

Care Coordination and Telehealth :

Right Care
Right Place
Right Time

Patricia Ryan MS RN

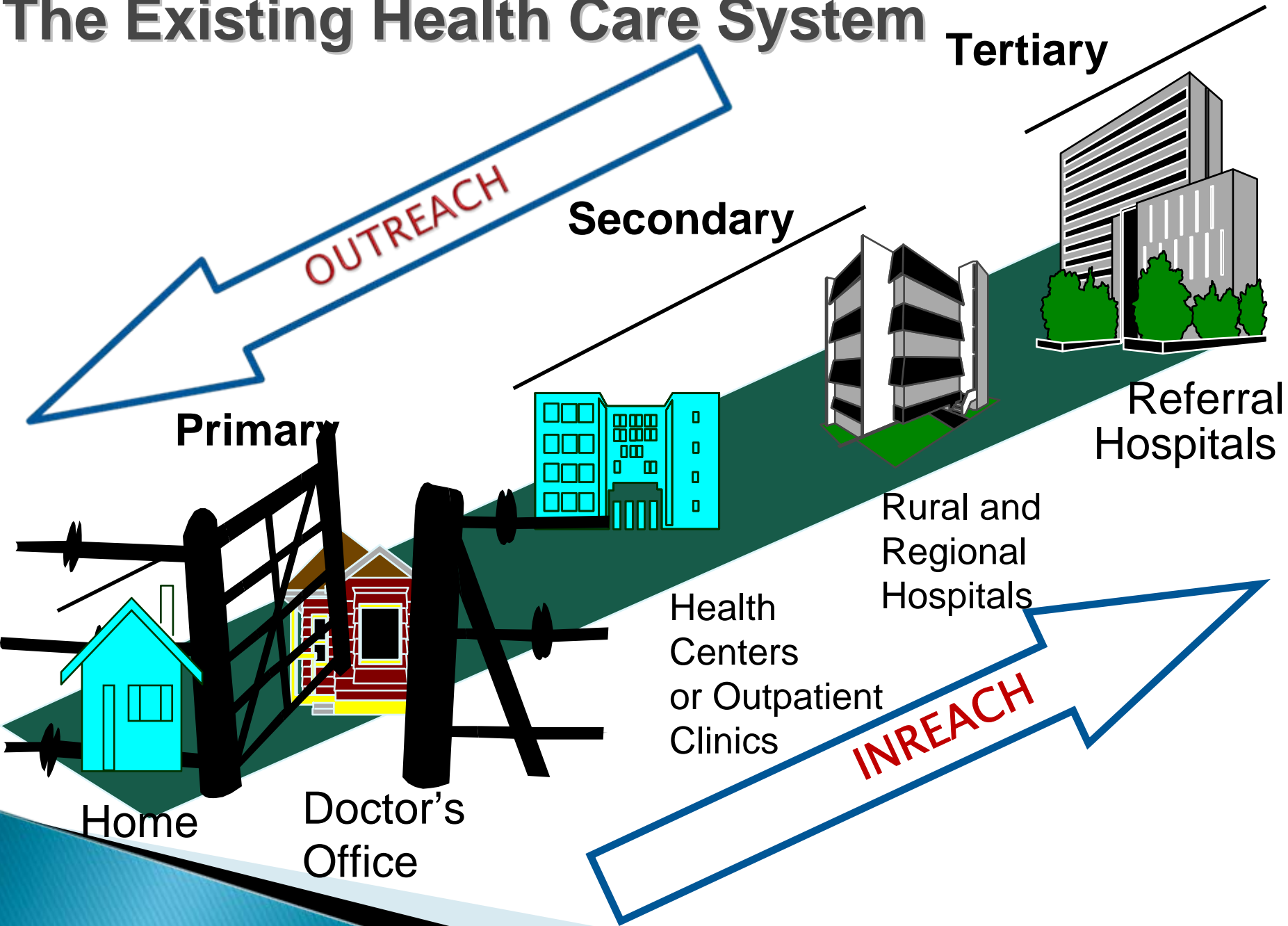
Director VISN 8 Community Care Coordination Service

Associate Chief Consultant

VHA Office of Telehealth Services



The Existing Health Care System



Definition of Care Coordination

*The wider application of care and case management principles to the delivery of healthcare services using health informatics, disease management and Telehealth to facilitate access to care and to improve the health of designated individuals and populations with the specific intent of providing the **right care in the right place at the right time.***



