

**VETERANS HEALTH ADMINISTRATION (VHA)**

***TELEMENTAL HEALTH  
TOOLKIT***

**June 15, 2003**

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## **Section 1: Background and Use of the Toolkit**

### **Background**

This toolkit has been produced as a collaborative effort between:

1. VHA clinicians involved in delivering telemental health services
2. The VHA Telemedicine Strategic Healthcare Group
3. The VHA Mental Health Strategic Healthcare Group
4. The VHA Telemental Health Field Advisory Work Group with representatives from each Veterans Integrated Service Network (VISN)

This particular toolkit addresses telemental health care using real time videoconferencing systems:

1. Between two VHA medical center facilities
2. Between VHA medical center facilities and Community Based Outpatient Clinics (CBOC's)
3. Between VHA medical center facilities and Vet Centers

This toolkit will not specifically address home telemental health services since home telemedicine will be addressed extensively in a separate VHA Home Telehealth Toolkit. Therefore, this Telemental Health Toolkit should be used in conjunction with the upcoming VHA Home Telehealth Toolkit in order to coordinate general telemental health principles with home teleservices.

All other "tele" initiatives (e.g. web counseling, interactive voice response, etc) will be addressed separately and in the future.

### **Using this toolkit**

The impetus to produce this toolkit was an attempt to harmonize the practices and procedures used in telemental health in VHA for the benefit of patients and practitioners. This harmonization of processes and procedures applies to:

1. Establishing a new telemental health service
2. Revising or reviewing an existing service

The ideal way to use this toolkit is in conjunction with the establishment of a steering group with overall responsibility for telemental health services. Typically a steering group includes persons, at the facility or VISN level dependent upon the scope of the project, such as:

1. The lead clinician for the telemental health services
2. The local telemedicine coordinator
3. A member of the executive leadership team
4. A representative from IT (Information Technology)
5. The local credentialing coordinator
6. A local representative from HIMS (Health Information Management Systems)
7. The Information Security Officer
8. A consultant from the VHA police department

This toolkit provides a framework to discuss essential items that should be considered when establishing telemental health services. It is important to begin this process by assessing:

1. What is the need for telemental services (Section 2: Needs Assessment)?
2. How should the services be constructed (Section 3: Clinical Specifications, and Section 4: Technical Specifications)?
3. What is necessary to make the services operational and to ultimately sustain them (Section 5: Managing the Service)?
4. How will clinical effectiveness of the services be monitored (Section 6: Quality and Outcomes Measures)?

These sections will be supplemented by a number of additional items:

1. Website links will be included throughout the text to facilitate direct connection to such items as VHA directives and vendor webpages.
2. Additional policies and surveys will be attached and referenced throughout the text.
3. The content of the toolkit concludes with a checklist to help assess the readiness of the program as an operational service, together with a glossary and bibliography.

## **Section 2: Performing a Needs Assessment for Telemental Health Services**

### **Defining the reasons for considering telemental health services**

The steering group should determine why telemental health is being considered as an alternative to face-to-face visits as the very first step in establishing a telemental-health service. Typically, telemental health programs have been started in the VHA:

1. In response to national mandates to provide specific mental health services (e.g. in the CBOC's or for special programs like Posttraumatic Stress Disorder)
2. To increase access in geographically remote areas where no current services exist
3. To provide alternative services in areas where it is difficult to recruit staff at the necessary level
4. To increase efficiency in places where travel time for current VHA clinicians would significantly diminish their clinical time

### **Performing the needs assessment**

The steering group should oversee the determination of the patient need for telemental health services. This should define which patients could most benefit from telemental health services by asking:

1. Who are the patients that are currently receiving treatment at the existing VHA facilities who would instead be served by telemedicine if it were implemented?
2. Who are the patients that might choose to begin services at the VHA if telemental health were available but who are not currently receiving VHA services?

Addressing the first question could begin by requesting a report from the VHA's Austin database on patients that are seen at the existing parent VA facility. This database can be further broken down into number of patients seen for each mental health diagnostic category (typically psychotic, affective, anxiety, personality, substance abuse, and cognitive/organic disorders).

Addressing the second question above often begins by obtaining data on which eligible veterans with service-connected mental illness diagnoses are not currently receiving VHA services. It is conceivable that some of these might receive VHA treatment if it were located geographically closer.

Identification of the patients in both groups above can be merged with information regarding their geographical residence. This data can be obtained by VISN/Facility/CBOC location as a whole for which the telemental health service is being considered, then by Zip Code. Each facility or VISN usually have support staff that can obtain this information, as this has been readily done in already existing VA telemental health programs. The data can then be further imported to a MapQuest type geographical software program that visually plots where such patients are clustered geographically.

Using these VHA databases one can identify which potential satellite telemental health sites (e.g. CBOC's and VET Centers) are likely to have sufficient patient numbers in what diagnostic categories (patient need) to justify developing telemental-health services.

Assessing needs in this way gives the steering committee overall numbers and locations of patients who might benefit from telemental health services. This is important in deciding the "who", "what" and "where" of establishing telemental-health services. The steering committee may choose to limit its telemental health program to the treatment of specific diagnoses (e.g. PTSD). If so, then the numbers of patients the service is expected to treat should be so adjusted accordingly.

### **Section 3: Clinical Service Specifications**

The telemedicine steering group will need to construct clinical service specifications to answer the questions: who will receive telemental health services, what telemental health services will be provided, where will telemental health patients be treated, when will they be treated and who will treat them.

