From: Mike Cotton
To: HFS.Webmaster
Subject: Coordinated Care Program Key Policy Issues
Date: Friday, July 01, 2011 10:13:32 AM
Attachments: Meridian Health Plan Coordinated Care RFI Response 7.1.11 Final.pdf
Care Coordination Measures Atlas.pdf

To Whom It May Concern:

Please find attached Meridian Health Plan's response to HFS' request for information regarding P.A. 96-1501. Also find a second attachment sent out by the AHRQ as we reference its usefulness in setting up the program in our response. It was our pleasure to respond to this important request and stand ready to be of any service HFS might need when contemplating how best to operationalize the Medicaid program. Have a great holiday and please do not hesitate to contact me with any comments, questions or concerns.

Best Regards,

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COORDINATED CARE REQUEST FOR INFORMATION

JULY 1, 2011

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The Coordinated Care Program Key Policy Issues

The Medicaid reform law adopted by the Illinois General Assembly in 2011, P.A. 96-1501, mandates that 50 percent of all Illinois Medicaid recipients be in coordinated care by January 1, 2015. (Relevant language from this law is attached to this document.) While outlining a general sense of direction for the Medicaid program, the legislation leaves key operational issues to be determined by the Department of Healthcare and Family Services. This paper helps identify some of the issues and seeks public and stakeholder advice on how to implement coordinated care in Illinois.

Initially we are inviting stakeholders to provide written comment in response to the following specific policy questions. Subsequently, we will hold public hearings to discuss the responses, focusing particularly on those areas where there is no consensus.

Please note that "Medicaid" is used in this document to apply to all State comprehensive medical health programs, including the Children's Health Insurance Program and certain related state-funded programs, as enumerated in the legislation.

Please submit your comments electronically to hfs.webmaster@illinois.gov no later than close of business, July 1. All comments will be posted on the Coordinated Care tab on the HFS website. We will subsequently announce hearings during the summer.

Although the legislation requires at least 50% of all clients to be enrolled in coordinated care by January 1, 2015, there are two important realities that will shape implementation of this policy; and are useful to set the context for the issues in this paper:

- About 45% of our current enrollees live in Chicago, another 14% live in Kane, DuPage, Lake and Will counties; and another 10% in a handful of downstate urban counties. The remaining 30% of our clients are scattered over 87 rural counties. While we believe everyone should have coordinated care, it will be difficult to offer the same delivery systems in the 87 rural counties that we offer in the more densely populated areas. Therefore, it will be practical to focus initially on the higher density areas - possibly enrolling materially more than 50% of the clients in these areas to meet the 50% statewide target.
- The Department will begin enrolling newly eligible Medicaid clients under the Affordable Care Act in the fall of 2013. This means we will have to establish coordinated delivery systems in place prior to the fall of 2013.

Below are the specific questions on which we are seeking comments. Comments do not need to address all questions, but as much as possible, all comments should respond to specific questions. Since many of the issues are interconnected, there may be multiple ways of arranging responses. Issues for comment are organized as follows:

- How comprehensive must coordinated care be?
- What should be appropriate measures for health care outcomes and evidence-based practices?
- To what extent should electronic information capabilities be required?
- What are the risk-based payment arrangements that should be included in care coordination?
- What structural characteristics should be required for new models of coordinated care?
- What should be the requirements for client assignment?
- How should consumer rights and continuity of care be protected?
- What is your organization's preliminary anticipation of how it might participate in coordinated care?

1. How comprehensive must coordinated care be?

The legislation is clear that to meet the definition of coordinated care, an entity must provide or arrange for the “majority of care”, including a patient-centered medical home with a primary care physician, referrals from the primary care physician, diagnostic and treatment services, behavioral health services, inpatient and outpatient hospital services, and when appropriate, rehabilitation and long-term care services. The law also requires arrangements where the State pays for performance related to health care outcomes, the use of evidence-based practices, the use of electronic medical records, and the appropriate exchange of health information electronically.

This comprehensive definition does not contemplate coordinated care coverage for specific diseases, such as management of asthma or diabetes. It does not preclude, however, organizations that offer comprehensive services or care management tailored to people with specific diseases or conditions working with other entities serving a broader population. In addition, medical homes will be required components of coordinated care, but by themselves will not be sufficient to meet the requirement for accepting responsibility over all services.

Coordinated care in Illinois is contemplated to include a wider range of potential arrangements than traditional, fully capitated managed care. Coordinated care entities could be organized by hospitals, physician groups, FQHCs or social service organizations. While the Department would like to test these new models, we need to determine the current level of interest and capacity to offer these comprehensive, risk-based services through the Medicaid Program.

Questions for Comment

a) Do you think that coordinated care should require contracts with specific entities that arrange care for the entire range of services available to a client via Medicaid, across multiple settings and providers? Are there any alternatives you would recommend for consideration?
b) Must all of these elements be required in any entity accepting a contract, or just some elements? Might these change over time, i.e. start with a base set of requirements and gradually increase over time?
c) Medical homes are generally considered the hub for coordinated care. How should the existence of a "medical home" be operationalized? Would existence of a medical home require NCQA certification? Would all primary care physicians be required to be in practices that meet these requirements? What requirements are essential for every practice? Presumably it would be possible to increase requirements over time. What progression would make most sense?

d) How explicit should requirements be about how an entity achieves coordinated care? For instance, should the care coordination entity be required to assign an integrator or care coordinator to each enrollee?
e) Where, if at all, should HFS provide some kind of umbrella coverage for entities, e.g. negotiate a master pharmaceutical contract that would be available to all coordinated care entities?
f) What incentives could be offered to enlist a wide range of providers, in key service areas, to join coordinated care networks?

Meridian Health Plan Response (#1)

For the best outcomes in care and quality, all health care providers should be engaged contractually. If the Department plans to contract with Coordinated Care Entities (CCEs), those entities should have the ability to meet financial risk and quality expectations. Contracted CCEs should also have networks in place to arrange services across the entire spectrum of care covering all Medicaid benefits. The CCE would serve as a hub, overseeing the coordination of care across a range of services and providers.

The goal of Coordinated Care Programs is to derive a client-centered service plan that meets all the needs of the enrolled population. Full coordination of care should encompass the services of facilities and healthcare providers across multiple settings. This inclusive effort provides consistency and reliability, assists in the establishment of a medical home, reduces confusion as to who covers what services, and allows for the continuous monitoring of healthcare services to meet enrollee needs. Specific programs could be included within a CCE for the aged, blind and disabled, children with special health care needs, adults that are developmentally disabled, or chronically mentally ill.

