



# Liver Telehealth Resource Guide

Department of Veterans Affairs  
Veterans Health Administration



# TABLE OF CONTENTS

## INTRODUCTION

- 2 What is Telehealth?
- 3 How Clinical Video Can be Beneficial for Liver Care

## NEEDS ASSESSMENT FOR CVT BASED LIVER CARE

- 4 Sample Questions to Consider
- 4 Data Collection and Resources

## BUSINESS CASE DEVELOPMENT

- 6 Budget Proposal and Funding

## APPROVALS

- 7 Building Your Team
- 8 Using Existing Infrastructure

## STAFFING

- 9 Choosing the Staff
- 10 Roles of Various Disciplines in HCV Care
- 10 Credentialing and Privileging
- 11 Coding, Workload Credit, and Co-pay
- 12 Training

## EQUIPMENT

- 13 Choosing New Equipment
- 14 Ordering and Installation
- 15 Troubleshooting

## THE LIVER CLINICAL VIDEO TELEHEALTH CLINIC

- 16 CVT Visit Slots
- 17 Patient Eligibility and Recruitment
- 17 No-shows
- 18 Pharmacy and Lab Orders
- 18 Application of CVT to Specific Liver Clinical Care Issues

## OTHER USES OF CLINICAL VIDEO TELEHEALTH

- 20 Group Education
- 20 Mental Health Services
- 20 Provider Education

## REFERENCES

- 22 References
- 22 Contributors

# INTRODUCTION

As of FY 2010, there were approximately 165,000 Veterans with chronic hepatitis C virus (HCV) in care at medical facilities operated by the Veterans Health Administration (VHA), among whom 35,841 (22%) have ever been treated with anti-viral therapy [1]. Of these HCV-infected patients, 23,337 (14%) have been diagnosed with cirrhosis [1]. An additional 27,000 Veterans with cirrhosis from other forms of liver disease are also estimated to be in care [2]. Despite evidence that compared to primary care providers, hepatology practitioners are more likely to administer potentially curative antiviral therapies to HCV infected patients [3, 4], studies suggest that less than half of all VHA patients with liver disease access a specialist [5].

Approximately 30% of VHA patients with HCV-associated liver disease reside in rural areas [5]. Rural Veterans served by the VHA tend to have a lower quality of life, higher disease prevalence, higher hospital readmission rates, and diminished access to specialty, mental health, and addiction services as compared to their urban counterparts [5-11]. Barriers to care include lack of specialists in rural areas, lack of transportation, and distance to major medical centers.

Although their barriers may differ slightly, many Veterans in poor, inner-city areas also encounter issues in accessing specialty care. Primarily, they may be hindered by lack of reliable or convenient transportation to major medical centers.

Telehealth offers significant potential to enhance patient care and improve health outcomes within the VHA. Telehealth can be effectively used to deliver liver-related screening, diagnostic, and treatment services to rural and urban Veterans who have difficulty gaining access to specialty care. Telehealth also presents an opportunity to improve communication and care coordination between specialty care and primary care providers. The VHA has invested significantly in telehealth equipment, staff training, and technical expertise, yet the use of telehealth for delivery of liver-related specialty care is still nascent.



Building a liver clinical video telehealth clinic requires careful coordination between the specialty care site and the referring care sites. The purpose of this manual is to provide a step-by-step guide for helping providers in the following ways:

- Determining whether liver clinical video telehealth may be beneficial for their patient population
- Becoming familiar with the telehealth resources that already exist within their facility and Veterans Integrated Service Network (VISN)
- Planning and implementing a liver clinical video telehealth clinic

## What is Telehealth?

The term “telehealth” refers a variety of ways to deliver clinical care or consultation, using telecommunication technologies including landline telephones, mobile phone applications, and video teleconferencing equipment. Some examples include the following:

**Clinical video telehealth (CVT)** is real-time video teleconferencing (VTEL), sometimes with supportive peripheral devices (e.g., external camera), with health care providers providing care to patients and/or consultation to other providers at a distance.

**Store-and-forward telehealth** involves acquiring and storing clinical information (e.g., lab results, X-rays, or echocardiograms) at one time point, which is later forwarded to another site for clinical evaluation. For example, a primary care physician uses retinal photography to acquire images that can be analyzed later by ophthalmologists at remote sites for evidence of diabetic retinopathy.

**Home telehealth** involves the assessment and monitoring of patients in their homes through remote monitoring devices (e.g., Health Buddy).

**Teleconsultation** involves a provider-to-provider consultation on patient care (e.g., SCAN/ECHO).

The focus of this manual is clinical video telehealth, but other uses of telehealth, such as group therapy or provider education, will briefly be discussed in Other Uses of CVT.