**Who will receive telemental health services:**

Patient selection/exclusion criteria must be developed to determine who is appropriate to refer to the intended telemental health services. These criteria need to be agreed upon by the clinicians providing the telemental health services based upon clinical judgment and the available resources of the given facilities. Commonly used criteria are:

**General Selection Criteria (in VHA)**

1. Eligible veterans with established mental health diagnoses
2. Further selection criteria may be program specific (e.g. patients living in a particular geographic area near a specific CBOC or patients with a particular diagnosis for a specific treatment intervention like smoking cessation)

**General Exclusion Criteria (in VHA and review of literature) \***

1. Patients who reject telemedicine in the informed consent process
2. Acutely violent patients or unstable patients with poor impulse control
3. Acutely suicidal patients
4. Severely decompensated patients with immediate need for hospitalization
5. Patients requiring involuntary commitment in states which: a) do not legally acknowledge telemedicine evaluations for this purpose, or b) states that require licensure in the state where the patient is located if the clinician is in a different state and needs to initiate involuntary hospitalization proceedings
6. Patients requiring essential medical monitoring that is unavailable on site (e.g. patients with impending DT's)
7. Patients to whom news might be better delivered in person (e.g. conveying HIV testing results, etc)
8. Patients with specific mental illness symptoms that might be exacerbated by telemental health may need special consideration (e.g. ideas of reference regarding televisions)

The steering committee may also select additional exclusion criteria based upon their staffing and resources.

**\*IMPORTANT NOTE:** Most exclusion criteria (except for #1) are “relative” rather than “absolute contraindications” and must be weighed using clinical judgment at the time of the request based upon the competence of the provider, the technology available, the needs of the patient, and the other options available. Additionally, even if patients meet acceptance criteria for telemental health, they still retain the option of being seen face-to-face if they so desire.

**What telemental health services will be offered:**

The steering group will need to decide what type of mental health services they intend to provide via telemedicine. Similar to face-to-face services, telemental health services are divided into:

A. Consultation: typically a one-time telemental health visit whereby the distant consultant recommends diagnosis, treatments, etc to the proximate provider requesting the consult, but the "consultant" does not assume care of the patients nor write orders. The proximate treating clinician maintains ultimate responsibility of the patient rather than the distant consulting clinician. For example, consultations may involve the remote clinician interviewing the patient, performing a Compensation and Pension examination, or administering a diagnostic or psychological test remotely.

B. Ongoing Treatment: the distant clinician delivers treatment beyond the level of consultation only. Treatment services, generally outpatient, are further divided into:

1. a. Urgent or Emergency Care, New Patients  
b. Urgent or Emergency Care, for Previously Seen Patients
2. a. Routine, New Assessment (e.g. CPT # 90801)  
b. Routine, Follow-up Medication Management with or without Individual Therapy (e.g. CPT# 90862, 90805, 90807, 90809)  
c. Routine, Follow-up Psychotherapy without Medication Management (e. g. CPT# 90804, 90806, 90808)  
d. Routine, Follow-up Group or Family Therapies (e.g. CPT # 90853, 90846, 90847, 90849)
3. Specialized Programs (e.g. smoking cessation sessions, behavioral interventions, pain management)

Two important decisions need to be made regarding:

A. Urgent Care: The Telemental Health steering group will need to decide whether urgent care will be available by telemental-health services. Telemental health capabilities are often most helpful at the time of a crisis, when an expert clinician is urgently needed but is not readily available on-site. However, emergency visits also require more extensive contingency procedures to be in place in case the patient becomes imminently violent, suicidal, or otherwise in need of hospitalization (see Section 5).

The steering committee will need to determine the relative risk/benefit of providing urgent care visits via telemental-health based upon their resources. Some factors to consider include:

---Is there sufficient staff available at the site of the patient to assist in an emergency?

---Is the telemental health facility the only available resource for miles from a suicidal patient, or can a suicidal patient be more appropriately triaged to a suitable hospital emergency room that is nearby?

B. New Assessments: Additionally, the steering committee will need to determine whether new patients can be seen initially via video at the remote site, or whether they will be required to be seen initially face-to-face at the parent VHA facility. Many clinicians feel more comfortable seeing the patient initially face-to-face, particularly if the patient is being assessed for possible hospitalization on the initial visit. However, if the patient lives hundreds of miles from the site of the clinician, requiring an initial face-to-face visit may delay treatment or deter the patient from obtaining treatment altogether. Based upon a review of the literature and the experience of VHA practicing telemental health clinicians, there appears to be no absolute contraindication or indication for initial visits to be performed via video teleconferencing or face-to-face. Again, clinical judgment will need to take into consideration the skills of the clinicians and the needs of the patients when making this determination.

**Where will telemental health patients be treated:**

From reviewing the needs assessment data by Zip code (See Section 2) and from knowledge of the clinical services and back-up resources at the VAMC's, CBOC's, Vet Centers and private facilities with which the telemental health care services are expected to link, decisions can be made about the suitability of patients to be treated at the various sites. Patient density projections can help the steering group geographically prioritize implementation of telemental health services.

**When will telemental health patients be treated:**

From the anticipated patient workload, the number of sites involved in the service and the waiting time requirements, it is then possible to determine how often telemental health service clinics should be held at the various sites. If the telemental health clinics will be held less than full-time (e.g. one or two afternoons/week), this presents an opportunity in the planning stages to consider sharing the equipment and operation with other services (e.g. non-mental health sub-specialty consultations).

**Who will treat the telemental health patients:**

From the above data it is possible to determine the numbers and designations of the following staff that will be necessary to provide comprehensive telemental health services:

1. Psychiatrists
2. Psychologists
3. Social workers
4. Nurses and clinical nurse specialists
5. Physician assistants
6. Other mental health care providers

The originating site is considered where the patient is physically situated at the time of the telemental health episode of care. The level of clinical support for the patient at the originating and distant sites must be decided. The designation of the provider at the distant site and the level of support at the originating site will determine the nature of the services that can be safely and appropriately delivered to the patient.

