The Coleman Care Transitions Intervention (CTI) Program, based on the work of Eric Coleman, M.D., M.P.H., from the University of Colorado, is a four-week low intensity program that teaches patients to take a more active role in their health care. Patients learn to use specific tools and skills that are reinforced by a “transition coach” who tracks patients across settings for the first four weeks after leaving the hospital.

The program focuses on the following components:

- Medication self-management,
- Use of a patient-centered health record that helps guide patients through the care process,
- Primary care provider and specialist follow-up,
- Patient understanding of "red flag" indicators of worsening conditions and appropriate next steps.

The role of the transition coach is “to coach and teach, not to “do”, so that patients develop improved capacity in these four domains. In addition to helping patients increase their confidence in managing their health care, CTI was designed to help patients avoid repeat hospitalizations and potentially unnecessary institutionalization. Additionally, the model provides a framework for encouraging larger system transformations, including improved clinical practice and cost savings due to reductions in hospital readmissions.

In a randomized controlled trial, the use of CTI resulted in lower hospital re-admission rates. On average, for every 17 patients who work with a transition coach, one re-hospitalization will be prevented. Researchers estimate that for every 350 patients who receive the intervention, hospital costs will be reduced by approximately $300,000. In addition, people who have used the care transitions model rate their hospital discharge experience as very good or excellent.

(Archives of Internal Medicine, September 2006)
"Real World” Results
In clinical trials, the CTI program results were as follows:

John Muir Physician Network in California: Reduced 30 day readmissions from 11.7% to 6.1% and 180 day re-admission rates from 32.8% to 18.9%

Health East in Minnesota: Demonstrated reduced 30-day readmission rate from 11.7% vs. 7.2%

Course Hospital in New York: Reduced 30-day readmission rate for heart failure to 9.7%, and average number of days to readmission increased from 86 to 175.

The CTI program is designed to encourage older patients and their caregivers to play a more active role during care transitions from inpatient care such as hospitals or other medical facilities.

The model assumes that in most cases, patients and families will serve as Care Coordinators for discharged patients. Although patients and families may be willing and able to act in this capacity, many do not know what to expect or are not prepared, meaning that they lack the tools and knowledge needed to be most effective.

Many older patients who are discharged are inadequately prepared for the next setting. Many older patients receive conflicting advice for illness management or are unable to reach the right practitioners for follow up treatment or services; and many are required to complete tasks left undone by health professionals. The CTI is a low-cost, low-intensity program that allows patients and family caregivers to continue care by providing:

- One home visit and three phone calls over 30 days;
- A transition coach is assigned to work with the patient and the family members. The coach is the vehicle through which patients build the skills and confidence and are provided essential tools to support self-care;

Key Findings in the Care Transitions Intervention Program

Care Transitions Intervention Summary of National Key Findings:

- Significant reduction in 30-day hospital readmits (time period in which Transition Coach involved)
- Significant reduction in 90-day and 180-day readmits (sustained effect of coaching)
- Net cost savings of $300,000 in avoided re-hospitalizations for 350 patients per each 12 month period
- Adopted by over 500 leading health care organizations in 36 states
In January, 2010, the Riverside County Office on Aging, in collaboration with the Riverside County Regional Medical Center (RCRMC) enhanced the established Hospital Liaison Program in the Aging and Disability Resource Connection (ADRC) pilot, by adding the evidence-based CTI program.

Similar to the model, the Riverside County CTI program empowers and engages patients to take an active role in managing their chronic disease and improving their overall health condition. In addition, the Riverside County program links patients to critical community services and supports beyond those offered by the original CTI model program.

The Riverside County Office on Aging program provides a hospital liaison social worker who helps older adults discharged from the hospital transition to their home environment. The social worker is located at the acute care hospitals and skilled nursing facilities and actively partners with institutionally based health care professionals to address the multi-faceted older patients’ return home after an acute care admission. They collaboratively participate in the discharge planning process with the goal of building a more comprehensive safety net of coordinated care services post-discharge.

The program utilizes four CTI Pillars (preventative measures):

- Medication self-management,
- Use of a dynamic patient-centered record (the Personal Health Record),
- Scheduling timely primary care/special follow-up appointments,
- Knowledge of red flags that indicate a worsening in their condition and how to respond.

The goal of the program is to reduce Riverside County’s re-admission rates among patients with chronic illnesses into the hospital for preventable causes.

Patients seen in 2010 initial pilot program had the following diagnoses:

- Respiratory/Pulmonary: 11.4%
- Cardiovascular: 48.9%
- Endocrine/Diabetes: 18.2%
- Cancer: 4.5%
- Orthopedic: 4.5%
- Other: 12.5%

The program enrolled 127 patients.