To be clear, CCE contracts should not be offered to individual practices, clinics, or entities that directly provide a service and do not coordinate/arrange services outside of their scope for the recipient. This type of fragmentation would lead to waste in the system and less than optimal health outcomes.

At a minimum, the CCE should provide certain basic elements in order to deliver the best, most efficient care possible: primary care physician, referrals from the primary care physician, diagnostic and treatment services, behavioral health services, inpatient and outpatient hospital services. Specifically, the CCE should offer:

- Self-management support – Providing information to patients, teaching disease-specific skills, training patients in problem solving, assisting in emotional impact of chronic disease, providing regular follow up and encouraging patient participation.
- Care management – Implementing a registry or predictive model for population identification and patient management, as well as collaborative practice models.
- Community linkages – Identifying local resources, collaborating with ISD, AAA, housing and transportation agencies.
- Information systems – Developing integrated electronic information systems for patient information, labs, imaging, referrals, meds, social and community services, patient registries, etc.
- Secure transitions of care – Providing all pertinent communication, including follow-up tests, changes in the plan of care, medication reconciliation, etc.

With these elements in place, enrollee care can be coordinated in a comprehensive and meaningful way.

All of these elements should be required in order to fully coordinate enrollee care in a comprehensive and meaningful way. As Coordinated Care Programs continue to progress, participating providers would be expected to meet standards and requirements as they are updated. Certain elements may be added over time, such as long-term care or pharmacy.

Restricting the benefits that are offered or not supporting the collaboration of access across all paths of care would be counterproductive to the goal of coordinated care. An effective CCE will offer enrollees with complex medical concerns the necessary tools to move from high risk categories of care to moderate or even low risk categories.

Entities can achieve care coordination a variety of ways, however, the benchmarks to measure coordination and health outcomes should be clearly defined for all participants.

The CCE network should have the ability to provide comprehensive services, as well as the ability to provide outreach to all enrollees, and case management or coordinators for all enrollees who request them. There should be a requirement for making a certain amount of calls to recipients when they first enroll, and then regular, ongoing contact to keep in touch and provide health education.

Enrollees in the Coordinated Care Program should be assigned to a “Patient Centered Medical Home” (PCMH) where their Primary Care Providers (PCPs) can guide them through the healthcare system. PCPs will help coordinate and implement the individualized care plans that enrollees may need. This will provide ongoing, systematic efforts to monitor the appropriateness of enrollee treatment. The PCMH model also allows enrollees to build an ongoing relationship with their PCPs, encouraging them to participate in the care they receive and ensuring effective communication and integration of the services provided.

The Medical Home should require certification from a nationally recognized organization, such as NCQA, JCAHO, URAC or AAAHC. All primary care physicians would be required to be in practices meeting these requirements.

A timeframe of 18-24 months for PCMH practice certification is reasonable. The CCE and/or the state could provide financial assistance in achieving PCMH certification; once certified the practices would receive increased payments based on the well-documented cost savings of PCMH practices.

While it would be ideal to have an integrator or care coordinator for every enrollee, it is more cost-effective to consider using predictive modeling to identify enrollees who are likely to drive high future health care costs. The first step would be to identify those who could benefit most from care coordination services, such as those who have been failed by primary care (people with multiple illnesses combined with co-morbidities like mental health and substance abuse, the medically frail, and the homeless).

The care coordinator should have expertise in self-management and patient advocacy, and the ability to navigate complex systems and communicate with a variety of people. The care coordinator would be responsible for goal identification and coordination of services. The Institute for Healthcare Improvement (IHI) has determined that the best model for care coordination involves an integrated multidisciplinary approach that includes one care coordinator person. The care coordinator's goal is to help individuals develop more self-care skills, and to call on the integrated team when needed. A stratification process can help determine the best candidates for supportive care management. For example, the CCE would look at its population and determine the allocation of resources across the four strata of care.

- Tier One enrollees receive effective primary care with good HEDIS measures, and have limited ER or hospital visits.
- Tier Two enrollees have fairly effective primary care with significant support from the primary care team, with frequent primary care visits, excessive hospital use and suboptimal HEDIS measures.
- Tier Three and Four enrollees do not have effective primary care due to high ER utilization, limited primary care visits and poor HEDIS measures. These enrollees are best served by care coordination and enhanced services.

Below are sample stratification frameworks developed by Meridian Health Plan for adults and children in its Michigan member population.

Table 1: Framework for Population Management (Adult)

Population	Interventions				Impact on Metrics		
	Care Management	**Care Coordination**	**Self-management support**	**Linkages to Community Services**	**Population Health**	**Cost**	**Patient Experience**
Level 1: Healthy	• Screenings and Preventive care • Self-Management Support • Appropriate referrals • All patient registry with preventive care decision support and performance reporting for HEDIS measures	• Referral tracking • Test tracking • Outreach for routine visits and screening	• Goal is to maintain health, decrease risk factors, improve health • Identify health goal(s) • Encourage preventive screenings and healthy lifestyle	• Smoking cessation • Workplace wellness • Faith based wellness • Physical activity options • Nutrition counseling • Social services	• Monitor • HEDIS • Tobacco Use • Breast cancer Screen • Cervical cancer Screen • Chlamydia Screen • Colorectal Screen • BMI	• Minimize unnecessary ED use for primary care sensitive conditions	• Whole person orientation • Comprehensive preventive care • Access for acute • illness • Relationship with primary care physician team • PCAT
Level 2: Mild-Moderate Severity Diabetes Asthma Hypertension CVD Obesity	• Evidence-based plan of care includes: disease- specific self-management support & appropriate referrals • Planned Visits Registry with chronic disease decision support and reporting	• Condition-specific referral tracking • Test tracking • Monitor visits • Follow up after • Hospitalization/ ED visit • Integrate primary care & behavioral health care plans	• Motivational interviewing • Written SMS plan with goals and strategies • Regular review and update of plan	• Disease specific educational programs • Path Programs • Communicate with workplace re: plan of care • Support groups • Social services Mental Health	• Improve HEDIS measures for Diabetes • Hypertension • CVD	• Decrease in ambulatory care sensitive hospitalization and ED visits	• Confidence in knowing how to care for illness. • PAM • CTM 3/15 • PCMH CAHPS