Some additional terminology found in this manual includes the following:

**Specialist site or “distant site”** – This is the site where the specialist is located. The specialist site may share the same station number as the referring site (e.g., a Veterans Affairs Medical Center [VAMC] with an affiliated community-based outpatient clinic [CBOC]) or have a different station number (e.g., a CBOC and VAMC each located in different VISNs).

**Referring/Patient site or “originating site”** – This is the site where the patient is physically located at the time the CVT service is provided. It is the site requesting consultation or care management support from a provider located at the specialist site. A referring site may be a CBOC, Vet Center, or VAMC without liver-related specialty care.

### SCAN/ECHO

The VHA is implementing a new model of telemedicine care, based on Project ECHO (Extension for Community Healthcare Outcomes), called SCAN/ECHO [12-13]. Project ECHO was first developed at the University of New Mexico for liver specialists to electronically connect with primary care providers in remote locations. The model leverages telehealth to allow liver specialists to provide expert advice directly to primary providers. It is based on case-based learning, like a tumor board conference, whereby providers dial in from multiple outpatient clinics to present cases to the specialists and discuss options for management. The patient is not present during the case discussion. As the case is presented, providers from other outpatient locations are listening and learning. A didactic presentation (with continuing medical education credit) accompanies each care discussion.

# How Clinical Video Telehealth Can Be Beneficial for Liver Care



As described in the introduction, there are large numbers of patients with HCV and other forms of liver disease who receive care in the VHA system. Consultations with specialists in liver, gastroenterology, or infectious disease are helpful both for routine monitoring and for complex clinical problems. Travel to distant VHAs for specialty care may not always be practical or feasible, so CVT can provide care in an efficient, effective, and Veteran-centered manner.

With the help of this manual and the CVT resources already in place in the VHA system, any VHA provider should have the resources to set up a liver CVT program that fits their patients' needs.

## The Planning Stages

Prior to starting a liver CVT clinic there are four main steps of planning and approval one must normally complete:

- 1. Needs assessment-** which includes an assessment of basic infrastructure such as staffing, equipment and space.
- 2. Business case-** which includes an analysis of the return on investment and plan for sustainability.
- 3. Budget-** which will identify the resources available and provide a foundation to track, report and sustain the program financially.
- 4. Approval-** 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 FOR CVT BASED LIVER CARE

Prior to initiation of a new liver CVT clinic, one should conduct a needs assessment to better understand the burden of disease, quality or access to care issues, as well as available resources. A needs assessment can assist with delineating goals and objectives of the project as well as resources and activities needed to achieve the plan.

For a sample needs assessment/business plan go to:

[http://vaww.infoshare.va.gov/sites/telehealth/docs/Need\\_Asses.docx](http://vaww.infoshare.va.gov/sites/telehealth/docs/Need_Asses.docx)

## Sample Questions to Consider

- How many patients with chronic HCV or other forms of liver disease are actively in care at the referring facility?  
How many are in the catchment area?
- What are the barriers preventing some patients from accessing a specialist?
  - Transportation barriers
  - Time/distance barriers
  - Co-morbid physical or mental conditions that limit travel
- Are patients with liver disease who are followed at the referring facility being appropriately screened and treated?
- Do both the referring and specialist sites consider liver CVT important?
  - Is leadership at both sites supportive?
  - Are there sufficient staffing resources available?
  - Is there potential for building a continuing collaboration between the referring and distant sites?
  - Are there potential local champions at both sites who can take on implementation?
  - What technical resources (e.g., IT support) are present at the referring and distant sites?

## Data Collection and Resources

Below are some suggestions about data that can help to answer the above questions, along with some resources that may be helpful in accessing these data.

### Establish patient need for liver CVT

- Number of patients with liver disease (liver-related ICD-9 codes)
- Number of admissions and re-admissions for liver disease at referring site
- Workload estimates at referring site
- Patient addresses (to illustrate distances from specialty care facility)
- VHA mandates or measures that are currently not being met

## Resources

- Clinic logbooks
- Computerized Patient Record System (CPRS)
- Hepatitis C Clinical Case Registry
- Facility DSS Office

## Clinic wait times and volume

- Outpatient encounters
- Number of patients with liver disease who are no-shows for liver clinic
- Numbers of untreated HCV patients
- Compliance with medical plans

## Resources

- Clinic directors and service chiefs
- Benefits and Data Management Office
- Laboratory services

## Cost of implementation

- Equipment needs versus existing resources
- Workload
- Total of full-time equivalent (FTE) staffing available and needed for implementation (not just clinical care)
  - Credentialing
  - Project management

## Resources

- A joint meeting between the specialty site and referring site providers and leadership (such as a clinic administrative officer or clinic director)

## Other useful sources for clinical data

- VA Information Resource Center (VIREC)  
<http://www.virec.research.va.gov/>
- Introduction to VA Data  
<http://www.virec.research.va.gov/Intro/Intro.htm>
- Research User Guides (detailed guides about accessing various VA databases)  
<http://www.virec.research.va.gov/rugs/rugs-index.htm>
- VA Hepatitis C Directives  
<http://vaww.hepatitis.va.gov/policy-index.asp>
- Local health services researchers
- Clinical applications coordinator (CAC)

## Clinical Case Registry

The Clinical Case Registry (CCR) application for hepatitis C supports the maintenance of local and national registries for clinical and resource tracking of care for patients with HCV.