A clinical judgment must be made as to whether a staff member will be in the room with the patient while the patient is linked to the practitioner at the distant site from whom he/she is receiving care/consultation. In telemedicine, a distant clinician cannot make observations on a patient's handshake, attitude prior to the interview or the way the patient treats support staff. A trusted and trained clinical assistant located at the patient's end can often assist in this manner. Based upon a review of the literature and the experience of practicing VHA clinicians, there appears to be no absolute necessity to always have a clinician in the room with the patient while video communicating with the distant clinician. Again, this is dependent on the expertise of the distant clinician, the abilities and needs of the patient, and the other resources and options available. If no clinician is to be present in the room with the patient, there will need to be technical support to assure that the equipment is set up and operating correctly and it is important that a mechanism is in place for the distant clinician to contact staff at the site of the patient if an emergency arises or to convey follow-up orders/instructions.

#### **Section 4: Technical Specifications**

Having completed the needs assessment and having determined the nature of the clinical service specifications, it is now the right stage of the development process to decide the technological specifications of the equipment needed to deliver the service.

##### **Inventory of existing equipment**

The steering group should have access to a comprehensive and up-to-date inventory of what telemedicine equipment exists at all sites under consideration for the delivery of telemental health services. It is worth bearing in mind that some of the intended sites may already have equipment in place for other programs that is not being maximally utilized. Many CBOC's, for instance, already have video teleconferencing equipment in place for administrative videoconferencing that can be made available for clinical telemental health during convenient time periods. If an administrative room can be used for clinical purposes then it is important to insure that all necessary privacy and confidentiality issues are adequately addressed.

In addition, the steering group should be aware of what current telecommunications networks and data services already exist in the network and whether they are suitable and available for telemedicine in the facility and VISN. This information is critical for deciding where resources should best be placed.

For example, the logistics are easier and telemental health services are cheaper and much less complicated to implement to CBOC's if an existing Wide Area Network (WAN) with T-3 lines could be used, as compared to implementing similar services to a Vet center that does not have this telecommunications access already in place.

### **Videoconferencing technology**

Telemental health uses real time video rather than store-and-forward technologies to deliver services. Routine off-the-shelf video conferencing technologies that are low cost and robust are readily available. The most important criteria are that:

1. The technologies are compatible and interoperable
2. They use the correct video applications protocols H.320 and/or H.323

### **Equipment options**

The basic equipment options include:

1. *High Powered Videoconferencing Equipment (e.g. V-Tel, Picture-Tel, Polycom 384/512 View Stations):*

*Cost range:* approximately \$4000-\$10,000

*Advantages:* These units are often already in place at many VA facilities for administrative teleconferencing, and can be further used for clinical telemedicine when available. They generally can provide a clearer larger picture with multiple site capabilities. Group therapy applications would likely require this level of equipment for a broader and clearer view of the room. Peripheral devices can be added which is relevant if co-opting with other services.

*Disadvantages:* Increased cost for features that are non-essential for mental health. No access to the medical record.

2. *Desktop Video Equipment (e.g. Polycom Via Video):*

*Cost:* approximately \$400-500 for the camera and software with additional Personal Computer (PC) cost if not being added to existing PC.

*Advantages:* These types of units are the ones most often used for telemental health within the VHA because they maximize needed features while minimizing cost. They may be attached to a stationary, mobile or laptop PC. Mobile or laptop applications offer flexibility to move from clinician to clinician or room to room. Since they are attached to a PC, this also allows for viewing the medical record.

*Disadvantages:* Viewing area is limited so these units are not conducive to group therapy applications. Transmission can be less reliable than the High-Powered View Stations above. Peripherals cannot be added.

3. *Videophones or Personal Video Stations (PVS<sup>TM</sup>)*

*Cost:* Videophones approximately \$300-500; Vialta PVS Beamer approximately \$225-250

*Advantages:* Use of home telehealth units is extensively addressed in the VHA Home Telemedicine Toolkit and not directly addressed here. However, these videophones or PVS's should also be considered as an inexpensive easy adjunct when planning other point-to-point services (e.g. ER to ER or parent medical facility to homeless shelters).

Videophones can be used with Plain Old Telephone System (POTS) by simply plugging into an existing phone outlet anywhere. PVS Beamers are screens that attach to any existing phone to convert it into video. PVS has snapshot capabilities. Videophones have varied features like zoom capabilities and removable cameras as well.

*Disadvantages:* Speed of transmission is limited to that of phone lines (usually 24-56Kbits/sec) and that often contributes to a perceptible delay, unreliable connections, and/or poor transmission. Screen is small with limited clarity. POTS based video currently uses H.324 videoconferencing protocol and is not viewable on Polycom and other videoconferencing equipment used for inter-facility telemedicine. In the future it is likely that an Internet Protocol (IP) will be used for home-telehealth applications.

Note: Home health appliances (e.g. Health Buddy) are designed to provide feedback to patients on their care needs and some have televideo capabilities. They are currently being adapted for mental health use and will be mentioned in future versions of this toolkit.

#### VENDOR WEBSITES:

*VideoTeleConferencing:* The following two sites should provide useful information about videoconferencing equipment:

[www.polycom.com](http://www.polycom.com) ; [www.tandberg.net](http://www.tandberg.net)

*Home Telehealth Videophones and Equipment:* The following sites will provide a sample of some of the videophones and home telehealth equipment available:

[www.americantelecare.com](http://www.americantelecare.com); [www.cybercare.net](http://www.cybercare.net); [www.healthhero.com](http://www.healthhero.com);  
[www.leadtek.com](http://www.leadtek.com); [www.panasonic.com](http://www.panasonic.com); [www.vialta.com](http://www.vialta.com);  
[www.windcurrentstech.com](http://www.windcurrentstech.com)

#### **Purchasing the equipment**

Each steering group should learn who the purchasing agent is from their facility. Typically the IT personnel bid for the equipment. A common technique used when purchasing equipment is to establish a vendor fair. This means technologies can be compared and the clinical, technical and business oriented staff who need to develop the program can all provide input and thereby ensure that the appropriate technology is purchased. It is often helpful to learn how much other VHA facilities are paying for identical equipment, because the cost has been known to vary. The VHA is currently in the process of developing national vendor contract options designed to assure more uniform pricing throughout the VHA and more information about this will be on the VHA Telemedicine website as it becomes available (<http://www.va.gov/telemed/>).