Table 1: Framework for Population Management (Adult) Continued

Population	Interventions				Impact on Metrics		
	Care Management	Care Coordination	Self-management support	Linkages to Community Services	Population Health	Cost	Patient Experience
Level 3: Complex - Co-morbidities Complex illness - Other issues: cognitive, frail elderly, social, financial	Care plan identifies the specialists and agencies providing care All-patient registry that accepts a broad range of diagnostic codes	- Complex care coordination and support. - Case management services and software - Integrate multiple care plans	Self-management goals and plans are clearly articulated and responsible parties identified	Track referrals for high risk patients	See footnote	Decrease duplication of services	See footnote
Level 4: **Most Complex** Medically fragile, technology dependent homeless schizophrenia care at this level may be managed by specialist(s)	Same as level 3 A specialist may assume responsibility for providing primary and specialty care and for care coordination - May include Palliative Care - End of life care	See footnote	- May include Palliative Care End of life care	See footnote	See footnote	See footnote	See footnote

Note: Levels 2, 3 and 4 include everything from the previous level plus the content listed

Table 2: Framework for Population Management (Children)

Population	**Interventions**				**Impact on Metrics**		
	Care Management	**Care Coordination**	**Self-management support**	**Linkages to Community Services**	**Population Health**	**Cost**	**Patient Experience**
Level 1: Healthy	• Screenings and Preventive care • Bright Futures • Self-Management Support • Appropriate referrals • All patient registry with preventive care decision support and performance reporting for HEDIS measures • MCIR	Referral tracking; Test tracking • newborn screen, • lead screen Outreach for well child visits and immunizations	• Anticipatory guidance • Age specific handouts, • Generic care plan for age	• Early On • Smoking cessation for parents, • Schools • Services for physical activity, • Nutrition counseling	• Monitor • HEDIS • Well Child Visits • Immuni-zations, • BMI screen • Lead Screen	• Minimize unnecessary ED use for primary care sensitive conditions	• Whole person orientation • Comprehensive preventive care • Access for acute illness • Relationship with primary care physician team • PCAT
Level 2: **Mild-Moderate Severity:** - Asthma, - ADHD, - Obesity	• Evidence-based plan of care includes: • disease- specific self- manage support & appropriate referrals • Planned Visits • Registry with chronic disease decision support and reporting	• Condition-specific referral tracking • Test tracking • Monitor visits • Follow up after Hospitalization / ED visit Integrate primary care & behavioral health care plans	• Written SMS plan with goals and strategies • Regular review and update of plan	• Healthy Homes for asthma • Communicate with schools regarding plan of care and problems • Support groups • Social services	• Monitor adherence to planned visit schedule • Follow up after of ED visits and hospital stays	Asthma – • Decrease in hospitalizations and ED visits;	• Confidence in knowing how to care for illness. • PAM • CTM 3/15

Table 2: Framework for Population Management (Children) Continued

Population	Interventions				Impact on Metrics		
	Care Management	Care Coordination	Self-management support	Linkages to Community Services	Population Health	Cost	Patient Experience
Level 3: Complex • Co-morbidities Complex illness • Other issues cognitive, frail elderly, social, financial	Care plan identifies the specialists and agencies providing care All-patient registry that accepts a broad range of diagnostic codes	• Complex care coordination and support. • Case management services and software • Integrate multiple care plans	Self-management goals and plans are clearly articulated and responsible parties identified	Track referrals for high risk patients	See footnote	Decrease duplication of services	See footnote
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Note: Levels 2, 3 and 4 include everything from the previous level plus the content listed

For optimal efficiency, all medical, behavioral and pharmacy services should be handled by the CCE. Umbrella coverage should be limited to routine and preventive dental care.

Within a coordinated care network, provider incentives could be based on the completion of identified key quality measures and services, in addition to recognition or certification as a Patient Centered Medical Home. These incentives could include:

- Payment to support the costs to transform and become certified
- Technical support via education, training tools and provision of data for care management
- Facilitation of data exchange
- Primary care case management fees (PMPM) and lump sum savings payments
- Enhanced primary care case management fees for different groups—SSI, women and foster children (PMPM)

In more rural regions where access may be limited, additional incentives could be negotiated during the network development process.

2. What should be appropriate measures for health care outcomes and evidence-based practices?

The law requires payment based on outcomes and use of evidence-based practice. How should this be operationalized? There is an emerging body of research and analysis on outcomes and evidence-based practice. Presumably the State will establish a set of measures and standards and create incentives relative to those measures. The difficulty will be balancing the number of measures that could possibly to into defining high quality care with the need to keep the incentive packages administratively manageable. Whatever measures are used should be chosen from nationally accepted measures (e.g. HEDIS, CMS Quality Measures, etc.).

Questions for Comment

a) What are the most important quality measures that should be considered?
b) Is there one set of measures that should be applied to all coordinated care or might there be different measures for different kinds of clients--for instance, children versus adults or disabled versus non-disabled?
c) How should the Department think about client risk adjustment in order to level the playing field as providers deal with patients across a wide range of situations?
d) What kind of guidance is available concerning the number of measures that would make sense, especially since coordinated care covers a broad spectrum of care?
e) What percentage of total payment should be specifically tied to quality measures?
f) How can the Department most effectively work with other payors to adopt a coordinated set of quality measures so that providers would have a clear set of measures toward which to work?
g) How will we know when we have achieved care coordination, i.e. how should we measure success?

Meridian Health Plan Response (#2)

The National Committee on Quality Assurance (NCQA) Healthcare Effectiveness Data Information Set (HEDIS) is nationally recognized and offers a broad spectrum of preventive measurements, particularly childhood-specific and women's health measures. HEDIS disease-specific measures (diabetes, cardiovascular disease, asthma, etc.) cover much of the rest of the population. These measures are already followed by many states, setting comprehensive standards, guidelines, and measures to monitor progress and improve quality.

The US Preventive Services Task Force (USPSTF) recommendations by age and sex would provide a useful supplement to HEDIS measures. These include prevention measures such as breast cancer screening, colon cancer screening, cervical cancer screening, tobacco use history, advice for smoking cessation, seasonal influenza vaccination and pneumonia vaccination, Well-Child Visits/Immunizations, lead screening for two year olds, prenatal and postnatal care. USPSTF also provides measures for specific diseases (coronary artery disease, diabetes and hypertension). Hospital measures include the CMS measures for MI (beta blocker, ASA, etc.), CHF (ace inhibitor, etc.), pneumonia (blood cultures, appropriate antibiotics, etc.) and COPD.

In addition, Consumer Assessment of Healthcare Providers and Systems (CAHPS) would provide valuable patient feedback on experiences with ambulatory and institutional care for coordinated care entities.

Capitation across rate cells based on age, sex, region, and health have already been created for the Illinois Medicaid population. Thus far, using those adjusted rates to pay on a PMPM basis has worked across populations for the TANF population and is now being employed in the Integrated Care Program (ICP) for the AABD Pilot.

Over time, the state will need to define a strategy to update risk scores as healthcare transitions from FFS claims to encounter data in support of future rate setting and risk assessments.