Administrative and clinical reports about patients with hepatitis C can be generated by running reports from the CCR.

The CCR software is installed at the VHA medical center with which a particular clinic is affiliated and access requires an authorization “key” to be added to each user profile. Each VHA medical facility has a designated CCR hepatitis C coordinator and support person in IT; to find a list of these contacts, go to <http://vaww.publichealth.va.gov/quality/registry.asp>.

See the CCR page on VistaU at <http://vaww.vistau.med.va.gov/VistaU/ccr/default.htm> for extensive information and resources, and for contact information regarding general questions.

National reports on VA hepatitis C care generated from the CCR are available at <http://vaww.hepatitis.va.gov/data-reports/ccr-index.asp>.

# BUSINESS CASE DEVELOPMENT

A business case is developed to provide evidence that your liver CVT program will be fiscally responsible and sustainable.

Factors to consider when developing the business case for CVT:

- Costs associated with equipment, staffing and facilities.
- Start-up and ongoing sustainability for both the patient site and provider site.
- Workload and reimbursement.
- Lifespan of technology.

For a sample needs assessment/business plan go to:

<http://vaww.infoshare.va.gov/sites/telehealth/docs/Forms/AllItems.aspx>

## Budget Proposal and Funding

Telehealth funds (T21) are distributed from Central Office to the VISNs and then down to individual facilities. These are set aside separately from information technology (IT) funds. The telehealth lead and committee at tertiary sites are responsible for allocating the funds to the areas of greatest need.

Begin with the CVT lead from the local tertiary facility to obtain input on how funding is generally obtained for specific CVT clinics. Often, funding is based on the demonstration that new clinics will provide either a decrease in cost or an increase in access (see section on Data Collection and Resources). A formal request for funding should indicate whether funds are needed for equipment or for staffing, as mechanisms for these are often different. If there are no facility funds available to support CVT clinics, a VISN telehealth lead may have additional insights into other sources of funding.



Providers who are given funds for their liver CVT clinic should contact their facilities fiscal department to understand how and when that funding should be obligated and spent.

# APPROVALS

All new CVT clinics need to have approval at both the VISN and facility level, by individuals in the administrative, clinical, fiscal and telehealth departments. Below is a list of approvals that should normally be obtained prior to the start of the clinic.

Keep in mind that the CVT lead may be responsible for obtaining and processing many of the approval steps. Prior to any formal planning, one should contact the CVT lead in their facility or VISN to learn the specifics of what is required for that site.

Standard Approval Requirements:

- Chief of service
- Facility and VISN CVT leads
- Facility and VISN telehealth counsels
- Chief of staff



Additionally, a Memorandum of Understanding (MOU) and/or Service Level Agreements (SLAs) between sites may sometimes be required.

Examples of these documents are found in the links below:

**Telehealth Service Approval Process**- *Reference chart of required approvals*

<http://vaww.infoshare.va.gov/sites/telehealth/docs/apprvl-flwchrt.docx>

**Chief of Service Line Approval Form**- *Template for approval of service line chief*

<http://vaww.infoshare.va.gov/sites/telehealth/docs/CoSlne-apprvlfrm.docx>

**Chief of Staff Approval Form**- *Template for chief of staff approval*

<http://vaww.infoshare.va.gov/sites/telehealth/docs/CoS-apprvlfrm.docx>

**Clinical Video Telehealth: Policies and Memorandums of Understanding**- *Explanations and templates for MOUs and SLAs*

<http://vaww.infoshare.va.gov/sites/telehealth/docs/Forms/AllItems.aspx>

## Building Your Team

To build a successful liver CVT clinic, it is critical to have the active support of administrative and clinical staff at both the referring and specialty medical center levels. To build a consensus around the use of VTEL, there must be an opportunity for key personnel to express their preferences and concerns regarding initiation of a new liver CVT clinic.