### **IT support**

It is imperative at the onset that the steering committee obtains the commitment of the facility leader to define telemental health and all telemedicine as a top priority for IT support. In addition to expediting the implementation of the equipment, IT support must be available with a quick turnaround time for equipment problems as patient clinical needs are jeopardized when the equipment is not operable. In the circumstances where IT support is not readily available (e.g. CBOC's hundreds of miles away from parent facilities), clinical contingency plans for providing alternative services must be available if there are equipment problems.

IT support should also assure that the equipment settings are optimized and the image is maximized, in order to facilitate the best clinical experience.

### **Peripheral devices**

It is not usually necessary to have peripheral devices such as remote stethoscopes for telemental health. These are optional, costly, and often require a substantially more expensive base unit than is typically necessary for telemental health services. However, if the telemental health equipment is going to be cooperatively shared with other medicine/surgical services, initial equipment purchased must be capable of adding any peripheral devices necessary for these other services.

### **Telecommunications bandwidth**

Bandwidth is the speed at which information travels. Bandwidth requirements take into account the capacity or amount of spectrum needed to transmit/carry/move information without loss or distortion. Greater/higher bandwidth means more information can be sent through the circuit in a given amount of time.

It is usually sufficient to provide 384 kbits/s bandwidth for most routine telemental health services. The bandwidth of the connection need not be excessively raised for observation of extrapyramidal movements as this can be handled more effectively by alternative means if necessary (face-to-face clinician). The bandwidth may be provided between the originating sites and the distant site by:

1. VHA WAN
2. T1 lines
3. ISDN
4. Cable
5. POTS (Plain Old Telephone Service)

The preferred solution is to use the VHA WAN and preferably to deliver video over IP using the H.323 protocol. This is not possible in all VISN's and it may be necessary to use a video bridge and a H.320 connection.

If an IP solution over the VHA WAN is used, there may be no additional VHA telecommunications costs involved. The other solutions may all incur additional costs. The costs of a T1 line or ISDN may be high and the VISN WAN manager should be involved in the discussions of what is appropriate to use.

### **Information management and security**

It is imperative that the facility information security officer be involved in assuring that the telemental health system is HIPAA compliant. It is often useful to involve this individual early in the planning process. Many of the information security issues that relate to telemedicine are common with CPRS and may have already been largely addressed.

### **Redundancy and backup**

Protocols for patient management in the event of an equipment or telecommunications failure must be in place. Provisions should be in place for the distant clinician to at least talk to on-site staff to address the patient's needs in the event of equipment failure. Otherwise, the remote clinician should at least be able to communicate with the patient by phone if at all possible in the event of video failure. The patient should be aware in advance of what to do in the event of equipment failure.

### **Room conditions**

At the originating and distant sites it is important that the clinical setting, lighting, and positioning of the camera are optimal for communication. Medical media services, if available at your VHA facility, may be helpful in assisting in these matters. In addition, for further information, see the VHA's Telemedicine SHG's training module on videoconferencing etiquette for telemedicine (information about how to obtain this video will be available soon on the VHA Telemedicine website).

*Clinical Setting:* It is important to provide a clinical setting that approximates that which the patient experiences when seeing a clinician in person, one that feels as much like a clinician's office as possible. It is helpful if the room being used is strictly devoted to clinical teleconference activities, or if the equipment is placed in the clinician's office itself. Large multipurpose rooms often do not convey the optimal clinical tone or are not suitable for confidential patient care encounters. A smaller, more private room is frequently preferable.

Providing a table where the patient can sit often promotes a greater level of comfort. The table seems to be a welcoming gesture, and provides a buffer zone between the patient and the equipment. Without a table, patients often feel like they are "in the hot seat". The clinician, however, should try not to have a table between himself and the monitor since such a table can create the feeling of being remote or overly bureaucratic.

*Lighting:* Special attention must be given to the lighting in a tele-clinic. Standard overhead fluorescent lighting can convey a sterile, bluish tone. When viewed over teleconference, this can appear cold. Overhead lighting also can cast a shadow over one's facial features when viewed over teleconference, making it difficult to read facial expressions. Having some incandescent lighting in the room, at head and shoulder level, provides a warmer, more even tone. It is best to locate the clinic in a room without a window. A window creates highly variable lighting that is difficult to adjust.

*Sound:* The microphones used tend to be very sensitive to background noise. Even such things as room ventilation systems, typing on a keyboard, or the mechanical noises of the teleconferencing equipment itself can be very disruptive. Experimentation with microphone placement can usually obviate such problems.

*Monitors:* Only one monitor is usually needed at the patient's end, as the patient needs only to see the clinician. The "picture-in-picture" option is available should the patient wish to see his/her image, however it can be distracting to the patient to be looking at his/her own image while talking. The clinician, however, often needs to see his/her own image, in order to make sure everything is working properly. This can be done with two monitors at the clinician's end, or with the picture in picture option.

Telemedicine requires extensive use of the CPRS computerized records system. Frequent consultation of the computer record, however, can disrupt the flow of the clinical interview. Careful thought should be given to:

- a) whether the clinician can toggle back and forth to the medical record using the same screen on which the patient is being viewed,
- b) whether the screen will be split between patient picture and medical record using available software options, or
- c) whether an additional computer monitor should be placed in the room for viewing the medical record on a separate monitor from that being used to view the patient. An additional monitor can be placed on a table adjacent to the clinician, just out of the field of view of the patient, to minimize disruption of the clinical experience.