Telehealth in the VHA

- Three major components:
 - **CCHT** – Care Coordination Home Telehealth
 - **CVT** – Clinical Video Telehealth
 - **SF** – Store and Forward Telehealth



CCHT History: 2003 Forward

- ▶ 2003: Initial funding for CCHT equipment for a small pilot group of VHA Networks (VISNs)
- ▶ 2003 –2004: RFP for all VISNs in two phases
- ▶ Major focus on non–institutional care (NIC) and management of chronic conditions
- ▶ Now–More than 150 CCHT programs nationally
- ▶ 42,000+ patients actively enrolled currently
- ▶ 2009––2010 Rural and Transformation Funding



CCHT

- ▶ CCHT may be utilized in a continuum with Primary Care Providers, clinic-based care managers and more traditional Primary Care or Specialty case managers as well as discharge planners and other disciplines involved in care.
- ▶ Care Coordinators are case managers who are able to leverage the use of health informatics, telehealth technologies and disease management strategies to coordinate care of patients with high risk, high cost or high utilization patterns.



Eligibility Criteria for CCHT Services

- ▶ Chronic conditions
- ▶ Frequent visits
- ▶ Enrolled at primary care clinics
- ▶ Telephone service in home
- ▶ Veteran/Caregiver accept/consent
- ▶ Cognitively intact, Veteran/Caregiver
- ▶ Veteran/Caregiver demonstrate competency using and maintaining CCHT equipment



CCHT Enrollment Process

- Basic enrollment criteria include patients with high risk, high cost, high utilization patterns (adapted by each VISN or program for vulnerable populations)
- Decision support data from standard or ad hoc reports, registries, and other data sources used in some programs to help identify patients who meet the criteria above
- Provider consult submitted for CCHT; In some cases this is driven by policy/protocol
- Plan of care developed by the Care Coordinator and the Veteran in conjunction with goals & targets already identified by provider



Example: Target Population

- ▶ Veterans living in Puerto Rico and US Virgin Islands with:
 - DM Hgb A₁C levels \geq 8%
 - Congestive Heart Failure (CHF)
 - Frequent Emergency Room visits
 - High-cost/high-user
 - SCI patients with DM diagnosis
 - Chronic Conditions living in Rural Areas



Care Coordinators

- Monitor data daily submitted by patients using devices
- Triage data from vital signs, reported symptoms, question responses
- Contact patients with high risk responses, significant changes in condition or data elements received
- Identify and intervene for potential exacerbations or complications to facilitate:
 - Just In Time care in clinic, ED/urgent care, community
 - Provider directed interventions such as medication management
 - Protocol-based interventions
 - Self Management Education



Responses on Wednesday, July 23, 2003

Patient	Response Time	Symptoms	Behavior	Knowledge	General
<input checked="" type="radio"/> Patel, Krishna	02:58 PM PDT	High	High	High	None
<input checked="" type="radio"/> Chamura, Mark	09:38 AM PDT	High	High	Medium	None
<input checked="" type="radio"/> Lake, John F.	03:07 PM PDT	High	Medium	Medium	None
<input checked="" type="radio"/> McAllister, Troy	01:09 PM PDT	High	Medium	High	None
<input checked="" type="radio"/> Romeo, Julie R.	10:43 AM PDT	High	Medium	Medium	None
<input checked="" type="radio"/> Zimman, Mary M.	05:14 AM PDT	High	Medium	Medium	None
<input type="radio"/> Schmidt, Anna	02:17 AM PDT	Low	High	Medium	None
<input type="radio"/> Fish, John F.	11:46 PM PDT	Medium	Medium	Low	None
<input checked="" type="radio"/> Flock, Kimberly	06:19 PM PDT	Medium	Low	Medium	None
<input type="radio"/> Garden, Herb E.	03:20 AM PDT	Medium	Low	Medium	None
<input type="radio"/> Kawehara, Aolani	12:55 AM PDT	Medium	Low	Medium	None
<input type="radio"/> Smith, Anna N.	07:22 PM PDT	Medium	Low	Medium	None
<input type="radio"/> Soprano, Michael J.	05:29 PM PDT	Medium	Low	Medium	None
<input type="radio"/> Rubenstein, David	01:02 AM PDT	Medium	Low	Medium	None
<input type="radio"/> Kawehara, Aolani	08:31 AM PDT	Medium	Low	Low	None
<input type="radio"/> Chen, Ying	06:36 PM PDT	Medium	Medium	Medium	None
<input type="radio"/> Linton, Lloyd L.	03:00 PM PDT	Medium	Medium	Medium	None
<input type="radio"/> Nguyen, Thanh	02:57 PM PDT	Medium	Medium	Medium	None
<input type="radio"/> Parish, Jason M.	03:00 PM PDT	Medium	Medium	Low	None
<input type="radio"/> Chen, Angela	09:38 AM PDT	Medium	Low	Medium	None
<input type="radio"/> Garcia, Jose	03:07 PM PDT	Low	Medium	Medium	None
<input type="radio"/> Jones, Barbara	01:09 PM PDT	Low	Medium	Medium	None
<input type="radio"/> LeSur, Vincent A.	10:43 AM PDT	Low	Medium	Medium	None
<input type="radio"/> Rodriguez, Francisco L.	05:14 AM PDT	Low	Medium	Medium	None
<input type="radio"/> Smith, Elle	02:17 AM PDT	Low	Medium	Medium	None
<input type="radio"/> Spencer, Sharleen A.	11:46 PM PDT	Low	Medium	Medium	None