The Agency for Healthcare Research and Quality (AHRQ) care coordination measures atlas (included in Meridian's email as separate attachment), designed to assess care coordination interventions, could also be utilized. This atlas could be combined with Institute for Healthcare Improvement (IHI) endpoint measures, including:

- Health of a population – behavioral risk factor surveillance system, SF-12, HEDIS, social isolation, number of outpatient visits
- Individual experience of care – site-specific experience of care survey, how's your health survey, ambulatory care-sensitive hospitalization
- Per capita costs – number of ED visits, readmissions, inpatient days, behavioral health admissions, hospital-based costs (ED, inpatient, detox), total costs per enrollee per month

The more that is measured, the more ultimately can be managed.

Quality is a significant component and should be considered in developing a payment structure. A 1-3% withhold of the monthly capitation payment should be held from the Coordinated Care Entities to establish a bonus pool tied to specific quality measures and performance improvement areas designated by the Department.

The percentage should probably be modeled after the Physician Quality Reporting System (PQRS), which is being transitioned to a formal pay-for-performance model. Consideration might be given to what the AMA endorses on this topic.

Another possible source of quality measurements would be a combination of nationally recognized NCQA HEDIS measurements and evidence-based PQRS measures, the majority of which have been developed by the American Model Association Physician Consortium for Performance Improvement (AMA PCPI). Ideally, these measures will have been adopted or endorsed by a consensus organization, such as the Ambulatory Quality Association (AQA) Alliance or National Quality Forum (NQF). These measures would be enhanced by the creation of a Quality work group by the Department and Coordinated Care Entities. The workgroup would meet on a monthly or quarterly basis to offer feedback and determine the set of measures based on the clinical makeup of the clients.

The success of a CCE should be determined by the percentiles it achieves in the various HEDIS measures, combined with a survey of patient and/or family experiences with the processes and outcomes of care coordination effort and any additional measures decided upon by HFS.

Continuous monitoring of all relevant data is crucial whether on an annual, quarterly, or monthly basis. Coordinated care entities should be required to report desired quality metrics in a timely and orderly fashion.

3. To what extent should electronic information capabilities be required?

The state and federal governments are strongly committed to the concept that all medical practice in the 21st century needs to operate in the context of an electronic health record that, in some degree, is connected to all other providers. But that is not the current situation. Even the progress taking place and anticipated in response to the incentive payments created by ARRA will not result in universal electronic coverage and information exchange in the near term. Accordingly, it would be unrealistic to require these capabilities initially, even though we expect material progress from the current situation by 2013.

Questions for Comment

a) What type of communication related to the clinical care of a Medicaid client should be required among providers until electronic medical records and health exchanges become ubiquitous?
b) Should the Department offer bonuses for investments in EHR systems, above the substantial incentives from ARRA?
c) If additional incentives were going to be added for being electronically enabled, that would inevitably mean less reimbursement somewhere else. How important are incentives above and beyond the ARRA incentives to induce electronic connectivity? What trade-offs would be appropriate to support such incentives? (For instance, should the amount of money available for outcome incentives be reduced to increase these incentives? Or should there be a lower base rate with specific incentives for increasing connectivity?
d) On what time frame should we expect all practices to be electronically enabled? How would we operationalize the requirements? Is tying them to the official "meaningful use" requirements sufficient?

Meridian Health Plan Response (#3)

The entity responsible for coordinating care should have the electronic capability to collect all necessary healthcare information on their enrollees and share it with providers. This includes data collection, stratification, analysis, predictive modeling, and the capacity to provide synthesized data in an electronic format. Clear guidelines should be laid out for all participating providers as to the information shared with the CCE itself, and the information shared with other providers contracted with the CCE.

At a minimum, providers and health entities within the state should have the ability to communicate and exchange data including items such as:

- The shared plan of care for the enrollee
- Tests and services to avoid unnecessary duplication
- Patient safety issues—medication reconciliation, consult reports, progress notes

This is an opportunity to develop state-specific communication structures, such generic medical documentation forms and defined reporting databases. By improving the coordination of information structure across healthcare sources the errors and inconsistencies can be reduced and overall quality of care improved.

The Department should offer bonuses for investments in EHR systems. Consideration also should be given to a CCE willing to provide incentives to help providers move towards electronic capability.

These additional incentives are very important. A bonus pool could be established through a withhold from the monthly capitation. Coordinated Care entities meeting the goals of the Department would share in the distribution of the bonus pool proportionately to the initial funding based on capitation held. Providers who do not reach established quality metrics will not receive the withhold. The dollars retained in the withhold may be used as an incentive for providers to not only participate in the Coordinated Care Program, but also to establish EHR systems.

With a time-limited incentive program for EHR implementation, the fiscal cut from Quality based incentive programs would be temporary. However, funds should be divided between incentive programs in an effort to promote both coordination and quality of care.

Incentives above and beyond those offered by ARRA to provide meaningful use should not be of high priority, except perhaps in consideration of underserved areas. A stepped approach with lower base rate and specific incentives as one works toward implementation should be considered in these areas. There should be more monies allotted toward outcomes and quality.

It is reasonable to expect full electronic data exchange capabilities before 2015, given the importance of this timeframe and the expectations throughout the state. Incentive programs for implementing the EHR must reflect the expedited anticipation for these capabilities.

Beyond meaningful use electronic data exchange can grow from a health record to a patient management system with enhanced care, e-prescribing, proactive care, resources dedicated to quality with evidence-based care built in, integration of patient information—labs, imaging, referral, medication, social and community services, decision support tools, provider alerts. There could also be a patient portal with access to important care plan information, the ability to make appointments, interact with providers, etc. This type of system would support the overarching goals of coordinated care.

4. What are the risk-based payment arrangements that should be included in care coordination?

The Medicaid reform law is clear that risk is a key component of coordinated care. Capitated payments paid to traditional managed care organizations are obvious; however, the law is not specific as to whether coordinated care entities need to assume 100% of the risk and other risk-based arrangements might be considered. The Department is mindful that provision of efficient, high quality care is most determined by the people closest to providing that care, and providing appropriate incentives is the best way to fully engage them in focusing on outcomes. However, we understand for many providers this is a challenge to current operations.