*Camera Placement:* The camera typically is mounted either above the monitor or on its side. Neither placement is optimal. The patient will typically sit about six feet away from the monitor, and the clinician may be closer, both with their heads at about at the height of the monitor, and both looking directly at the monitor. If the camera is mounted above the monitor, it is actually looking down at the patient at an angle of about 10 degrees. The resulting image looks as if the patient is looking downward. This might falsely make people appear depressed. Likewise, if the camera is mounted on the side of the monitor, the image created makes it look as if the person is looking off to the side slightly. This may falsely create the impression of distraction or disengagement. These distortions would

be eliminated if the camera was located at the center of the monitor, but of course that is technically much more difficult. If a laptop unit is being used, placing the camera slightly behind the laptop with the camera eye just above the center of the laptop screen can frequently approximate the appearance of direct eye contact.

The video image of the clinician is often optimized if it displays the head and shoulders, similar to that of a newscaster. An image that is panned further back can create a feeling of remoteness, and an image any larger can feel intimidating and unnatural. The video image of the patient is more variable, dictated by clinical matters.

## **Section 5: Management of the Service**

### **Clinical and Business Management**

Having decided who will be treated by the service, along with the clinical and technological specifications, the next crucial step in tying this all together is assuring that the service is properly managed clinically and has a viable business case that is sustainable long term. The steering group needs to continue to manage the overall strategy and design of the service. Ideally the project will have access to a telemedicine coordinator who will help with the operational aspects of implementing the service. It is vital that the project has an identified clinical champion who will take ongoing responsibility for the service.

### **Credentialing and privileging**

For 2003, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) addresses Telemedicine Credentialing and Privileging in Standards MS.5.16-MS.5.16.1. Effective January 1, 2004, the JCAHO Telemedicine Standards will be reformatted and renumbered as MS.4.120-MS.4.130 Additional JCAHO Standard information is available online at <http://www.jcaho.org/accredited+organizations/hospitals/standards>

For VHA telemedicine, specific policies and procedures are addressed in VHA Directives that can be accessed at: <http://www.va.gov/telemed/>

Credentialing and Privileging of telemedicine clinicians is explicitly addressed in:

1. VHA Directive 2001-055 "Credentialing and Privileging of Telemedicine and Telehealth Services Provided in Hospitals and Clinics"

<http://www.va.gov/publ/direc/health/direct/12001055.pdf>

2. VHA Directive 2002-042 "The Credentialing and Privileging of VHA Health Care Providers Remotely Delivering Health Care to Patients at Home, in VET Centers, and in Non-Health Care Settings via Telemedicine and/or Telehealth."

<http://www.va.gov/publ/direc/health/direct/12002042.pdf>

These VHA requirements for credentialing and privileging necessitate that the clinicians establishing the telemental health service make a distinction between whether they are providing consultation or care to the patient at the originating site. The originating site is where the patient is physically situated at the time of the telemental health episode of care. There may or may not be a staff member in the room while the patient is linked to the practitioner at the distant site from whom he/she is receiving care/consultation.

### **Training and competency**

In addition to credentialing and privileging, competency with the equipment and the procedure should be verified for each clinician prior to his/her participation in telemental health visits.

Training needs should include:

- How to use the equipment
- Logistical background (scheduling, security, support, coding)
- Using telemental health (clinical protocols, confidentiality, informed consent, ethical standards, protocols and etiquette)
- Conducting the visit (telemedicine interviewing techniques and tips to improve communication)

Examples of ways to document competency are:

- having the clinician demonstrate that he/she can use the equipment to someone experienced with telemedicine
- having the clinician read this toolkit
- having the clinician view any of the VHA Employee Educational System (EES) satellite broadcasts:
  - May 23, 2003--- 4th Annual VHA Telemedicine/Telehealth Meeting: Telemental Health
  - March 6, 2003--- Telemental Health: Toolkit Update
  - September 19, 2002--- Telemental Health: A Toolkit for Success
  - March 28, 2002--- Tele-mental Health
- having the clinician complete a similar or comparable training experience.

### **Clinical protocols, policies and procedures**

There are no absolute VHA diagnostic specific clinical protocols for delivering telemental health. However, each steering committee is encouraged to develop their individualized clinical protocols based upon the anticipated telemental health treatments offered and the resources available.

Specifically, the steering committee should be aware of all local commitment and involuntary hospitalization laws that will impact clinical telemental health services. Additionally, they should develop site-specific policies that address emergencies such as the acutely violent or aggressive patient, the acutely suicidal patient, the patient in need of transport to a hospital for inpatient care, and the acute medical emergency.

The steering group may find it helpful to collaborate with the VA police in developing these emergency safety plans. Additionally, any telemental health policies should be consistent with emergency policies at the parent facility as well as the CBOC's or Vet centers. It may be optimal ultimately to coordinate all emergencies through the parent medical facility, particularly with the assistance of the parent facility VA police, especially if there are no on-site police or security officers at the CBOC's or Vet centers. The VA police can often make direct police-to-police contact during an emergency, providing immediate verification to the community police, and freeing up the clinician to maintain clinical contact with the patient in crisis.

### **Informed consent**

See VHA Informed Consent Handbook 2003 at:

<http://www.va.gov/publ/direc/health/handbook/1004-1hk1-29-03.pdf>

For guidance specific to VHA telemedicine/telehealth, see Part G of Section 9 entitled, "Consent in Special Situations."

All patients who are offered telemedicine-based services must receive a full explanation of the risks and benefits of the service and provide verbal informed consent. Patients are free to refuse telemedicine-based treatment. Informed consent for telemedicine need only be obtained at the commencement of each treatment and/or care program. It is not required for each individual episode of care within the program of treatment and/or care.

