

Care Coordination: A Review of Definitions and Key Factors of Relevance to the Integrated Care

Introduction

Care coordination is the core focus of Connecticut's Integrated Care Demonstration, which seeks to integrate care for Medicare-Medicaid Enrollees (MMEs) via two models – Enhanced Administrative Service Organizations (ASOs; Model 1) and Health Neighborhoods (HNs; Model 2). This paper provides a brief overview of care coordination, reviews of its effectiveness, and key factors in programs' successes. Definitions and components of care coordination programs have varied widely. Reviews of the care coordination literature have found mixed results on its effectiveness. However, some research has also identified care coordination best practices, which can inform the development of both models in the Demonstration.

Definition of Care Coordination

The wide variation in definitions and programmatic components of care coordination to date presents a challenge in developing evidence-based care coordination programs. One systematic review noted the existence of over 40 varying definitions of the term (McDonald et al 2007). The definition proposed by the National Coalition on Care Coordination (N3C) is:

“Care coordination” is a client-centered, assessment-based interdisciplinary approach to integrating health care and social support services in which an individual’s needs and preferences are assessed, a comprehensive care plan is developed, and services are managed and monitored by an identified care coordinator following evidence-based standards of care. (Brown 2009)

Another review, also noting the lack of consistency of definitions and components of care coordination programs, developed a conceptual model (Au et al 2011), presented in the figures in Appendix A. Person-centeredness, which is at the core of care coordination, is defined in Appendix B. The definition was developed by stakeholders in consultation with existing definitions for purposes of the demonstration.

Additionally, care coordination programs have varied along many dimensions, including population served, components involved, and the intensity of interventions (Au et al 2011). Due to the breadth of literature on care coordination, this paper will focus on care coordination in which interventions had more commonalities with the Demonstration – for example, aimed to integrate care across multiple sites, and/or focused on populations similar to those served under the Demonstration (e.g. MMEs, individuals with disabilities).

Effectiveness of Care Coordination

Studies examining the impact of care coordination on outcomes such as quality of care, experience of care, and cost have found mixed results. While some programs and studies have shown promising results (Brown 2009, Volland and Wright 2011), there are fewer large and rigorously designed programs that allow systematic evaluation and the ability to generalize to other settings (Au et al 2011). Evaluation of the 15 programs in the Medicare Coordinated Care Demonstration found modest effects of a few programs (Peikes et al 2009), though some of the programs were successful in reducing hospital admissions for particular high-risk populations over six years – and those particular programs were cost neutral (Brown et al 2012).

Key effective factors and components of care coordination

While many care coordination programs have not been designed in a way that allows for assessment of which component(s) most favorably impact outcomes, some key factors emerge from the literature and can inform the design of the Integrated Care Demonstration.

1. Care coordination format and intensity:

- a. Face-to-face contact: Frequent face-to-face contact between member and care coordinator has been a common feature in some successful programs (Brown et al 2012 - “frequent” defined as about 1 or more times per month; Volland and Wright 2011). In fact, one of the programs increased its effectiveness after it was redesigned to include more face-to-face contact and locally-based care coordinators (Peikes et al 2012).
- b. Integration with and communication between providers: Care coordinators’ close contact and integration with other care providers has been a common feature of successful programs for adults with disabilities (Au et al 2011) and Medicare beneficiaries (Brown et al 2012).
- c. Member to care coordinator ratios: The number of members per care coordinator must account for a wide variety of factors, such as intensity of members’ needs and care coordination format and activities (CMSA / NASW 2008); however, there is little information about the “optimal” effective ratio. In the Medicare Coordinated Care Demonstration, 11 of 15 programs had between about 40 to 90 members per coordinator, and the remainder had over 100 per coordinator (Brown et al 2008). The member to coordinator ratio is not discussed as a common factor impacting program success in the most recent program evaluation (Brown et al 2012).
- d. Nature of assessment: Assessments of members should be comprehensive in evaluating a broad spectrum of needs (e.g., health and social services) and include items that are common across settings when possible and specialized when needed in order to be reliable for use in diverse care settings (Hirdes et al 2008). Members and their family caregivers and other support persons must be central in the needs assessment and planning processes, and care coordinators should also attend to caregivers’ competencies and needs for support as a key component of a member’s care (Reinhard et al 2008). While involvement of legal guardians or conservators can be fundamental for care coordination, it is important that the member and his/her needs and preferences remain central in the process. Additionally, care coordinator training in and use of behavior change techniques and motivational interviewing can contribute to programs’ success (Brown et al 2012).