Prior to implementation, it is vital to discuss the plans for liver CVT with the following individuals at all participating sites:

- Referral site leadership
  - E.g., Medical center director, chief of staff, or their designee
  - Buy-in is instrumental to approving the needs assessment, business case, budget, and service level agreements.
- Originating site leadership
  - E.g., Medical director of a CBOC
  - Discussions should include the role each staff member will play in the new CVT clinic and development of any MOUs.
- CVT Lead/Coordinator
  - Every VISN has a CVT lead who can help with the design and execution of the business plan. A list of VISN CVT leads is available at: <http://vawww.infoshare.va.gov/sites/telehealth/Lists/leads/CVT.aspx>
  - Some medical centers will have a CVT lead and clinics may have a designated CVT nurse or clerk.
  - Leads plan/develop, implement, support, and evaluate telehealth-related activities.
  - They can provide guidance about technology, funding and compliance, as well as act as a liaison between departments involved in CVT.
- Distant site/specialist staff
  - Discuss available staffing and motivation to provide liver CVT care with the specialist staff.
- Lab director
- Pharmacy leadership
  - Especially critical if planning on treating hepatitis C patients
- Other key staff
  - Smaller centers may not have CVT staff, in which case any staff expected to perform functions normally executed by a CVT lead should be included.



Forming relationships across sites is best facilitated by at least one in-person meeting; however VTEL meetings or phone conferences are acceptable alternatives in the event that the distance between sites is too great for travel. In building a CVT team, consider existing referral patterns and expand the staff from there.

## Using Existing Infrastructure

Not all liver CVT clinics need to be created from the ground up. Most VHA medical centers and clinics already have some VTEL equipment and the technological infrastructure to support its use, as well as resources for training providers in its use. Existing CVT clinics in individual facilities may be used as models for clinic structure and equipment may be shared across clinics.

## Choosing the Staff

Discussions about which staff members will fill the following CVT clinic roles should occur both internally at each site (perhaps as part of a regular clinic meeting) and among the participating sites to develop a plan that works for all participating parties.

Multiple roles may be assigned to one individual, especially if a facility has a designated CVT lead or nurse.

Role	Potential Staff
Clinical Champion will: Support and promote liver CVT development Inform clinical peers about the new program Work around barriers to implementation	Ideally the clinic director, but any member of the clinical staff who has the time, energy, and interest in the task. The champion must be viewed as someone with the authority to move the project forward.
Creating the CVT slots and clinic	CVT lead (local or VISN) IT
Identifying patients for liver CVT care	Referring site providers via consult Specialty providers Designated CVT staff
Scheduling visits: At the specialist site At the referring site One site may schedule both, or each site can be individually responsible	At either site: CVT/clinic clerk CVT/clinic nurse Providers
Telepresenter (CVT set-up, vital signs, etc.) - responsible for "presenting" the patient to the specialty provider.	Any provider at referring site
Delivery of specialty care	Medical provider with expertise in hepatology at specialty site
Post-visit management (ordering labs, medications, etc.)	Specialty care provider places orders and referring sites draw labs, etc. Via consult note to referring site
Closing the visit encounter	Permission can be given to one individual to close both encounters, or each site can close its own encounters
Troubleshooting and technical support	CVT lead or clerk IT Designated member of clinical staff

Not only should individuals understand their expected role, but staff at both sites should be aware of each other's roles. A contact list should be developed and circulated through both clinical teams, with a clear understanding of which team member should be contacted for particular issues (e.g., drug interaction questions, scheduling, or laboratory monitoring).

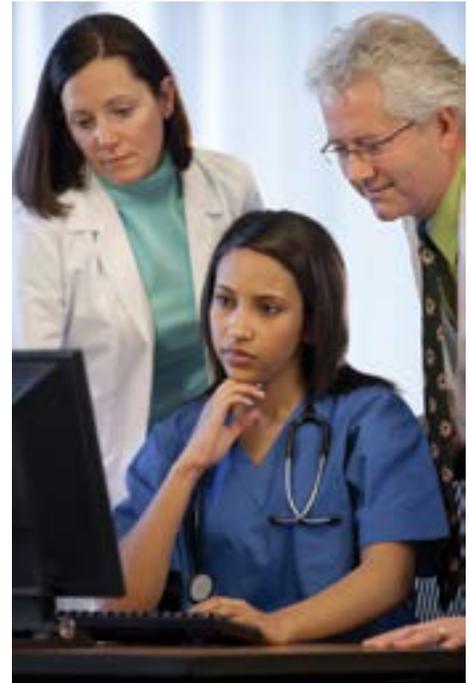
## Roles of Various Disciplines in HCV Care

Within many CBOCs, particularly those located in rural areas, staff members serve multiple roles. Non-physician providers can serve important roles in the management of HCV patients via VTEL.

HCV treatment regimens are complex, difficult to tolerate, and require extensive patient counseling. The need for frequent monitoring, medication adjustments, and management of adverse effects creates an ideal niche for mid-level providers or others, such as clinical pharmacists, to optimize HCV antiviral treatment and to ultimately improve patient outcomes.