Under the following certain circumstances signature (written) informed consent is specifically required:

- a) Home telehealth, which is covered extensively in the VHA Home Telehealth Toolkit.
- b) Permanent video or photographic recording, in which case Department of Veterans Affairs (VA) Form 10-3203, consent for Use of a Picture or Voice, must be used: (AN INTERNET VERSION WILL SOON BE AVAILABLE), and
- c) Research applications: In the event that the telehealth delivery episode is part of a research study, written consent must be obtained per VHA Research Guidelines.

### **Coding and workload credit**

A detailed description of the VHA coding for telemedicine, and specific coding for telemental health as Section B.2, is attached in the appendix. New codes (e.g. 690, 692, 693) more accurately reflect telemedicine workload within the VHA. Special attention was given to coding for unique telemental health circumstances at the CBOC's and Vet Centers.

### **Conducting the interview**

*Verbal Communication:* Verbal communication becomes more deliberate in telemedicine. In normal conversation, there is a natural give-and-take, with

either party cutting in, interrupting the other, completing the other's sentences, and so forth. This occurs naturally and without much thought. Due to the slight delay in transmission time and other technical limitations, this fluidity is limited in telemedicine. Patients comment that the flow of conversation is similar to that seen on television when someone is speaking to astronauts in space. The flow of conversation becomes more deliberate, more punctuated, more formal. Both clinician and patient usually quickly learn to speak more clearly and more slowly. Both parties learn to speak in complete thoughts, then pause and listen. It is not effective to attempt to talk over one another. In most cases even patients with manic or psychotic symptoms are able to adjust to this. This more telegraphic style of conversing actually can lead to more orderly communication, but it can impair the expression of emotions.

*Non-verbal Communication:* It is important that non-verbal gestures not be too rapid. If a gesture's speed exceeds the system's ability to convey it, the patient sees only an odd flicker. Also, care must be taken to make hand gestures at mid-chest level or above, as gestures at the more customary lap level are out of the field of view of the camera.

It is sometimes helpful for non-verbal gestures to be more broad than usual. For example, when in person, one might communicate bewilderment by very slightly leaning back and tilting one's head. In telemedicine, it may be more effective to arch far back in the chair and actually scratch one's scalp in confusion. These grand, dramatic gestures may seem unnatural or even insincere at first, but they can be far more effective than more subtle gestures in telemental health.

*Casual Introductory Conversation:* "Small talk" is a powerful tool of engagement in telemedicine. A patient in a tele-clinic may doubt whether the clinician can understand them or their world from where the clinician sits. This gap can be bridged by engaging in seemingly inconsequential small talk about weather, local sports, or other topics relevant to the patient's community. Demonstrating an awareness of local events and geography can let the patient know that the clinician takes an interest in his or her world.

*Clothing:* Clothing choices are also a consideration. It is often helpful to wear clothing without patterns. A striped shirt, for example, can create interference patterns on the video image. Stark white clothing such as a lab coat can cause problems in balancing the contrast. When wearing clothing that is too bright, the clinician's face disappears into darkness. Patients that come to clinic wearing a hat can be asked to remove it, as the brim of a hat casts the patient's face into shadow from overhead lights.

### **The business case**

Put simply the business case is constructed from the numbers of patients that need to be treated and the costs of providing this care via telemental health as compared to other ways of doing so. Given the current demand for mental health

services in VHA it is likely that this need for mental health services will continue. With the ever-diminishing costs of telemedicine equipment and telecommunications bandwidth, telemedicine is an increasingly attractive solution.

However, providing a telemental health service to a remote location with very poor telecommunications infrastructure may be prohibitively expensive at present. In the cases where telemental health alone may not warrant the cost, the steering group may consider partnering with other services to co-share the equipment and thus prorate the cost.

Systematic reviews of cost effectiveness studies of telemedicine in general and telemental health in particular indicate that adequate and definitive methods of measurement are not readily employed. Detailed cost analyses of telemental health within the VHA are likewise not easily achieved. As the telemental health field work group determines methods for analyzing cost effectiveness within the VHA, they will be shared in future versions of the toolkit.

## **Section 6: Quality and Outcome Evaluations**

To assess the clinical effectiveness and provide a VHA-wide evidence base for telemedicine, a set of standard quality reporting and outcome measures should be routinely collected and these include:

Patient satisfaction and provider satisfaction surveys:

Examples of patient and provider surveys that are currently being used at a number of VHA telemedicine sites are included in the appendix. At the minimum, such surveys should contain questions concerning the viability of the equipment during the visit, issues concerning privacy, questions about rapport and relationship with the provider, and overall satisfaction with the procedure especially as compared with a face-to-face session.

Other outcome measures:

The Strategic Healthcare Groups for Telemedicine and Mental Health, along with the VHA Telemental Health Field Work Group, are in the process of developing a system that would provide outcome measures to clinicians about their telemental health patients. This feedback system would use clinical outcome measures that are already in place such as need for hospitalization and utilization of clinic visits, compliance with treatment and medications, and ratings such as GAF scores. In addition, disease specific outcomes that are already measured in the VA for schizophrenia, substance abuse, PTSD, and depression would be used to compare telemental health patients to routine patients. Existing VHA practice guidelines, such as depression screening, will also be evaluated both with and without telemental health services. Additional outcome monitors (e.g. Schiz-O-M, SF12 or 36) are being discussed by the VHA Telemental Health Field Work Group.

# APPENDICES

## APPENDIX A: FINAL SERVICE CHECKLIST

<b>Steering committee formed</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Needs assessment completed</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Patient selection/exclusion criteria decided</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Telemental health site selected</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Clinical staff designated</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Clinical staff credentialed and privileges</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Clinical service specifications defined</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Technology selected</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Bandwidth arranged</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Clinical champion selected</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Staff training completed</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Quality measures determined</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
<b>Outcome measures determined</b>	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>

## APPENDIX B: VA Telemedicine Patient Feedback

**Date Completed:**                      **Age:**                      **Facility/Site:**                      **Gender:**  Male  Female

**Reason for visit:**                      **Completed by:**

We want to know how you feel about today's telemedicine session.  
Your honest input will help us improve the visits in the future.