- 2. Electronic Health Records (EHRs) and communication of information:** Electronic Health Records (EHRs) and Health Information Exchange(HIE) have been widely recognized as playing a crucial role in care coordination and provision of appropriate services. While the general increase in access to clinical information across providers is important for coordinating care, some studies of care coordination have focused on specific helpful roles of data feedback and communication across providers. In particular, care coordinators’ access to information about medications from sources in addition to the member, timely notification of hospitalizations and emergency department use, and access to members’ discharge instructions can be important components of care coordination (Brown et al 2012).

3. Member education and self-management: Self-management support focuses on helping members to become more actively involved in their care, and includes information sharing and working with members and caregivers regarding making informed decisions and self-motivation (Schraeder et al 2011). The overall evidence suggests that self-management improves health-related behaviors, providing information is necessary but not sufficient to improve behaviors, and goal setting and motivational interviewing can be successful with older adults (Schraeder et al 2011). However, factors such as limitations in health literacy and cognitive impairment greatly contribute to difficulty in self-management, and therefore assessing such factors is crucial for care coordination.

4. Focusing on transitions between care settings: Particular focus on times of transition between care settings and prevention of avoidable use of care settings that are more restrictive, acute, and/or costly can be particularly important components of care coordination.

Many programs have focused on post-hospitalization care, and care coordination focused on discharge planning and follow-up after hospitalizations can be effective in reducing readmissions (Naylor et al 2004). Key components of this can include care coordinators receiving timely information about hospitalization and discharge plans, communicating with hospital staff, developing a transition plan, contacting members after hospitalizations, and ensuring that appropriate follow-up has been received (Brown et al 2012).

Additionally, some programs have successfully focused on provision of long-term services and supports, coordinated with medical care and a member's physician, in supporting members to stay at home and avoid nursing home admission (Volland and Wright 2011). Interventions providing, at a minimum, personalized assessment and linkages with necessary health and social services, can help people who are elderly avoid falls and nursing home admissions (Beswick et al 2008).

5. Medication therapy management: Care can be greatly improved by systematically analyzing an individual's medications, identifying any problems (for example, with safety, adherence, and/or need for a different drug), and working to resolve them. In particular, involving pharmacists, utilizing face-to-face communication, closely communicating with the care provider, and incorporating data from EHRs, self-report, and claims can be important and cost-effective components of medication management (Smith et al 2011).

6. Tailoring care coordination to specific populations: Within the MME population, some may be more likely to benefit from care coordination, especially coordination that is attentive to the individual's barriers to care and ability to process information.

Given that 37% of MMEs in Connecticut have a severe mental illness (SMI) (Analysis by JEN Associates 2012), it is important to use and build upon evidence-based practices proven to be effective with this population. Examples of such practices that are already employed in Connecticut include Wellness Recovery Action Planning (WRAP) (Cook et al 2012) and Community Support Programs (CSP) (Barton 1999) (defined in Appendix B). The commonality of these is that the recipient of services is integral; services are designed *with* her/him not *about* her/him.

As further example, those with cognitive impairment are especially vulnerable to problems in systems of care and susceptible to adverse events (such as medication errors), and may require more intensive support in coordinating care (Naylor et al 2007). Additionally, those with Limited English Proficiency require providers' special attention to language barriers and cultural competence. In all cases, thorough assessment of patients' health literacy, needs and barriers to

care, and coordination between the full array of behavioral, medical, and social service providers, is critical in assuring coordinated care.

Conclusion

Care coordination definitions, components, and models have varied across programs, and reviews of effectiveness have found mixed results. However, evidence to support promising practices and commonalities across successful programs have emerged and can inform the development of care coordination models in the Demonstration. While some of the components (such as face-to-face contact) may be more easily incorporated into Health Neighborhoods, other components (such as those informed by claims data) will require support from the Administrative Services Organizations. Both models within the Demonstration will be positioned to leverage and incorporate key evidence-based components of care coordination.

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Annotated Sources

Au M, Simon S, Chen A, Lipson D, Gimm G, and Rich E. Comparative Effectiveness of Care Coordination for Adults with Disabilities. Mathematica Policy Research - Center on Health Care Effectiveness, 2011.

http://www.mathematica-mpr.com/publications/pdfs/health/comparative_care_rsrbrief.pdf

- Widely varying definitions and components of care coordination interventions, as well as lack of specificity in describing key elements, inhibits rigorous evaluation of care coordination programs. Authors develop a conceptual framework of care coordination – see Appendix A
- Systematic review of care coordination interventions focuses on randomized controlled trials and finds mixed results, with little detail on key common elements. Broadly, integrated delivery systems and close integration of the care coordinator with other providers were common features of successful programs.