Potential roles involve the following:

- Teaching patient education classes
- Identifying and referring eligible patients for liver CVT
- Reviewing HCV treatment candidacy and initiating antiviral treatment
- Ordering and facilitating the provision of prescriptions
- Ordering and following-up on labs
- Monitoring treatment response and managing adverse effects
- Coordinating care with primary care or specialist providers
- Mentoring primary care providers, nurse practitioners, nurses, and pharmacists on HCV education and treatment



## Credentialing and Privileging

VHA providers who have a medical staff appointment at their specialty site and are credentialed and privileged in accordance with the Joint Commission, HIPAA and VHA regulatory standards, do not need additional credentialing in order to become CVT providers. However, in order for the provider's credentialing to be valid at the referring site, additional agreements may be necessary. Please check with your local CVT lead to determine which of the following are needed.

### Memorandum of Understanding

A telehealth memorandum of understanding (MOU) serves as an agreement between the referring and specialist facilities with regard to credentialing and privileging of providers. If the referring site is considered part of the same facility as the specialty site (e.g., care between a medical center and a local CBOC), then a MOU may not be required.

If the referring site is at a separate facility from the specialty site, then a MOU may be necessary to clarify the credentialing and privileging of providers in the provision of telehealth service delivery.

### Telehealth Service Agreement

A telehealth service agreement (TSA) specifically outlines the clinical, business, and technical procedures of operations of CVT services between the referring and specialist site. Once a provider is privileged to give care at the referring facility, a TSA is used to flesh-out the working relationship between the specialist and referring site.



The Office of Telehealth Services has convenient MOU and TSA templates in their master telehealth document library at:

<http://vawww.infoshare.va.gov/sites/telehealth/docs/Forms/AllItems.aspx>

## Coding, Workload Credit, and Copays

Although providers are not responsible for creating the CVT time slots in CPRS or for payment of visits, it is helpful to be aware of some terminology and concepts.

Clinical video telehealth clinics are set up in pairs, with one clinic visit at the specialty site and a corresponding visit at the referring site. In order for both sites to receive workload credit, visits must be set up, procedures must be documented, and visits must be closed out at both the specialty site and the referring site.

### Terminology

**Decision Support System (DSS) Identifiers/Stop Codes** are used to collect workload credit for encounters.

A clinic is assigned two DSS codes, a primary clinic stop code and secondary credit stop code. These codes identify the specific clinic type responsible for care and also determine the copay amount and whether the clinic is billable to third parties.

**Current Procedural Terminology (CPT) Codes** are assigned to a task or service provided to a patient by a medical caregiver. Coding for CVT requires one CPT coded at the patient site and the other CPT coded at the provider site.

**Count vs. Non-Count** – A clinic designated as a count clinic means that the visits are considered encounters and workload credit is given (i.e., a patient sees a specialist over VTEL). A clinic may be designated as non-count if it is mainly administrative in nature or for logistical reasons.

**Copays** – Copays are dependent both on the patient (i.e., whether or not they are service connected) and on a clinic's DSS stop code. The three tiers for copays, as determined by the Chief Business Office, are non-copay, basic copay, and specialty copay.

A patient who is required to submit a copay will pay only for the CVT visit at the specialty site (i.e., the patient does not pay twice) and the amount the patient pays will be dependent on the DSS stop code.

For more information:

- Talk to your CVT lead, local business office, or DSS office
- Office of Telehealth Services: CVT Clinic Setup Guide  
<http://vaww.telehealth.va.gov/clinic/cvt-csg.asp>

## Training

Although only a limited number of staff members may be designated to use the VTEL unit or schedule VTEL visits, at least one or two backups should be trained for each role. The VHA already has rich training resources in place to instruct providers on the use of VTEL. These include web-based courses, programs, live meetings, mini-residencies, train-the-trainer sessions, and more. The local CVT staff also may be able to provide local instructions or training.

Information on different training tools can be found at:

<http://vaww.telehealth.va.gov/index.asp>



Providers do not need to become VTEL technology experts in order to start a CVT clinic. Fortunately, the VHA already has a telehealth infrastructure in place. At most larger VHA sites, the equipment, VTEL setup, and troubleshooting can be handled by telehealth staff at the local or VISN level.

First, it should be determined whether existing equipment is adequate to meet the needs of the liver CVT clinic. Most tertiary VAMCs and many CBOCs have existing telehealth monitors used for various purposes, and scheduling can be shared across other services.

## Choosing New Equipment

In the event that the existing telehealth equipment at a facility is unavailable or inadequate for anticipated needs, it may be feasible to order additional equipment. Purchasing new monitors will likely require additional funding from local resources or equipment budgets, within telehealth programs or within a facility. Often it will be the telehealth office that makes the final decision about any equipment purchased.