For each of the following statements, please mark the opinion that is closest to your own.

1 I felt comfortable with the equipment used.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
2 I had trouble seeing the doctor.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
3 I had trouble hearing the doctor.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
4 The equipment was difficult to use.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
5 If I had any problems, someone was available to help me.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
6 I was concerned about my privacy.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
7 I would be more comfortable telling the doctor my problems in person.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
8 I feel the doctor was able to understand my problem without	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
9 My relationship with the doctor was the same during this session as it is	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
10 It was more convenient to use this session, than to see the doctor in	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
11 I would have rather traveled to see the doctor in person.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
12 My needs were met during the session.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
13 I received good care during this session.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>
14 Overall, I am satisfied with this telemedicine session.	Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

15 I would recommend this type of session to other veterans.

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

16 Please give us any additional comments/suggestions/complaints.

Thank you for your time and contribution!

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## APPENDIX C:

### Department of Veterans Affairs Telemedicine Provider Satisfaction Survey Data Bank

#### Instructions:

**This item bank contains a selection of questions to be used when evaluating provider perceptions of telemedicine encounters. Items are categorized as appropriate to general system/equipment for all modalities; videoconferencing; store-and-forward applications; and home care. In addition, open-ended items are included along with suggested demographic data the evaluator should consider collecting.**

**For the items included in the general system/equipment for all modalities and videoconferencing, two response scales are included at the end of the document. An agree/disagree response scale can be used with all of the questions. However, some of the statements may be more meaningful when they are answered in comparison with in-person consultations or patient visits. For these items, the Worse/Better scale may be chosen. These items have an \* following them.**

#### General System/Equipment Questions (all modalities)

1. The system is easy to use.
2. The image quality is good.
3. The training I received adequately prepared me for using the system.
4. I am able to increase my productivity with telemedicine.
5. Telemedicine adds to my workload.
6. Telemedicine consultation is a good use of my time.
7. Telemedicine consultation is a good use of my skills.
8. I am able to respond to a consultation request in a timely manner.\*
9. I am able to develop a diagnosis.\*
10. I am able to identify a patient problem.\*
11. I am able to develop a treatment plan.\*
12. I am able to meet my patient's needs.\*
13. I like telemedicine as a way to deliver care.\*

14. Telemedicine helps me resolve my patients' health problems in a timely manner.\*
15. Telemedicine helps me to monitor my patients' conditions.\*
16. Telemedicine improves patients' compliance with therapy.\*
17. I am able to develop patient care plans using telemedicine.\*
18. I am able to implement patient care plans using telemedicine.\*

### **Videoconferencing**

1. Outside interruptions at my location interfere with the appointment (e.g., equipment is located in high traffic areas).
2. Outside interruptions at the patient's location interfere with the appointment.
3. Using the system limits the amount of information I can obtain from the patient/family members.
4. I feel comfortable using the system to talk with patients/family members.
5. Using the system limits my access to family members.
6. Equipment/system limitations (e.g., limited view; static; transmission delay) interfere with the patient-provider interaction.
7. The equipment interferes with my interaction with other staff who are present with the patient.
8. The technician operating the equipment at the other end interferes with the consultation process.
9. The technician/patient at the other end is skillful in operating the equipment.
10. The technician at this end is skillful in operating the equipment.
11. Use of telemedicine disrupts the flow of work in my clinic.
12. It is difficult to schedule a videoconference appointment.
13. I am able to keep the length of the visit to a reasonable time frame.\*
14. I am able to establish rapport with the patient.\*

### Open Ended Questions (all modalities)

1. What telemedicine equipment are you using?
2. What do you like about the system?
3. What do you not like about the system?
4. What difficulties have you experienced?
5. What causes you the most problems?
  - (1) Peripherals?
  - (2) Connectivity?
  - (3) Image quality?
  - (4) Audio quality?
  - (5) Scheduling visits?
  - (6) Additional workload?
  - (7) Operation of the equipment?
- By provider
- By patient
6. How could the system be improved?
7. Did you receive training on the system? Yes No

If yes,

Did you receive the appropriate level of training? Yes No

Did you receive high quality training? Yes No

If no, do you feel a need to receive training? Yes No

8. Are there specific patients or diagnostic groups for which telemedicine is not appropriate?
9. Are there specific patients or diagnostic groups for which telemedicine is particularly useful?
10. Do you also need to see patients in-person if using telemedicine?

If yes,

When/why? (e.g., first encounter with patient, during acute episodes or exacerbations)

11. What were your expectations for telemedicine before using the current system? Were your expectations met?

### Demographics

1. Age
2. Gender
3. Years experience as a clinician
4. Years in VA
5. How long have you been using telemedicine as a way to deliver care?
6. On average, how many patients per week do you see via telemedicine?
7. On average, how many hours per week do you spend on patient care activities via telemedicine?
8. Do you receive workload credit for telemedicine visits?
9. Provider type (circle only one)
  - a) Physician
  - b) Nurse practitioner
  - c) Registered nurse
  - d) Licensed practical nurse
  - e) Physical therapist
  - f) Occupational therapist
  - g) Social Worker
  - h) Dietitian
  - i) Pharmacist
  - j) Psychologist
  - k) Other \_\_\_\_\_
10. Type of specialty (circle only one)
  - a) Primary Care
  - b) Medical
  - c) Surgical
  - d) Psychiatry/Mental Health
  - e) Home care
  - f) Spinal cord injury
  - g) Other \_\_\_\_\_

## Response Scales

**Agree/Disagree.** An agree/disagree response scale can be used with all of the questions. The instructions for using this scale are as follows:

Please circle the number that best reflects the extent to which you agree with the following statements about telemedicine as a way to deliver care: (1) Strongly Disagree, (2) Somewhat Disagree, (3) Neither Disagree nor Agree, (4) Somewhat Agree, (5) Strongly Agree, (6) Not Applicable.