Barton R. Psychosocial rehabilitation services in community support systems: a review of outcomes and policy recommendations. *Psychiatric Services*. 1999;50:525-

534. <http://www.ncbi.nlm.nih.gov/pubmed/10211735>

- Reviews psychosocial rehabilitation interventions for people with SMI, with a focus on skills training, family psychoeducation, and supported employment. Evidence supports the use of these programs, but continued research is needed to determine effective components and intensity.

Beswick AD, Rees K, Dieppe P, Ayis S, Gooberman-Hill R, Horwood J, and Ebrahim S. Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis. *Lancet*. 2008; 371(9614):725-35.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2262920/>

- Meta-analysis of reviews of “complex interventions”, which provided at least “personalized assessment and provision of or referral for appropriate specialist medical and social care” for adults who were elderly and living in the community. Interventions helped to prevent falls and avoid nursing home care. The settings and content of interventions varied. Intensity (duration, number of scheduled visits, or number of disciplines of health care providers involved) was not associated with effectiveness.

Brown R. The Promise of Care Coordination: An Analysis of Care Coordination Models that Can Reduce Hospitalization and Expenditures Among Medicare Beneficiaries and Improve Quality of Care. National Coalition on Care Coordination (N3C), 2009.

http://socialwork.nyam.org/nsw/care/Brown_Full_Report.pdf

- Reviews and synthesizes evidence on care coordination programs for Medicare beneficiaries, focusing on post-hospitalization transition programs, self-management education programs, and care coordination programs (such as the Medicare Coordinated Care Demonstration) – as well as emerging evidence on the Patient-Centered Medical Home. Discusses implications and issues for ongoing research.

Brown et al – see “*Medicare Coordinated Care Demonstration*”

CMSA / NASW. Case Management Caseload Concept Paper: Proceedings of the Caseload Work Group, a Joint Collaboration of Case Management Society of America (CMSA) and National Association of Social Workers (NASW), 2008. <http://www.cmsa.org/portals/0/pdf/CaseloadCalc.pdf>

- Identifies various factors that should be considered in determining caseloads for case managers, including clinical and non-clinical factors (such as context [regulatory requirements, clinical setting, etc.], member's needs, case management interventions, and desired outcomes)
- Paper cites some examples of particular caseload ratios, but its recommendations and exploration of relevant factors do not detail recommended ratios.

CMSA. Standards of Practice for Case Management. Case Management Society of America, Revised 2010. <http://www.cmsa.org/portals/0/pdf/memberonly/StandardsOfPractice.pdf>

- Discusses standards for case management – including those related to areas such as client selection, assessment, and ethics – and how they can be demonstrated and documented.

Cook JA, Copeland ME, Floyd CB, Jonikas JA, Hamilton MM, Razzano L, Carter TM, Hudson WB, Grey DD, and Boyd S. A Randomized Controlled Trial of Effects of Wellness Recovery Action Planning on Depression, Anxiety, and Recovery. *Psychiatric Services*. 2012; 63(6):541–547.

<http://ps.psychiatryonline.org/article.aspx?volume=63&page=541>

- Discusses evaluation of Wellness Recovery Action Planning (WRAP – see Appendix B for definition), which includes mental illness self-management. WRAP effectively reduced depression and anxiety and positively impacted self-perceived recovery.

Hirdes JP, Ljunggren G, Morris JN, Frijters D, Finne-Soveri H, Gray L, Björkgren M, and Gilgen R. Reliability of the interRAI suite of assessment instruments: a 12-country study of an integrated health information system. *BMC Health Services Research*. 2008, 8:277. <http://www.biomedcentral.com/1472-6963/8/277>

- Discusses development and testing of InterRAI assessment tools (see <http://www.interrai.org/>), for reliability.
- Tools use common assessment across settings when possible, with customization for particular settings when needed (five instruments tested focus on home care, long term care, mental health, palliative care and post-acute care settings).

Lind A and Gore S. From the Beneficiary Perspective: Core Elements to Guide Integrated Care for Dual Eligibles. Center for Health Care Strategies, 2010.

http://www.chcs.org/usr_doc/TCDE_Core_Elements_122010.pdf

- Qualitative discussion of nine core elements that are essential for effective integrated care programs for MMEs, based on CHCS programs. Discusses two members as examples. Elements are: Comprehensive assessment to determine needs; personalized (person-centered) plan of care; multidisciplinary care team; family caregiver involvement; comprehensive provider network; strong home- and community-based options; adequate consumer protections; robust data-sharing and communications system; and financial incentives aligned with integrated, quality care.

