in place to ensure patient care is not jeopardized particularly in the event of equipment failure. It is important that the Facility Telehealth Coordinator at the originating site synchronize with the specialty provider to offer appropriate intervention for the patient.

- Have back up equipment on hand, especially those items used often and those which are mission critical.

- Determine if parts of the telehealth visit can be done in alternate ways while problems are being resolved.

- At the very least, the specialty provider can communicate by phone with the patient in the event of video failure.

- See troubleshooting section in this guide.

Conditions of Participation
These are self assessment tools developed by the Office of telehealth's Quality Management team to assist VISNs with the Conditions of Participation program designation. The tools contain a listing of all the applicable standards used to evaluate and assure safe and effective Veteran care.

CBT Emergency Management Procedures
This is a tool developed by the Rocky Mountain telehealth Training Center to provide the VISN guidance and procedures for Emergency Procedures during a Clinic Based Telehealth encounter.

The Following Links Will Direct You to Related Resources

Chapter 17: Additional Resources

Additional resources are available for publications, resources and a Glossary of Terms. This will assist the reader to further their knowledge, additional resources for planning and implementation. The resources are also useful for managing a Clinic Based Telehealth program.

The Following Links Will Direct You to Related Resources

Publications/ Resources/ Links
A comprehensive list of references, resources and links for the reader to access to understand the background, theories and documented experiences used to create this document

Glossary and List of Terms

The Following Links Will Direct You to Related Resources

Glossary of Terms
A list of terms found in this document to assist you in understanding the intent of the abbreviations, terminology and acronyms.