The type of new equipment chosen will depend on compatibility with the existing equipment at a particular facility, the availability of funds, and the types of services that will be offered.

There may be personnel within a VHA center who have experience and knowledge with VTEL equipment. Potential resources include the following:

- CVT committee or lead – Staff should be knowledgeable about different equipment vendors and technology support.
- CBOC telehealth nurses – Certain clinics have dedicated telehealth nurses who can assist in selecting equipment most appropriate for their space.
- Office of Telehealth Services (OTS)– Contact national VHA organizations to receive guidance on CVT equipment that has been used with good success in the VHA.

## Creating the Ideal Clinical Video Telehealth Room

- Use diffuse fluorescent lighting, avoiding a mix of light sources. Minimize backlighting and shadows.
- Cover exterior windows with drapes.
- Use simple décor that is uncluttered within the camera's view.
- The best wall color is matte and a neutral "medium tone" light gray, light blue, or beige without patterns.
- Find a quiet space that minimizes outside noise (e.g., speakers, busy areas, traffic) and inside noises (e.g., fans, phones).
- Maintain privacy.
- Set up the patient room in an area that is small and free of distractions.



1. Determine the type of equipment that will best suit anticipated needs:
  - How big is the room? Does the space serve multiple purposes? Which is preferable, a desktop monitor or one for a conference room?
  - Room systems offer the best image quality and most flexible connection options.
  - Desktop systems are economical, but provide limited connectivity. The quality is adequate for some applications but not all.
  - PC-based room systems provide some of the flexibility of traditional room systems at a more modest price.
  - Will there be a need to visualize rashes or other physical findings closeup? This is especially pertinent if there is a high volume of HCV patients on treatment.
    - Equipment will need to have sufficiently high resolution, otherwise a separate peripheral device will be required.
  - Is there a need for accessories for the monitor such as an external microphone, document cameras, diagnostic peripherals (light source), or digital cameras?
2. Try out the existing equipment at the site, if applicable, to determine whether the makes and models available are compatible with anticipated needs.
3. Talk to the CVT lead or Information Resource Management Service (IRMS) staff to determine whether there are new technologies available that would enhance the CVT experience.
4. Although shopping online for the most competitive price is an option, a company must be an approved VHA vendor before equipment can be purchased with VHA funds. Keep in mind that choosing a vendor that does not currently have VHA approval is not a barrier to purchasing, but will require additional paperwork. Federal discounts are available from most vendors.

## Ordering and Installation

VHA sites vary with regard to responsibility for ordering and installing VTEL equipment. If contacts in the following departments are not available, ask coworkers if they know anyone, or search through the VHA intranet or Outlook for contact information. As always, if a CVT lead is available, that individual should be the primary resource.

Individuals who are responsible for choosing the equipment should talk to several VTEL equipment vendors to determine the best price and develop a working relationship before ordering the equipment.

- Information Resource Management Service (IRMS)
- IT support
- Warehouse
- Acquisition (Purchasing agent) and Material Management Services

## Troubleshooting

Prior to starting the clinic, determine the contact person for any technical issues during a visit. Depending on the facility, this could be the IT help desk, a CVT lead, or a designated IT contact (e.g., a telehealth nurse or clerk). Plan in advance who will be called in the event of a problem, and make backup plans for the visit (e.g., conduct the visit in an alternate room; conduct the visit over the telephone). This contact must be aware of when the clinic is scheduled and be accessible by phone, email, or pager during that time.



Having the manual for the equipment near the device or creating a “cheat sheet” of the important functions may allow the clinical staff personnel to successfully troubleshoot the issue themselves. Make sure the cheat sheet also lists the direct numbers to all the VTEL units in the clinic as well as phone numbers for designated contacts.

Additionally, it is advisable to purchase the equipment under warranty. If IT services are limited in the facility, some vendors will offer a year’s worth of IT support to assist with installation and subsequent troubleshooting.

Develop a plan that takes into account the site’s resources and the staff’s level of familiarity with the technology.

# THE LIVER CLINICAL VIDEO TELEHEALTH CLINIC

Once the basic resources are in place it is time to flesh out the logistics of the liver clinic itself.

1. Assign staff members to different CVT positions and clearly define each person's role at both the specialty and the referring sites.
  - Discuss whether the nurse or other provider at the referring site will be present for the entire visit or just for part of the visit so that they can budget time appropriately.
2. Decide which day(s) and times the CVT clinic will be held, how long each visit will need to be, and how many patient slots should be opened per week.
  - If multiple specialists will be seeing patients, make sure both the specialty site and referring site are aware of whom to contact on any given clinic day.
3. Determine the way patients will be notified of their CVT visits at the referring site.
  - Keep in mind that systems in place for in-person visits, such as automatic postcards or letters, may be customized for a CVT visit.
4. After visits clarify who will be placing orders for labs, imaging, follow-up visits, etc.
5. Develop notification systems for "no-shows" or cancelled visits that alert both sites.
6. Allow flexibility for roles to change, but make sure everyone knows how to communicate these changes across sites. (e.g., if a CVT staff member is on vacation, how is the other site notified?)