McDonald KM, Sundaram V, Bravata DM, et al. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies (Vol. 7: Care Coordination). Rockville (MD): Agency for Healthcare Research and

Quality (US); 2007 Jun. (Technical Reviews, No. 9.7.) 3, Definitions of Care Coordination and Related Terms. <http://www.ncbi.nlm.nih.gov/books/NBK44012/>

- Chapter 3 thoroughly reviews existing care coordination definitions and terms (though note that source is from 2007).

Medicare Coordinated Care Demonstration (MCCD) –The Medicare Coordinated Care Demonstration included 15 care coordination programs for Medicare fee-for-service members. It began in 2002, and programs ran for four or more years. Programs varied in design and population included, though all members had one or more specific target chronic conditions. Additionally, ten of the programs required that beneficiaries had been hospitalized within the year before enrollment; nine of the programs excluded residents of long-term nursing facilities. Members were randomized to intervention and control groups. The following are four of the papers evaluating the MCCD:

1. Brown R, Peikes D, Chen A, and Schore J. 15-site randomized trial of coordinated care in Medicare FFS. *Health Care Financ Rev.* 2008; 0(1):5–25. <http://www4a.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/downloads/08Fallpg5.pdf>
 - Early evaluation of the program including two years of data. While other evaluation papers are more complete, the tables (especially Table 1) in this paper give helpful information about characteristics of the programs and care coordination in the MCCD.
2. Brown R, Peikes D, Peterson G, Schore J, and Razafindrakoto C. Six features of Medicare Coordinated Care Demonstration programs that cut hospital admissions of high-risk patients. *Health Aff (Millwood).* 2012;31(6):1156–66. <http://content.healthaffairs.org/content/31/6/1156.full?ijkey=9KlvNCIzGrp4Q&keytype=ref&siteid=healthaff>
 - Analyzes more years of data than previous papers. Stratifies by high-risk members, using varying methods. Some programs were successful in reducing hospital admissions for high-risk members. None of the programs produced net savings to Medicare once care management fees were included.
 - Discusses 6 features common in successful programs: frequent in-person meetings; occasionally meeting in person with providers; acting as a communications hub for providers; delivering evidence-based education to patients; providing strong medication management; and providing timely and comprehensive transitional care after hospitalizations.
3. Peikes D, Chen A, Schore J, and Brown R. Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries: 15 Randomized Trials. *JAMA.* 2009;301(6):603-618. <http://jama.jamanetwork.com/article.aspx?volume=301&issue=6&page=603>
 - Almost all programs (13/15) had no significant effect on hospitalizations
 - Conclusions in Abstract: “Viable care coordination programs without a strong transitional care component are unlikely to yield net Medicare savings. Programs with substantial in-person contact that target moderate to severe patients can be cost-neutral and improve some aspects of care.”
 - Included in Au et al 2011 review.

4. Peikes D, Peterson G, Brown R, Graff S, and Lynch J. How changes in Washington University's Medicare Coordinated Care Demonstration pilot ultimately achieved savings. *Health Aff (Millwood)*. 2012;31(6):1216–26.

<http://content.healthaffairs.org/content/31/6/1216.full?ikey=IDxxRuhSZIOV.&keytype=ref&siteid=healthaff>

- Describes redesign of Washington University's Demonstration, which was modified to focus on those at greatest risk of hospitalization, include more face-to-face contact, and strengthen hospital transition planning and medication reconciliation. After the changes, the program reduced hospitalizations and costs.

National Quality Forum (NQF), Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination: A Consensus Report, Washington, DC: NQF; 2010.

http://www.qualityforum.org/projects/care_coordination.aspx

- Lists "preferred practice" care coordination consensus standards in a few domains: healthcare home, transitions, information systems, care plan and follow up, communication (between team members, provider, patient)

Naylor MD, Brooten DA, Campbell RL, Maislin G, McCauley KM, and Schwartz JS. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *Journal of the American Geriatrics Society*. May 2004; 52:675-

84. <http://www.cha.com/pdfs/Quality%5CReducing%20Hospital%20Readmissions/Related%20Articles/Transitional%20Care%20of%20Older%20Adults.pdf>

- Evaluates transitional care intervention, which provided discharge planning and home follow up by an advanced practice nurse post-hospitalization for heart failure. The intervention was associated with fewer readmissions, lower costs, and short-term increased quality of life and satisfaction.