Referrals by Medical Providers or Interdisciplinary Team Members

Telehealth

Screening for Eligibility Criteria

No

Patient does not meet enrollment criteria

Yes

Enrollment Process

Initiation of Care

Daily Tracking Process by Telehealth Technology

Care Coordination
Case Management
Telephone
Technology
Mail

Continues communication with Primary Provider, consult interdisciplinary team according to patient needs

Patient Education
Medication Compliance
Diet Compliance
Physical Activity
Healthy Lifestyle

Re-evaluation

Continued need for CCHT Management

Compliance

Maintenance

Non Compliance

Goals met

Discharge

CCHT Patient Management Process

CCHT

Technology and Informatics

- Messaging devices, video monitoring, video phones, peripheral 'vital signs' devices– all primarily POTS based currently
- Disease Management Protocols (DMPs) utilized on messaging devices
- Data submitted by patients through devices stored on vendor servers behind the VA firewall and accessed daily on VA desktop computers by Care Coordinators
- VistA Integration in process for selected data to transfer via HL7 messaging



In Home Telehealth Technologies



EXPECTED OUTCOMES

- ▶ Increased access and patient satisfaction
- ▶ Enhanced functional status and quality of life
- ▶ Increased Provider and CCHT staff satisfaction
- ▶ Reduced admissions and bed days of care
- ▶ Reduced clinic and ED visits
- ▶ Reduced nursing home admission rates
- ▶ Reduced overall costs for Veterans with history of frequent admissions and unscheduled clinic visits.



Care Coordination/Home Telehealth: The Systematic Implementation of Health Informatics, Home Telehealth, and Disease Management to Support the Care of Veteran Patients with Chronic Conditions

Adam Darkins, M.D., Patricia Ryan, R.N., M.S., Rita Kobb, M.N., A.P.R.N., Linda Foster, M.S.N., R.N., Ellen Edmonson, R.N., M.P.H., Bonnie Wakefield, Ph.D., R.N., and Anne E. Lancaster, B.Sc.

Department of Veterans Affairs, Office of Care Coordination Services, Washington, D.C.

Abstract

Between July 2003 and December 2007, the Veterans Health Administration (VHA) introduced a national home telehealth program, Care Coordination/Home Telehealth (CCHT). Its purpose was to coordinate the care of veteran patients with chronic conditions and avoid their unnecessary admission to long-term institutional care.

meet standardized clinical, technology, and managerial requirements. VHA has trained 5,000 staff to provide CCHT. Routine analysis of data obtained for quality and performance purposes from a cohort of 10,000 CCHT patients shows the benefits of a 25% reduction in number of bed days of care, 19% reduction in numbers of hospital admissions, and mean satisfaction score rating of 86% after enrollment into the program. The cost of CCHT is \$1,600 per patient per annum, substantially less than other NIC programs and nursing home care. VHA's experience is that an enterprise-wide home telehealth implementation is an appropriate and cost-effective way of managing chronic care patients in both urban and rural settings.