Questions for Comment

a) How much risk should be necessary to qualify as risk-based?
b) Could "risk-based arrangements" include models with only up-side risk, such as pay-for-performance or a shared savings model? But if it's only up-side risk, is there any "skin in the game", without something to be lost by bad performance?
c) If initially included, over what time frame should these arrangements be replaced with the acceptance of down-side risk?
d) What should be the relative size of potential payments conditioned on whether a provider is accepting full risk as compared to a shared savings model?
e) In the case of either a capitated or a shared-savings model, what should be the maximum amount of "bonus"? Stated differently, what is the minimum Medical Loss Ratio for a provider?
f) Who should be at risk? Is it sufficient that the coordinated care entity accepts risk, or must there be a model for sharing that risk with direct providers?
g) How should risk adjustment be included in the model? Conversely, how should "stop loss" or "reinsurance" programs be incorporated?
h) How can the state assure that capitated rates or other risk-based payments are not used to limit appropriate care or serve as a disincentive to diagnose and treat complex (i.e. expensive) conditions?

Meridian Health Plan Response (#4)

A full risk arrangement is most appropriate and should be required for the Coordinated Care Entities (CCEs) from the beginning of the contract, as the best solution to meet the fiscal and quality needs of the Department. The Department should require preapproval of all standard agreement language and contract reimbursement terms. The minimum Medical Loss Ratio should mirror the Patient Protection and Affordable Care Act. Stop Loss reinsurance could be required from each CCE or group purchased on behalf of the CCE by the Department.

This could be combined with pay-for-performance incentives to yield the best results. Limiting the arrangement to upside risk allows entities to languish in mediocrity because there is no incentive to properly manage client care. In fact, in order to remain “at risk” under most shared savings models, entities will share in the savings even if quality outcomes do not improve. Additionally, only offering upside risk could attract entities which are not capable of truly managing the full spectrum of recipient care.

The CCE contracted with the Department should be the one at risk. If they so choose, CCEs should have the ability to have downstream risk agreements with providers, ACOs, POs and PHOs.

Provider payments should be larger on the full risk side due to the relative lack of incentive to produce on the shared savings side. This would act as a hedge for the Department against scenarios where shared savings benchmarks are not met.

Once underway, quality metrics are an effective way to ensure that capitation will not limit appropriate care. The implementation of down-side risk means that providers who do not meet established metrics will lose withhold. The Department can also base future enrollment of new enrollees on program quality. Entities with the best quality scores receive higher enrollment of eligible enrollees.

The involvement of HMOs is another effective way to check provider activity that could limit appropriate care.

5. What structural characteristics should be required for new models of coordinated care?

Assuming the Department enters into contracts with entities other than managed care entities, the Department must have criteria to determine if the entity has the capability to successfully coordinate care for Medicaid clients.

Questions for Comment

a) Should Medicaid lead or follow the market? Should we contract only with entities with operational, proven models or should we be willing to be an entity's first or first significant client?
b) What is the financial base necessary to provide sufficient stability in the face of risk-based arrangements? How should the determination of "minimal financial base" be different for one and two-sided risk arrangements? Should Department of Insurance certification be required?
c) Should there be a minimum number of enrollees required in an entity for it to be financially stable and worth the administrative resources necessary to accommodate it and monitor it? Should that amount differ by types of client? Can it be different for entities taking one-sided as opposed to two-sided risk?
d) What primary care or access to specialty care should be required? How extensive should be the network of providers to be able to offer access to a full range of care?
e) Should special arrangement be made to accommodate entities that want to provide coordinated care to particularly expensive or otherwise difficult clients?

Meridian Health Plan Response (#5)

Medicaid should lead the market in establishing a quality coordination of care effort throughout the state. The Department should be cautious in experimenting with new and unproven models, such as shared savings and ACOs, due to the vulnerability of the population and Medicaid budget issues. By selecting proven models with operational capabilities as key program drivers, entities with established functionality in working with the Illinois client population can pave the way for additional growth throughout this market. Specifically, the entity should have established the ability to collect and analyze data, stratify recipients across risk spectrums, provide case management, disease management and utilization review, and provide consistent outreach to their assigned population as part of their routine business practice.

In regions where there is not an established entity with these proven capabilities, an initial entity should demonstrate competence in five domains to ensure care coordination and thus potential contracting:

- A healthcare "home" – An enrollee-provider relationship that is continuous, provides a point of access, gathers information from many sources, and provides routine acute and chronic care coordination.

- Proactive plan of care and follow-up – Establishing a system for developing a plan of care, including setting goals with enrollee, joint management, providing an ongoing assessment of progress toward goals, self-management support, consistent follow-up for tests, referrals, etc., and engaging community services and resources.
- Communication – Clear and consistent sharing of information on care plans, patient safety, tests and services.
- Information systems – Standardized and integrated with essential care coordination functions.
- Transition hand-offs - Improving complete discharge instructions and contact information; educating patients about their diagnosis throughout hospital stay; reviewing with patients what to do if a problem arises after discharge and providing instructions for contacting their primary care provider; assessing the patient's degree of understanding by asking the patient to explain in his or her own words the details of the plan.

Coordinated Care Entities (CCEs) must receive Department of Insurance certification and be held to the risk-based capital requirements established by the State of Illinois. Without such oversight, the program will likely be vulnerable to major problems. Furthermore, any CCE should have to prove that it has some sense of how to handle risk.

Minimum financial base should be determined using NAIC prescribed risk based capital requirements. This will ensure program viability and long-term effectiveness, as CCEs meeting these requirements will have the resources to manage a high-risk population. This is especially important during start-up, when higher initial costs are incurred.

To administer the program effectively for its clients, the Department should establish a limited number of CCEs. The Coordinated Care Program will be best served by assigning large blocks of enrollees (100,000) to this limited group of entities, enlarging the risk pool and allowing for greater administrative capabilities. If the Department is considering contracting with multiple small entities, the administrative burden could overshadow any healthcare outcomes and savings Illinois might be able to achieve through this program. The minimum number of enrollees should not differ by type of client.

In terms of primary care and access to specialty care, every enrollee should have a choice of Primary Care Provider and, where appropriate, a Women's Health Care Provider. This is the model of access currently in place with Meridian Health Plan.

All Primary Care Providers, including those providing services in a FQHC or RHC, would be enrolled with the Department as one of the Provider types specified below:

- General Practitioners
- Internists
- Pediatricians
- Family Practitioners
- OB/GYNs
- Advanced Practice Nurses

- Specialists upon approval of Medical Director
- FQHCs
- RHCs
- Other clinics, including certain hospitals and Cook County Bureau of Health Service clinics.