Naylor MD, Hirschman KB, Bowles KH, Bixby MB, Konick-McMahan J, Stephens C. Care Coordination for Cognitively Impaired Older Adults and Their Caregivers. *Home Health Care Serv Q*. 2007;26(4):57–

78. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2504359/>

- Discusses care coordination needs in relation to those with cognitive impairment. Discusses the need for improved care in post-hospital transition (the authors' area of work) for this population, and outlines related pilot studies and case studies.

Ouwens M, Wollersheim H, Hermens R, Hulscher M, Grol R. Integrated care programmes for chronically ill patients: a review of systematic reviews. *Int J Qual Health Care*. 2005; 17(2):141–146.

<http://intqhc.oxfordjournals.org/content/17/2/141.full>

- In the 13 systematic reviews evaluated, integrated care programs for those with chronic illnesses varied widely in definitions and content, though programs overall seemed to have positive effects on care quality.
- From abstract: "The most common components of integrated care programmes were self-management support and patient education, often combined with structured clinical follow-up and case management; a multidisciplinary patient care team; multidisciplinary clinical pathways and feedback, reminders, and education for professionals."

Peikes et al – see “*Medicare Coordinated Care Demonstration*”

Reinhard et al. Chapter 14: Supporting Family Caregivers in Providing Care. In Hughes RG (ed.). *Patient safety and quality: An evidence-based handbook for nurses*. (Prepared with support from the Robert Wood Johnson Foundation). AHRQ Publication No. 08-0043. Rockville, MD: Agency for Healthcare Research and Quality; March 2008 http://www.ahrq.gov/qual/nursesfdbk/docs/ReinhardS_FCCA.pdf

- Reviews evidence on roles of family caregivers, focusing on the care of adults who have chronic illnesses. Discusses caregivers as both clients and providers within the healthcare system.

Schraeder C, Shelton P, Fahey L, Jones KL, and Berger C. Overview. in Schraeder C and Shelton P; Editors. *Comprehensive Care Coordination for Chronically Ill Adults*. Wiley-Blackwell, 2011.

- Defines care coordination and summarizes main barriers to comprehensive care coordination for adults who have chronic illnesses,

Smith M, Giuliano MR, Starkowski MP. In Connecticut: improving patient medication management in primary care. *Health Aff.* 2011;30(4):646-54. <http://content.healthaffairs.org/content/30/4/646>

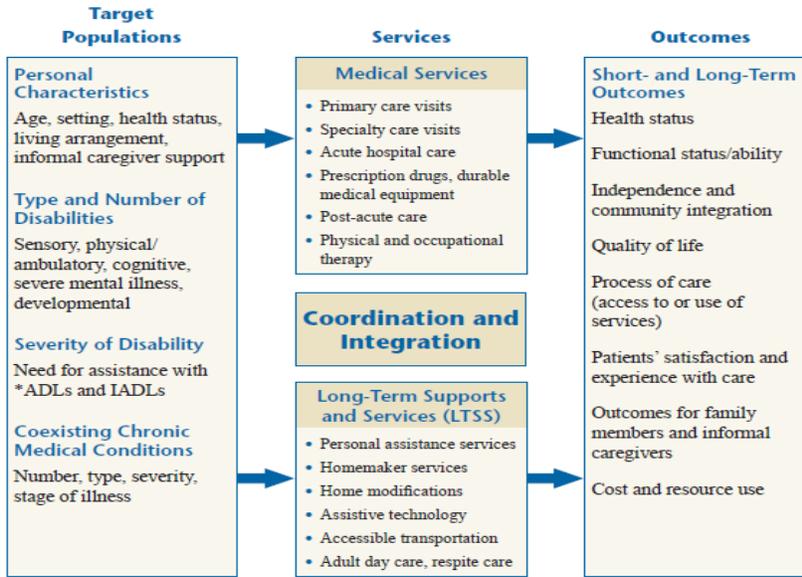
- Discusses the demonstration under Connecticut’s Medicaid Transformation Grant, in which pharmacists worked closely with 88 Medicaid members. Pharmacists met with members and assessed member-reported, claims-based, and electronic health record-based information, then working to resolve drug therapy problems (such as dose effectiveness or safety, members needing an additional drug, or issues with adherence). Pharmacists resolved nearly 80% of over 900 identified problems after 4 encounters.