**\*Worse/Better.** Some of the statements may be more meaningful when they are answered in comparison with in-person consultations, patient visits, or telephone consultations. These statements are noted with an asterisk (\*). The instructions for using a worse/better scale are as follows:

Please respond to the following items indicating whether telemedicine is (1) Much Worse, (2) Somewhat Worse, (3) The Same, (4) Somewhat Better, or (5) Much Better than in-person consultations or patient visits.

## APPENDIX D: GLOSSARY

This is a partial listing of the most commonly used words or phrases to describe home telehealth activities, equipment or requirements.

**Analog** – Information electronic or otherwise that is created and transmitted as a continuous stream. Compare this to digital information generated by computers. Most home telehealth devices require the use of analog (direct dial, not through the PBX) not digital phone lines to operate.

**Bandwidth** – The capacity of an electronic transmission to transmit data per unit of time. The higher the bandwidth, the more data can be transmitted. Typically measured in kilobits or megabits per second (Mbps). Standard telephones are low bandwidth devices with cable TV and T-1 lines being high bandwidth.

**Baud rate** – Is the ring rate or line power of the telephone line providing service into a given structure (home). Most home telehealth devices require a minimum baud rate of 14,000 to make successful video capture. However, the lower the Baud rate the more likely disconnections will happen.

**Component video** – This type of video yields better image quality, higher lines of resolution, and better color.

**Digital** – Information coded in numerical values (bits). Digital data streams are less susceptible to interference like analog streams are. They can be more easily integrated with other data streams such as voice/video/data.

**Digital camera** – Captures images (still or motion) digitally and does not require analog to digital conversion before the image can be transmitted or stored in a computer. Most home telehealth equipment uses digital video cameras.

**Encryption** – A mathematical transposition of a file or data stream so that it cannot be deciphered at the receiving end without the proper key. Encryption is a security feature that assures only the appropriate parties participates in a video visit or data transfer.

**Firewall** – A computer connected both to the Internet and the local hospital network that prevents the passing of Internet traffic to the internal hospital network. Provides an added security layer.

**Frame rate** – Frames per second (fps) displayed on a video unit. A frame rate of 25-30 is considered full motion. Anything less than that is noticeably “jerky.” Slower frame rates may be inadequate for some assessments such as gait and balance activities.

**HL7** – Health Level 7. A standard interface between hospital information systems.

**Internet** – A loose gathering of thousands of computer networks forming an enormous worldwide area network.

**Intranet** – A “private Internet”, or internal web that employs certain communication protocols used over the Internet. The Intranet may be linked to the public Internet through tightly managed gateways.

**ISDN** – Integrated Services Digital Network, a low-to-medium speed technology for digital telephone. Some home telehealth is ISDN based and can be used where available.

**Local Area Network (LAN)** – A computer network linking computers, printers, servers, and other equipment within a system. Can support audio, video, and data exchange.

**Modem** – Modulator/Demodulator. Enables transmission of digital data over standard analog phone lines and cable video systems.

**Network** – An assortment of electronic devices (computers, printers, scanners etc,) connected by wires or wireless for mutual exchange of digital information.

**PBX** – Private Branch Exchange (a.k.a. the switchboard) is a telephone system (i.e., switchboard, telephone lines, switching computer) within a VHA facility/campus that switches internal phone lines between VHA users, who actually share a certain number of external (outside) phone lines. Having a PBX saves money by reducing the number of lines required to connect all VHA facility telephones to the telephone company's central office.

**Peripheral devices** – Attachments to videoconferencing systems to augment their communications or medical capabilities. Examples include electronic stethoscopes, blood pressure cuffs, glucometers, and weight scales.

**Pixel** – A picture cell with specific color or brightness. The more pixels an image has, the more detail or resolution it can display.

**POTS** – Plain Old telephone System. The analog, public-switched telephone network in common use throughout the world. Most home telehealth products rely on POTS.

**Real time** – Sends and receives audio/video/data simultaneously, without more than a fraction of a second delay.

**Resolution** – The level of detail that can be captured or displayed. For video displays resolution is measured in pixels X lines X bit depth.

**Store-and-forward** – captured audio clips, video clips, still images, or data that are transmitted or received at a later time (sometimes no more than a minute).

**Telehealth** – The electronic provision of health care and information services for the direct benefit of patients and their families.

**Thumbnails** – Miniature pictures of images using very small, low-resolution data files. These download for display very quickly.

**Transmission rate** – Amount of information/unit of time that a technology such as POTS or digital ISDN phone line, satellite or wireless technology, or local area network can transmit.

**Wide area network (WAN)** – Wider in geographic scope than a LAN. Provides digital communications (voice/video/data) over switched or un-switched networks.

## **APPENDIX E: ADDITIONAL "ON-LINE" GLOSSARIES**

For computer/telecommunication/information technology issues:

<http://www.webopedia.com>

<http://www.cnet.com/Resources/Info/Glossary/index.html>

<http://whatis.techtarget.com/>

For telecommunications (including video teleconferencing):

(From Commerce) [http://www.its.bldrdoc.gov/projects/devglossary/all\\_v.html](http://www.its.bldrdoc.gov/projects/devglossary/all_v.html)

For video teleconferencing specifically:

(From DoD) <http://www.tricare.osd.mil/vtc/GlossaryMain.cfm>

## **APPENDIX F: CODING MANUAL**

## **APPENDIX G: SELECTED BIBLIOGRAPHY**

(This is an ongoing reference source which can will be updated on the website)

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