Communicating these decisions is best done in-person during a clinic meeting or over a VTEL call with all parties present. As with any new initiative, problems will arise in the early stages, but coming to a consensus and clearly communicating the following steps will go a long way toward smoothing the process.

## CVT Visit Slots

Once the clinical teams at both sites have determined when they would like to hold the CVT clinic, a CVT lead or IT member will need to create or submit the visit slots.

A CVT encounter is unique because a slot and appointment need to be made at both the specialty site and referring site in order for everyone to be properly reimbursed. After a visit is completed, both sites also will need to close the visit. See the section on Coding, Workload Credit, and Copays for more details.

Permission to create appointments may be granted to staff at both sites, or one site may be given permission to schedule visits in both locations. Work with the local clinical team and CVT lead to determine the best approach.

## Patient Eligibility and Recruitment

Above all else, the added convenience of a CVT visit should be accompanied by quality of care that is comparable to an in-person visit.

Factors to take under consideration when choosing patients eligible for CVT include the following:

- Disease severity
- Compliance with medications and medical regimens
- Frequency of patient visits
- Services available at the referring site

Once general guidelines for patient eligibility have been agreed upon by the clinical team, all staff members should be made aware of potential types of patients that would be eligible for CVT.

Recruitment can be either a group effort, with several staff members participating in scheduling patients into CVT encounters, or it can be the responsibility of a dedicated staff member. Triageing patients into CVT will most likely fall to the specialist site at first. The specialty site may want to consider hosting a brief session to train referring site staff on how to identify patients appropriate for liver CVT so that they become more adept at recognizing eligible patients.

The following are some additional strategies for patient recruitment that may be employed:

- Provider consults
  - Have a system in place (Gmail, consult template, etc.) for staff at either site to refer patients to CVT.
  - Adding a CVT option in existing liver consult templates or creating a separate consult can facilitate the consult process.
  - Rescheduling current visits into CVT is most easily facilitated by having a designated staff member review the current visits.
- Directly notify patients of the new clinic, via mailers or brochures
  - Can use the Clinical Case Registry or have the business office generate a list of eligible patients (based on ICD-9 codes).
  - The CVT lead may have existing materials to use.
- Educate patients about CVT during their clinical visit or via educational materials in the waiting room.



## No-Shows

No-shows may be an even bigger issue in CVT clinics than in traditional clinics, because a no-show affects the scheduling at two sites. Therefore, a strategy for reducing no-shows should be incorporated into planning for the liver CVT clinic. Strategies may include:

- Having providers, nurses, or clerks call patients prior to their visit
- Sending appointment reminders via the postal mail, email, or text message
- Creating instructional materials for the waiting rooms highlighting the importance of keeping or cancelling one's appointment
- Requiring an educational class on liver disease before scheduling a visit

Any strategies currently used by a medical facility or CBOC to reduce no-shows for regular visits should be applicable to a CVT clinic.

## Pharmacy and Lab Orders



In making the clinical decision to follow patients on hepatitis C antiviral treatment in CVT visits, the availability of pharmacy and laboratory resources must be taken into consideration. Coordination with Pharmacy Service is necessary to determine whether patients will receive their medications at the CBOC via shuttle services from the main VHA pharmacy, by shipment to their home, or through a fee-basis contract.

Because treated patients require frequent laboratory tests to monitor hematologic toxicities and response to treatment, providers also need to ensure that laboratory tests can be performed at the referral site or through a fee-basis contracted site.

### New Hepatitis C Treatments

In May of 2011, the U.S. Food and Drug Administration approved two drugs in the first new class of drugs for hepatitis C since 2001. These protease inhibitors, when combined in a regimen with pegylated interferon and ribavirin, offer higher sustained virological response (SVR) rates. Among patients who are treatment naïve or who partially responded to prior therapy, this triple-therapy had a 60% to 80% SVR rate.

However, more intensive monitoring will be required during therapy for side effects and hematological toxicity. More information can be found at: <http://vaww.hepatitis.va.gov/index.asp>.

## Application of CVT to Specific Liver Clinical Care Issues

Below are several types of liver clinic visits in which providers may consider using liver CVT. A liver CVT clinic may choose to focus on a subset of patients with the greatest need or, if resources permit, a very wide range of patients with liver disease.