In each Contracting Area there shall be at least one (1) full-time equivalent Physician for each 1,200 Enrollees, including at least one (1) full-time equivalent Primary Care Provider for each 2,000 Enrollees. In each Contracting Area there shall be at least one (1) Women's Health Care Provider for each 2,000 female Enrollees between the ages of nineteen (19) and forty-four (44), at least one (1) Physician specializing in obstetrics for each 300 pregnant female Enrollees and at least one (1) pediatrician for each 2,000 Enrollees under age nineteen (19). All Physicians providing services shall have and maintain admitting privileges and, as appropriate, delivery privileges at an Affiliated or nearby hospital; or, in lieu of these admitting and delivery privileges, the Physicians shall have a written referral agreement with a Physician who is in the Contractor's network and who has such privileges at an Affiliated or nearby hospital. When enrollees are admitted to a non-affiliated hospital by a plan physician, the Contractor is obligated to pay the hospital at a rate negotiated between the hospital and the Contractor. The agreement must provide for the transfer of medical records and coordination of care between Physicians.

In any Contracting Area in which the Contractor does not satisfy the full-time equivalent provider requirements set forth above, the Contractor may demonstrate compliance with these requirements by demonstrating that (i) the Contractor's full time equivalent Physician ratios exceed ninety percent (90%) of the requirements set forth above, and (ii) that Covered Services are being provided in such Contracting Area in a manner which is timely and otherwise satisfactory.

A complete and comprehensive network of all health care providers should be required. Specific access requirements should be utilized using the Medicare access standards for urban and rural geographic areas.

No special arrangements should be made for entities wishing to provide coordinated care to segments of the covered population. Minimum access requirements should be met by all CCEs for all clients served across the entire spectrum of care. In the long term, a larger pool facilitates risk sharing and opportunities for predictive modeling. It may also improve incentives for hospital partnerships

6. What should be the requirements for client assignment?

Care coordination entities must serve an identified population that is enrolled in Medicaid; they cannot exclude any enrollee of the population for which they are responsible - or individually “cherry-pick” their own enrollees. The current Illinois Health Connect program (Medicaid’s Primary Care Case Management program) requires that all Medicaid clients be enrolled with a specific primary care provider. Under the new policy, Medicaid clients may be required to enroll in a specific Coordinated Care Program, with enrollee protections to assure quality and access. Steps should be taken to maximize the proportion of clients who voluntary enroll (self-assign), but when clients do not choose, how should they be assigned?

Questions for Comment

a) The Medicaid reform law requires that clients have choices of plans, as do federal regulations. Would it make sense to limit the choices of clients by underlying medical conditions? (For instance, can all clients with specified behavioral health issues be required to choose among a different set of providers than clients not so identified?) Is this practical?
b) How much should the Department stratify choice areas by geography? Considered alternatively, would a provider need to have network coverage throughout a major area, such as Chicago? Or could a coordinated care entity limit its offerings to a particular neighborhood?
c) Can entities limit the eligible population they serve, and how narrowly can they limit their population? (Can providers, for instance, limit themselves to AABD or TANF populations, or even more narrowly, such as children with complex medical needs or individuals with serious mental illness)?
d) On what basis should assignment of clients who have not self-assigned be made in the first year?
e) One approach would be to make auto-assignment to capacity in proportion to the self-assigning choices. Another approach would be to allow providers to bid on slots, with lower rates getting a larger proportion of the auto-assignees. What are the strengths and weaknesses of these approaches? Are there other approaches?
f) Over time, the auto-assignment bases could change: one approach would be to make auto-assignment in relation to outcomes. Cost could also be a factor. How long a period should be allowed before switching to a more experienced-based formula?
g) Whether for self or auto-assignment, should there be a client lock-in period? If so, for how long? What safety mechanism should exist for clients where stringent enforcement of the lock in would be detrimental?
h) If the Department sponsors some demonstration projects to launch care coordination, how can enrollment be mandated?
i) How should care be coordinated for Medicaid recipients who are also enrolled in the Medicare program?

Meridian Health Plan Response (#6)

Limiting client choice based on underlying medical conditions is not a practical format for a coordinated care program. We do not believe this would meet the needs of the most vulnerable clients. Instead, these clients could be offered a selection of Coordinated Care Entity MCOs. Each MCO would be required to have the systems and capabilities to coordinate the specific care needed. This approach will aid in resource management for specialists, allowing these physicians to provide the most appropriate services on enrollees with specific health needs.

As an additional support, enrollment specialists could help educate or counsel eligible enrollees in choosing an appropriate network. Thus, barriers such as language, visual impairment, physical or mental disabilities would be taken into consideration and the enrollment specialist would provide accurate information in an appropriate format in order for the enrollee to make an informed decision.

Any entity wishing to participate in this program should demonstrate the capacity to coordinate across the spectrum of care under Medicaid beneficiary guidelines. If the Department allows more than one entity to contract for these services, then the Department could publish quality scores and rankings for the plans to be distributed to enrollees each year. This will allow enrollees to base their choice of plan on care and service data, and push the CCEs to compete on quality and service. If the true objective is to increase access, coordinate care and increase quality scores then assignment of the population should be awarded on how well a plan operates and the quality of care the enrollees receive. Actuarially sound rates will be required for this program, and the Department should establish the rates for each entity with the only variation based on risk adjustment.

In terms of geographic stratification, we suggest the use of the current regional designations already created by the Department as the potential service areas for the CCEs with further consideration at the county level based on population levels.

Entities should be chosen in part on how comprehensive a network they can offer for populations by county, providing the entire scope of covered benefits to all potential recipients residing within the service area. Each CCE would need to provide full coverage at the County level outside of Cook; within Cook, suburban Cook and Chicago would be required areas.

A CCE should not limit its offerings to a particular neighborhood. Having multiple entities operating within such close proximity has the potential to create an enormous administrative burden for Department oversight and review.

CCEs should be required to provide care to all populations, and not be able to limit their enrollment based on AABD or TANF. All Medicaid enrollees appropriate for enrollment should be offered the choice of the approved CCEs within a geographic service area. This allows the Department to include entire populations into the Coordinated Care Program. Specialized cases for complex care should not be directed to limited entities, unless they qualify for specialized programs such as CSHCN.

Providers should be able to limit their practice; however, better client outcomes can be achieved through serving the population through the CCE.

Proportional distribution to the CCEs should occur for the first year. Subsequent years should include an auto assignment algorithm based on quality, access and encounter data. The algorithm should be implemented with quality (HEDIS scores) and network access given the highest weight. Additional goals for the CCEs could be established by the Department and incorporated into the algorithm as well (i.e. timely reporting, participation in Health Information Exchange, etc.).

Alternative methods of auto-assignment, such as allowing providers to bid on slots, are not recommended. Providers who are unable to achieve high quality scores due to weak care management programs may attempt to buy their way into the market with lower rates. This could also result in larger provider groups dominating the market and taking share from smaller practices often serving under-served areas.