Key words: home telehealth, chronic care, outcomes, patient satisfaction, veterans

Reductions in Utilization by Condition Monitored

- ▶ National quarterly CCHT Score Card includes data per VISN on census, NIC ADC, categories of care, utilization, performance measure and monitors, patient satisfaction, VR-12 summary data and other data elements.
- ▶ Outcomes published 12/08:
 - Diabetes – 8,954 pts nationally / utilization ↓20.4%
 - Reduction of BDOC = ↓47%
 - Patient satisfaction = 85%



Reductions in Utilization by Condition Monitored

Condition	Number Of Patients	%Reduction
• Diabetes	8,954	20.4%
• HTN	7,477	30.3%
• CHF	4,089	25.9%
• COPD	1,963	20.7%
• Depression	337	56.4%
• PTSD	129	45.1%
• Other mental health	653	40.9%
• Single condition	10,885	24.8%
• Multiple conditions	6,140	26.0%

Darkins A, Ryan P, Kobb R, Foster L, Edmonson E, Wakefield B, Lancaster B. Care coordination/home telehealth: The systematic implementation of health informatics, home telehealth, and disease management to support the care of veterans with chronic conditions. Telemed J E Health 2008;14:10, 1118-1125



Telehealth Research

Using Telehealth to Improve Access & Patient Centered Outcomes

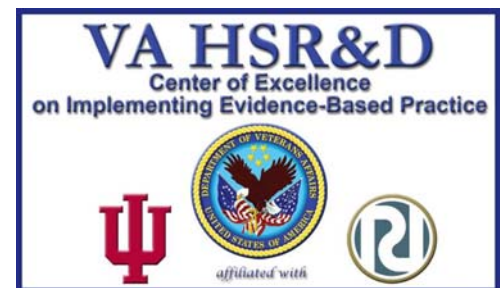
Neale R. Chumbler, Ph.D.

VA HSR&D Center of Excellence for Implementing Evidence-based Practice, Indianapolis VAMC;
Department of Sociology, Indiana University
School of Liberal Arts



CCHT and Diabetes

- Patients with diabetes enrolled in VA CCHT program at 4 VAMCs in a Southeast VISN
- Rigorous quasi-experimental design that used propensity scores to compensate for differences between CCHT program and comparison group
 - 1. Diabetes patients enrolled in VA CCHT & prospectively followed (n=387).
 - 2. Comparison group --- Matched comparison group (n = 387).



CCHT, Diabetes & Outcomes

- ▶ Unless closely monitored, diabetes can be associated with serious complications, including mortality & increased preventable service visits.
- ▶ 1) HRQL---Improvement @ 12 months
 - SF 36V---Physical functioning; bodily pain; social functioning
- ▶ 2) Hospitalizations @ 24 mos.
 - Significant reductions (by 25%, $p = .02$)

CCHT --- Reduction in Mortality

- ▶ Followed cohort over 4 years
- ▶ Quasi-experimental design
 - More deaths in control group (n = 102, 26%) vs. CCHT group (n = 75, 19%, p = .02).
 - Multivariate Analyses
 - Controlled for demographic and clinical variables
 - CCHT group --- Reduced 4-year all-cause mortality (HR = 0.7, 95% CI, .5-.9, p = .01)

Preventable Hospitalization Use

- Patients with diabetes are 2 to 5 times more likely to be admitted for inpatient care than patients without diabetes
- Many studies found that hospitalizations for ambulatory care sensitive conditions (ACSCs) could be prevented if timely and appropriate care were accessible to patients
 - We applied AHRQ's Preventable Quality Indicators (PQIs) to VA national databases to calculate preventable hospitalization use
- PQIs set of measures used with hospital inpatient data to identify 14 categories of ACSCs (e.g., asthma; uncontrolled diabetes; urinary infection)

Preventable Hospitalization Use

- ▶ **Primary Research Question: Is the CCHT program for diabetes associated with less preventable hospital use during 4 year follow-up**
- ▶ **During initial 18 months of follow-up, CCHT enrollees with diabetes were less likely to be admitted for a preventable hospitalization (after adjusting for demographic and clinical characteristics)**
- ▶ **Over the 4-year period, control group patients had significantly higher frequency of diabetes long-term complications, lower limb amputation, and uncontrolled diabetes**

Preventable Hospitalization Use

- ▶ First study to assess specific types of inpatient utilization that were potentially preventable
- ▶ Illustrates the accessibility benefits of telehealth service as an attempt to offer timely and essential monitoring of patients

Summary of CCHT Diabetes Findings

- ▶ Substantiates the importance of having a nurse use home messaging device to manage diabetes symptoms and conditions in a preventative manner, necessitating more advanced interventions

Studies Cited

- ▶ Barnett, TE., Chumbler NR, Vogel WB, Beyth RJ, Qin H, & Kobb R. 2006. The effectiveness of a care coordination/home-telehealth program for veterans with diabetes: A two-year follow-up. *The American Journal of Managed Care* 12(8):467-474.
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- ▶ Chumbler NR, Haggstrom DH, Saleem, J. Implementation of health information technology in VHA to support transformational change: Telehealth and personal health records. 2010. Apr. 23. [Epub ahead of print]. *Medical Care*.