Type of Visit	Duties/Procedures at Specialist Site	Duties/Procedures at Referring Site
Routine consultation or follow-up of hepatitis C patients	<ul style="list-style-type: none"> <li>• Discuss HCV transmission, course, and therapy options</li> <li>• Discuss utility of liver biopsy Limited examination over VTEL</li> <li>• Review results of liver imaging, pathology and blood work</li> <li>• Make follow-up plans</li> </ul>	<ul style="list-style-type: none"> <li>• Potentially a limited physical exam, including vital signs</li> <li>• Facilitate coordination of laboratory and radiology testing</li> </ul>
Cirrhosis	<ul style="list-style-type: none"> <li>• Review interim history, results of liver imaging, pathology and blood work</li> <li>• Make follow-up plans</li> </ul>	<ul style="list-style-type: none"> <li>• Vital signs including weight and examination of any physical changes (i.e., edema, increased abdominal girth, confusion)</li> <li>• Facilitate coordination of laboratory and radiology testing</li> </ul>
Hepatitis C antiviral therapy	<ul style="list-style-type: none"> <li>• Assess need and readiness for therapy, therapy initiation and management</li> <li>• Follow results of blood work and adjust medication regimen accordingly</li> </ul>	<ul style="list-style-type: none"> <li>• Vital signs, examination of any new side effects (rash, injection site reaction)</li> <li>• Facilitate coordination of laboratory testing</li> </ul>
Hepatitis B	<ul style="list-style-type: none"> <li>• Assess need for therapy</li> <li>• Follow results of any blood work and adjust medication regimen accordingly</li> </ul>	<ul style="list-style-type: none"> <li>• Vital signs including weight, examination of any physical changes (i.e., edema, increased abdominal girth, confusion)</li> <li>• Facilitate coordination of laboratory testing</li> </ul>
Non-alcoholic fatty liver disease	<ul style="list-style-type: none"> <li>• Review laboratory and radiology results</li> <li>• Consider liver biopsy for diagnosis prognosis</li> <li>• Refer to nutrition and MOVE clinics</li> </ul>	<ul style="list-style-type: none"> <li>• Vital signs including weight and examination of any physical changes</li> <li>• Facilitate management of weight loss</li> </ul>
Elevated transaminases of unclear etiology	<ul style="list-style-type: none"> <li>• Conduct thorough patient history, review laboratory and radiology results</li> <li>• Discuss utility of liver biopsy</li> <li>• Limited examination over VTEL</li> <li>• Request additional laboratory or radiology work</li> <li>• Discuss potential need for in-person visit</li> </ul>	<ul style="list-style-type: none"> <li>• Vital signs including weight, examination of any physical changes (i.e., palmar erythema, spider angiomas, rash, icterus, edema, increased abdominal girth, confusion)</li> <li>• Facilitate coordination of laboratory and radiology testing</li> </ul>

When CVT may not be appropriate:

- First or new decompensating events
- Consideration of referral for a liver transplant
- HCV treatment initiation
- First diagnosis of autoimmune hepatitis or PBC/PSC
- First diagnosis of hepatocellular carcinoma
- Emergent or urgent medical/psychiatric conditions

# OTHER USES OF CLINICAL VIDEO TELEHEALTH

## Group Education

The most basic group education involves multiple patients attending their local clinic to have a discussion with a specialist over VTEL. If the technologic capabilities are present, a specialist may be connected to multiple outlying sites (i.e., conduct a presentation at a tertiary hospital with all local CBOCs connected via VTEL). Connecting multiple sites at once can be logistically challenging, so complete a test-run with your technical team prior to the scheduling of any patients.

Uses for group education:

- Scheduling regular presentations and Q&A sessions for patients newly diagnosed with a liver condition
- Discussing new treatment options with HCV patients
- Preparing patients for entry into liver CVT care



Benefits:

- Facilitating patient access to care and education
- It can provide a way to educate multiple patients at one time so that clinic time is freed up for other discussions.
- Fostering greater patient self-management

## Mental Health Services

As nearly half of VHA patients with HCV have underlying mental health disorders, CVT may provide the platform by which mental health providers can connect with Veterans undergoing therapy in referring sites-either individually or in group sessions. Better mental health care access can provide benefits in the following areas:

- Management of treatment-related mental health side effects
- Adherence to therapy
- Likelihood of successful completion of therapy

## Provider Education

Providers serving Veterans in rural locations are often unable to attend VAMC grand rounds. VTEL may provide the modality for specialists to connect with primary care providers in remote locations in the following ways:

- Hosting liver-related grand rounds
- Discussing liver cases
- Discussing hot topics in liver care

Hosting educational sessions for referring site providers also facilitates collaborative partnerships with the specialty care site providers. Contacting the Employee Education System (EES) about the ability to provide CME credit for referring site provider involvement in liver VTEL educational activities is recommended.



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September 2012

IB 10-489 | P96545