In terms of a PCP to enrollee ratio, 1:2,000 is feasible. The entity should place a limit on the number of enrollees it is able to enroll in order to ensure quality. Once enrollment reaches 65% of the total enrollment, then the entity should not receive additional enrollees via the automatic assignment algorithm with the exception of newborns, or changes in eligibility.

A comprehensive approach would use a methodology that rewards plans with higher auto-assignments for better quality scores, greater network capacity, encounter submission to the Department, and financial capability. Auto-enrollment strategies have several advantages. They can reach more eligible individuals and increase the speed with which a new entity can accomplish its objectives. They can also reduce the Department's operational administrative costs. Lastly, by using data sources that may be more accurate than some applicants' memories and paper records, auto-enrollment can reduce the number of ineligible individuals receiving benefits.

The auto-assignment methodology would be utilized for enrollees who fail to voluntarily choose a CCE at the time of enrollment. In that case, they would automatically be assigned to one of the options based on a pre-determined formula. The auto assignment methodology could only be used in counties where a choice between Illinois Health Connect and a CCE is available. This allows HFS to direct enrollees toward the health care plans that meet its quality and efficiency goals.

To implement the auto-assignment methodology HFS would establish a formula that could include quality, compliance and access to care standards. These standards would be reviewed on a quarterly, bi-annual or annual basis for scoring. An example of a possible auto-assignment formula would include three key areas; Quality, Compliance and Access to Care.

The following are the suggested weights for each of the three recommended areas:

- Quality – 40% of the total score
- Administrative Compliance – 25% the total score
- Access to Care – 25% of the total score
- CAHPS – 10% of the total score

Depending upon the goals of HFS, the following are some of the performance metrics that may be included in each of the three areas:

Quality of Care

- Annual HEDIS Measures
- Encounter Data Measures

The performance expectations specified in the CCE contract could be utilized to create the Quality of Care portion of the Auto-Assignment Methodology.

Administrative Compliance

- Monthly Claims Processing Statistics
- Monthly Encounter Data Submission
- Complaints Per 1,000 Enrollees

Access to Care

- Number of PCPs Open to New Enrollees
- Percentage of Capacity previously approved by HFS

Scoring Methodology

The following is a recommended Scoring Methodology for the three key areas.

Quality of Care

HEDIS - The CCE's HEDIS scores are compared to the latest NCQA percentiles. HFS would award 10 points for each HEDIS score above or equal to the 75th percentile, 5 points for each HEDIS score between the 50th percentile and the 75th percentile, and 0 points for HEDIS scores below the 50th percentile.

Encounter Data Measures - HFS would award points based on whether the plan achieves the performance monitoring standard of 40% for continuous enrollment. If the plan's 3-month average is above or equal to 40%, HFS would award 10 points; if the plan's 3 month average is above or equal to 30% but less than 40%, HFS would award 5 points; if the plan's 3 month average is less than 30%, HFS would award 0 points.

Administrative

The following are some examples of the performance standards that could be used for administrative compliance:

- 90% of clean claims processed within 30 days
- ≤1% of claims in ending inventory more than 45 days old
- Report is received by due date and passes all HFS edits
- Encounter data is submitted by due date
- Data passes all edit and volume requirements established by HFS

For the administrative measures, HFS would award points based on the number of months that the plan achieves the performance monitoring standard for that measure. For example, if the plan meets the standard 3 of 3 months, HFS would award 15 points; if the plan meets the standard 2 of 3 months, HFS would award 7 points; if the plan does not meet the standard at least twice within the time frame, HFS would award 0 points.

Access to Care

This would be a two-step process calculated on a county-by-county basis with the capacity and open PCP ratio.

Step 1: Calculate the plan's ratio of open PCP to approved capacity

$$\text{Ratio of open PCPs to the approved capacity} = \frac{\text{Plan's approved capacity}}{\text{Plan's open PCPs}}$$

Step 2: Assign Points based on the capacity ratio of open PCPs to Capacity.

- 1 PCP to 500 or fewer Enrollees = 15 Points
- Between 1 PCP to 500 Enrollees and 1 PCP to 750 Enrollees = 7 Points
- 1 PCP to 750 or more Enrollees = 0 Points

Assignment of Enrollees

Under this example, a total of 90 points could be earned by each CCE. Based on the points earned a tiered level of auto-assignment could be created as follows:

- 61-90 Points = 50% of Auto-Assignments
- 31-60 Points = 25% of Auto-Assignments
- 0-30 Points = 0% of Auto-Assignments

The remaining percentage of enrollees that were not auto-assigned would be automatically enrolled in to Illinois Health Connect.

We recognize that an enrollee should have the right to change their mind, so we suggest giving enrollees a range of 30 – 90 days from initial enrollment in the health plan to change plans without cause. However, we recommend limiting health plan changes without cause to once per calendar year. If they do not decide to leave within that timeframe, then they would be locked into the plan for the full twelve months with an annual open enrollment period within their anniversary enrollment month. The twelve-month lock-in would create parity between Medicaid and private insurance.

This one-year timeframe allows the health plan and the enrollee's physician to provide continuity of care; enrollees can establish a medical home and become familiar with their care coordinators as well as their care providers; health plans can also collect an effective amount of data for the measurement of quality outcomes. The one-year period also has the potential to reduce administrative expenses for the State and ICEB if changes are not constantly processed every month.

A set of limited circumstances where the lock-in would be lifted could easily be developed. Clients with a documented concern should be allowed to disenroll "for cause" at any time. Examples would be termination of the patient centered medical home by the Coordinated Care Entity, documented safety concerns, etc.

The primary drawback is that lock-in may block enrollment changes that are in the enrollees' best interests. Lock-in would also force entities to retain noncompliant enrollees and make it more difficult to attract new enrollees.

Demonstration project enrollment could be mandated by randomly selecting a percentage of the population for participation, and offering a choice between two or more coordinated care entities. Enrollees wishing to disenroll would follow the lock-in methodology as described above. If they do not elect to switch plans or return to the PCCM program, they will remain locked in for the remainder of the twelve-month period.

Another possibility would be to start initially with SSI recipients as well as ABADs, with subsequent spread.

For Medicaid recipients also enrolled in Medicare, Medicare would be the primary payer. Dual eligible enrollees should be offered the ability to choose their Coordinated Care Entity or be automatically assigned similar to the TANF and AABD populations.

In addition, there are Special Needs Programs (SNPs) specifically licensed to be handle the dual eligible population. It is possible that CCEs participating in the Coordinated Care Program could also be licensed to handle this population.