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- ▶ Chumbler, NR, Neugaard B, Ryan P, Kobb R, Qin H, & Joo Y. 2005. "Assessment of health services utilization and health-related quality of life in veterans with Diabetes enrolled in a VHA Community-Care Coordination Service program." *Evaluation and the Health Professions* 28:464-478.
- ▶ Jia H, Chuang H, Wu SS, Wang X, Chumbler NR. 2009. Long-term impact of home telehealth service on preventable hospitalization use. *Journal of Rehabilitation Research and Development* 46(5):557-66.

Implementing CCHT–TMH to Improve Self–management and Clinical Outcomes for Veterans with Chronic Mental Health Conditions

Dana J. Cervone, APRN, PMHNP-BC
VACT Healthcare System
May 12th, 2010

VACT Telemental Health Program Goals

- ▶ Assist the MH Clinician in managing the complex veteran (High Risk, High Use, High Cost)
 - ▶ Provide Cost Effective Interdisciplinary team care approach
 - ▶ Reduce/Prevent relapse/decompensation
 - ▶ Reduce need for future acute hospitalizations
 - ▶ Reduce ED presentations or unscheduled visits to Primary Psych Clinician
 - ▶ Encourage increased self-management for Veterans with Chronic Mental Illness
- 

Criteria for Enrollment...

Inclusions


- Referral from MH Clinician
- Primary Psychiatric Dx. (Depression, Substance Abuse, PTSD, Schizophrenia, Bipolar)
- Housing with phone line (cellular / computer access)
- Psychiatrically stable enough for enrollment

Exclusions

- Unable to use basic technology
- Declined by patient
- Deemed to be clinically inappropriate by the MH Provider or Treatment Team and the Care Coordinator

Considerations for Referral:

High Use, High Risk, High Cost

- Number and duration of admissions to inpatient unit in last year
 - Number of presentations to PER in last year
 - Multiple self harm attempts/gestures
 - History of multiple unscheduled clinic visits or no-shows in the last year
- 


Finding that First Referral....

▶ Become Visible and Available to Mental Health Staff in your Facility



- Attend All Psychiatric Staff Meetings
- Disposition Planning meetings on Inpatient Unit
- Morning rounds in Psychiatric Emergency Room
- Transition meetings from Day Programs

Home Telemental Health at VACT

- ▶ Current average daily census of 96 with 94.8% meeting NIC-A criteria (Exceeding Performance Measure at 106.67%)
 - ▶ Increased Efficiency resulting in an increased caseload from 90–92 veterans in 2008 to 95–103 in 2009.
 - ▶ Provider satisfaction at 100% in 2009, up from 70% the preceding year.
- 

Outcomes / Psychiatric ED Visits

- ▶ We reviewed 76 Veterans in the CCHT–TMH program. ED Visits in Psychiatry ED WHAV decreased after the patient was enrolled in the CCHT–TMH program.
- ▶ 62% or 47 ED visits were reported 6 months prior to enrollment
- ▶ Only 27% or 16 ED visits were reported 6 months after enrollment.

Outcomes/Inpatient Psych Unit

- ▶ We reviewed 76 Veterans in the CCHT-TMH program.
- ▶ Admissions in 1-8WPSY decreased after the patient was enrolled in the CCHT-TMH program.
- ▶ 55% or 42 admissions were reported 6 months prior to enrollment
- ▶ 8% or 6 admissions were reported 6 months after enrollment.

Readmission Rates

30 Day Readmission Rate for (V01)
(689) VA Connecticut HCS, CT,
Acute Psych (Fiscal Year in All
Dates)

30 Day Readmission Rate

FY 2008 28.73%

FY 2009 28.03%

30 Day Readmission Rate for
Veterans involved in Telemental
Health Program

Admissions pre-TMH (36)

Admissions 30 days
post-TMH (2)

Readmission Rate is 5.6%

Care Coordination

Putting the pieces together

Store and Forward
Providers & Technology:
Connecting with Veterans

Clinical Video Telehealth:
Videoconferencing Veterans
in their Community

Home Telehealth
Daily Monitoring of
Veterans at Home

The Right Care, at the Right Place, at the Right Time.