Of those enrolled:

- Patients Completed: 89
- Patients Dropped: 38
Referral to long-term care services in the Riverside County CTI Program include:

- Home delivered meals
- Case management
- Nutrition services
- Nutrition counseling
- Caregiver support
- Personal care
- Homemaker/chore services
- Transportation
- Department of Mental Health resources

Riverside County Initial CTI Results

For the initial pilot program period of January through December of 2010, patients who completed CTI at RCRMC had a 30 day readmission rate of 15.73%, compared to the overall Medicare 30 day readmission rate for RCRMC at 20.6% for a period beginning June 2010 and ending March 2011.

The total cost of the CTI program for the period of August 2010 through June 2011 was $157,557, compared to the cost of potential RCRMC hospital readmissions.
The Riverside County Office on Aging Hospital Liaison/CTI program now includes the Desert Regional Medical Center. The Directors of the Desert Healthcare District approved a $40,000 grant award, to be matched by the Desert Regional Medical Center, to support a social work position at that hospital. In addition, OoA contracted with the Inland Empire Health Plan (IEHP) to assist IEHP in starting a care transitions program at Riverside Community Hospital.

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The Riverside County CTI program has been recognized by the Administration on Aging (AoA) for its best practices, and featured in the AoA’s Care Transitions Toolkit for:

- Offering guidance on the importance of careful program staffing
- Samples of the hospital liaison chart letter
- Consumer pre/post transition surveys

CTI Results Continued:

Between Jan 2012 and March 2012, over 423 individuals were assisted with hospital discharge following an acute care episode.

Of those 423 individuals, 165 completed the CTI program during this period. Results for those individuals who completed the program between 2011 and 2012 are as follows:

Riverside County CTI Readmission Results (2011 to 2012)

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“Transitional care programs can be implemented in ways that do not increase overall public spending.”
CTI Case: Client with MRSA

A 45 year old male client was diagnosed with a MRSA (Methicillin-resistant Staphylococcus aureus) infection, a highly contagious condition that is resistant to most antibiotics.

Upon his discharge, a CTI Coach conducted a home visit. A comprehensive medication list was made, reconciling those medications he was given by the hospital pharmacy, with those on his discharge instructions.

The CTI Coach observed that the client did not come home from the hospital with a specific medication — a very important antibiotic used to treat MRSA infections. The CTI Coach made a call to the social worker at the hospital who had drafted the client’s discharge plan to clarify the omission. The hospital social worker was quickly able to contact the patient’s physician, and expedite obtaining an order through the pharmacy for the needed medication, which the patient’s wife was able to pick up immediately.

Without the Care Transitions Intervention team, this medication error might have gone unnoticed, leaving the client without critical medication, which endangered him and his family.

CTI Client Success Story

A client had been seeing a pain management specialist in the Los Angeles area for years following several unsuccessful back surgeries, and continued to see this specialist after moving to Riverside County. He was hospitalized at Riverside County Regional Medical Center for pneumonia and was enrolled in CTI while hospitalized. Since he did not have a primary care physician in the area, he was assigned a physician at the RCRMC clinic for follow up after his discharge.

At the first CTI home visit, the client gathered all of his medications together and wrote them in his Personal Health Record in preparation for his upcoming doctor’s appointment. He did not have any questions about his medications during the home visit, stating that he understood his medications and was taking them correctly.

However, when he took his medication list to the doctor’s appointment, he discovered that he had been taking duplicate medications for pain and was not taking an antibiotic that had been prescribed. On the follow up phone call with his CTI Coach, he stated that he had been tired since getting home from the hospital due to the medication mismanagement, but was now able to be more active and was taking his medications appropriately.

The client decided to stop seeing the pain specialist in Los Angeles and do all of his follow up with one doctor in Moreno Valley, so this problem would not happen again. As a result of the CTI program, the client now enjoys increased interaction with his new local primary care physician, comes prepared to all appointments with questions and seeks clarification from the doctor.
Guiding a CTI Client Through the Recovery Process

CTI ENROLLMENT: A 58 year old male was admitted for treatment of a blocked carotid artery. The CTI Coach presented the CTI program to him and his wife in the hospital, they agreed to participate and his consent was obtained. He stated that he had never taken medication, and was overwhelmed with having to take more than a few pills. He was not yet sure what medication he would be discharged with. His Personal Health Record (PHR) was reviewed and discussed, and the CTI Coach emphasized the importance of taking it to his follow up appointments. He saw the wisdom in taking an active part in his doctor’s appointments—something he had never done before. The client was discharged shortly after CTI Coach left his room.