Volland PJ and Wright ME. Promising practices in integrated care. in Schraeder C and Shelton P; Editors. *Comprehensive Care Coordination for Chronically Ill Adults*. Wiley-Blackwell, 2011.

- Discusses examples and effectiveness of some promising integrated care programs, with variation in degree of integration and focus on primary care (for example, fully integrated models, programs focusing on social support services, patient-centered medical homes, and others). Some common components of models included face-to-face contact, comprehensive initial assessment, team approach, family involvement, and a focus on community-based services.

Appendix A: Conceptual Model of Care Coordination – Au et al 2011

Figure 1. General Framework of Populations, Services, and Outcomes



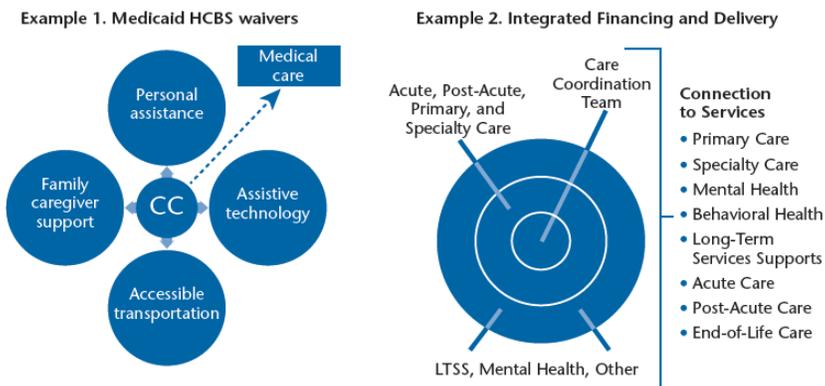
*ADLs = Activities of daily living ; IADLs=Instrumental ADLs

Figure 2. Dimensions and Features of Care Coordination Models



*Home and community-based services

Figure 3. Organization and Financing of Care Coordination



Appendix B: Additional Definitions

Community Support Programs (CSP) consist of mental health and substance abuse rehabilitation services and supports necessary to assist the individual in achieving and maintaining the highest degree of independent functioning. The service utilizes a team approach to provide intensive, rehabilitative community support, crisis intervention, group and individual psycho-education, and skill building for activities of daily living. CSP includes a comprehensive array of rehabilitation services most of which are provided in non-office settings by a mobile team. Services are focused on skill building with a goal of maximizing independence. Community-based treatment enables the team to become intimately familiar with the participant's surroundings, strengths and challenges, and to assist the participant in learning skills applicable to his/her living environment. The team services and interventions are highly individualized and tailored to the needs and preferences of the individual.

(Source: <http://www.ct.gov/dmhas/lib/dmhas/mro/CSP.pdf> . Also see <http://www.ct.gov/dmhas/cwp/view.asp?a=2901&q=335060>)

Person-Centeredness is an approach that:

- provides the MME with needed information, education and support required to make fully informed decisions about his or her care options and, to actively participate in his or her self-care and care planning;
- supports the MME, and any representative(s) whom he or she has chosen, in working together with his or her non-medical, medical and behavioral health providers and care manager(s) to obtain necessary supports and services; and
- reflects care coordination under the direction of and in partnership with the MME and his/her representative(s); that is consistent with his or her personal preferences, choices and strengths; and that is implemented in the most integrated setting.

(Source: developed by stakeholders for purposes of Connecticut's Integrated Care Demonstration, in consultation with existing definitions)

Wellness Recovery Action Plan (WRAP) is a manualized group intervention for adults with mental illness. WRAP guides participants through the process of identifying and understanding their personal wellness resources ("wellness tools") and then helps them develop an individualized plan to use these resources on a daily basis to manage their mental illness. WRAP has the following goals:

- Teach participants how to implement the key concepts of recovery (hope, personal responsibility, education, self-advocacy, and support) in their day-to-day lives
- Help participants organize a list of their wellness tools--activities they can use to help themselves feel better when they are experiencing mental health difficulties and to prevent these difficulties from arising
- Assist each participant in creating an advance directive that guides the involvement of family members or supporters when he or she can no longer take appropriate actions on his or her own behalf
- Help each participant develop an individualized postcrisis plan for use as the mental health difficulty subsides, to promote a return to wellness

(Source: <http://nrepp.samhsa.gov/ViewIntervention.aspx?id=208>. Additional information available at <http://www.mentalhealthrecovery.com/wrap/>)

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