HOME VISIT: Two days later, the CTI coach visited the client at home. He had his PHR, medications, and hospital discharge instructions available when the CTI Coach arrived. The medication list was reviewed and compared with the bottles he filled and the patient’s medication questions were answered. The CTI Coach helped the client draft questions for his physician. The CTI Coach also assisted the client in identifying any “red flags” that might be areas of concern as he recovered, including his incision site. His recovery goals included changing his diet, taking his medication, and avoiding re-hospitalization.

14 DAY PHONE CALL / CTI COMPLETED: Fourteen days after discharge, the CTI Coach phoned the client for the final time. The client continued to be highly motivated to improve his health. He was eating healthy foods and exercising daily. He continued to take his PHR to follow up appointments, and had not had any difficulty with refilling prescriptions. His next surgery had not been scheduled but his CTI Coach provided encouragement reminded the client that he now had all of the tools he needed to continue to manage his own health care, and explained that he was welcome to call his CTI Coach in the future, if needed. A few weeks later, CTI Coach saw the client at the hospital. He was very positive, upbeat, and ready to face his upcoming surgery.

2 DAY PHONE CALL: Two days after discharge, the CTI Coach called the client at home and he reported being very tired, and frustrated that he is not able to walk around the block like he used to. His discharge instructions were reviewed. He noted that he was supposed to have two follow up appointments with his doctor the following week and the CTI Coach encouraged him to make those appointments as soon as possible and to use a medication organizer to dispense his medications.

7 DAY PHONE CALL: Seven days after discharge, the CTI Coach phoned the client. The client stated that he was feeling much better, had been maintaining his healthy diet and was walking about ½ a block daily. He had taken his PHR to his follow up appointment with his physician. His physician was very impressed with the orderly way in which he was keeping all of his records and the client was able to get answers to his questions. He learned during his last visit to his doctor that he would be scheduled for additional surgery, which discouraged him, but the CTI Coach reminded him that he would be able to go into this next surgery more prepared, knowing what to expect post surgery.
“Cecelia” is a 69 year old, single woman, living alone in a studio apartment in Desert Hot Springs. She is legally blind as a result of the diabetes, and has a history of strokes and falls. She was admitted to Desert Regional Medical Center for treatment of a diabetic foot wound and readmitted 9 days later following a stroke at home. She was met at the hospital bedside by the Aging and Disability Resource Connection (ADRC) Hospital Liaison, where the care transitions Program was explained to her. She was very interested in learning strategies to avoid readmission and was enrolled. Cecelia was discharged from the hospital 10 days later, and seen at home by the CTI Coach 3 days after her discharge.

At the home visit, the four pillars of CTI—medication management, knowledge of red flags, medical care follow up, and use of a Personal Health Record (PHR) were explored. Although legally blind, she had a good system for taking her medications, and compensated well for her poor vision with an excellent memory of medication doses, upcoming appointments, and red flags to monitor in managing her care at home. Her personal health goal was to increase her activity level to avoid weight gain, which would complicate her diabetes.

While at the home visit, the CTI Coach noted that she had other issues that needed long term case management, including caregiver assistance for chores and personal care, grocery shopping, running errands, home safety medical equipment and transportation to follow up medical appointments. The array of ADRC programs was explained to her, and she agreed to be referred. The CTI Coach completed the referral on her behalf with the ADRC.

At the follow up call a week later, the CTI Coach learned that Cecelia had reviewed her PHR with her primary care physician and as a result he had modified her medications. Her friend, who accompanied her to this appointment, made the changes in her PHR and then made the necessary changes to Cecelia’s medication management system at home. She also spoke with her doctor about her goal of increasing her activity level, which he approved.

At the final CTI phone call 12 days later, Cecelia explained that she and her friend were now walking a few times a week. She had not experienced any red flags, and was continuing to take her medications daily. CTI Coach praised her progress in reaching her goal and for incorporating the four pillars of CTI into her care at home. Although the CTI process was complete, she was reminded that a social worker from the ADRC would be contacting her for ongoing case management to address the other needs identified.

Two weeks later, she was enrolled in the Multipurpose Senior Services Program (MSSP) with Office on Aging. A Care Plan was developed to address her needs. With the MSSP social worker’s assistance she began receiving home delivered meals, transportation to medical appointments, home safety equipment, a talking clock and glucometer, an emergency response system, a Medic Alert bracelet, an emergency disaster kit, an adaptive telephone via CTAP, and a caregiver for chore and personal care. Celia continues to enjoy being a part of the MSSP today. She has integrated the use of her PHR and the skills she learned with CTI into her life, and has avoided a readmission to the hospital for the past 11 months.