7. How should consumer rights and continuity of care be protected?

Over the last 20 years, the managed care model has matured significantly. It has moved from an emphasis on disapproving care to an emphasis on actually coordinating care. This emphasis has been reinforced by the more rigorous review of managed care entities (such as NCQA assurances) and, at the current time, there is good reason to believe that the degree of quality assurance and oversight in the managed care market is greater than what exists in the fee-for-service market, in which every patient is required to fend for herself with little oversight or assistance. As part of maintaining, and building on, these improvements, however, it is appropriate to assure that clients have reasonably defined ways of expressing their satisfaction with the care they are receiving and have issues addressed, whether they are enrolled in traditional managed care entities or some alternative coordinated care model.

In addition, after January 1, 2014, the Health Benefits Exchange will become operational under the Affordable Care Act. Newly eligible Medicaid clients in Illinois would likely be offered coordinated care; other clients over the 133% Federal Poverty Level threshold would be shopping for private health insurance, with tax subsidies. The Department is committed to making sure that clients' can continue to use the same providers, even if their source of funding is changed due to shifting income.

Questions for Comment

a) How do we assume continuity of care as entities come and go or change contractual status? (This issue could be particularly acute if HFS "leads" the market by allowing contracting with entities for which Medicaid is their only coordinated care contact.)
b) Although not strictly a coordinated care issue, how can continuity of care be maintained for low income clients across Medicaid and other subsidized insurance programs--such as will be provided by the Health Benefits Exchange under the ACA? In that respect, how important to continuity is a Basic Health Plan (a provision in the ACA that allows States to create a plan for clients with incomes between Medicaid eligibility and 200% of the Federal Poverty Level)?
c) Should plans be required to offer plans in both Medicaid and the Exchange, with essentially transparent movement from one to the other if client income or circumstances change?
d) What rights, if any, should the client have to continue a medical home relationship in changing circumstances?
e) What mechanisms should be required to obtain client information on an ongoing basis about plan quality? What appeal rights might be necessary?
f) How do we assume continuity of care as entities come and go or change contractual status? (This issue could be particularly acute if HFS "leads" the market by allowing contracting with entities for which Medicaid is their only coordinated care contact.)

Meridian Health Plan Response (#7)

Concerns about the continuity of care can be addressed by contracting with a minimal number of CCEs to cover the majority of regions selected for the program. These CCEs would be responsible for having a large network and a long-term contract with the Department. This would cut down on the issues of continuity of care because the CCE will have case managers or care coordinators transitioning enrollee care from one provider to another if necessary. The Department could mandate that these providers transition the enrollee from the current entity to the next one. Additionally, fees could be imposed for not contractually following through with expectations.

The Basic Health Plan (BHP) is the best way to limit churn and preserve continuity of care. Most experts believe the churn at the 200% level will be much lower than at the 133% level. Requiring CCEs to offer plans in both Medicaid and the BHP will maximize continuity of care. Clients of one program are highly likely to move to the other on a fairly regular basis as circumstances and income change. By offering both plans, qualifying enrollees will be able to maintain the same access to facilities and providers, continuing relationships with both the medical home and the CCE. In addition, interference with data exchange, continuous monitoring and quality measurements would be minimized.

Administering both Basic Health Plan and Coordinated Care Program on the same platform will allow enrollees to keep the same medical home and creates a buffer for the most vulnerable clients. Families will receive the same coverage increasing the ease of accessing care. Comprehensive Medicaid Managed Care benefits that are proven to work for low-income families will be preserved. It allows continuous monitoring for enrollees with specific health conditions such as diabetes and asthma, as well as consistent measuring of quality metrics for reporting outcomes.

On the other hand, the move from Medicaid to the Health Benefits Exchange for an individual at the 133% level will be traumatic. The movement will not be transparent, even if both plans are operated by the same organization. The two networks will vary greatly, so clients moving from the Exchange to Medicaid will likely need to change providers, even if both plans are operated by the same organization. In addition, exchange plans will be much more expensive to clients. As a result, individuals will be less likely to seek care in the Exchange; this will likely result in the individual electing not to seek care in the Exchange at all leaving the individual uncovered.

The Illinois legislature is currently considering two bills, SB 1591 (Munoz) and HB 1685 (Acevedo), which would establish a Basic Health Plan for Illinois to serve the health care needs of individuals earning between 133% and 200% of the federal poverty level. If implemented, the BHP will provide multiple benefits for the State of Illinois:

- **Provider Continuity** – It is estimated that 35% of all low income adults will experience a change in income every 6 months and be eligible to enter or leave the Medicaid program. Studies show that provider continuity is clinically significant. The BHP will utilize the same provider network as the Medicaid program. Thus, the BHP will provide stability of coverage to families and continuity in terms of their provider network.

- **No Cost to the State** – 100% funded by the federal government at 129% of estimated Illinois Medicaid costs. The State will capitate payments to health plans minimizing financial risk to the State.
- **Self-Sustaining** – Federal subsidies for the BHP are expected to exceed costs for more than 25 years based on current trends. Federal payments to the State to cover 400,000 Illinoisans in the BHP should be no less than $1.45 billion. This amount is based on an estimated $3,624 per individual, which was the national average cost incurred by Medicaid managed care organizations in 2010 to cover an individual. Because the BHP funding is based on the second lowest cost Silver tier plan in an Exchange, the expected federal payments should not be lower than $1.45 billion, as the plans operating in an Exchange will not offer a commercial plan at lower than Medicaid rates. Federal payments should exceed the expected costs of the BHP by $510 million as many experts approximate annual funding to be over $4,900 per individual in the BHP, or $1.96 billion. Because BHP funding is tied to an Exchange (i.e., commercial insurance), projected payments from the federal government are expected to increase faster than the costs of the BHP, as commercial insurance costs have historically risen at a faster rate than Medicaid costs.
- **Savings to the State on the Existing Medicaid Program** – Significant State budget savings could occur if the State terminated optional Medicaid coverage for adults with modified adjusted gross income above 133% FPL as permitted by the ACA beginning on January 1, 2014. These adults could be transferred to the BHP without increasing their health care costs or reducing their benefits**.** These savings would not occur in an Exchange.
- **Higher Participation Rate** – Studies show that premium costs and high out of pocket costs deter low income individuals from purchasing health insurance. The relatively high cost sharing and premium costs inherent in an Exchange will most likely limit elective enrollment. Thus, a significant number of individuals eligible for subsidies in an Exchange will choose not to participate. The BHP will be structured to eliminate or significantly reduce out of pocket costs to such individuals, resulting in a greater number of members electing to be insured.
- **Enhanced Provider Payments** – Provider payments will be higher than Medicaid rates. These payments will result in a net increase to the State in tax dollars, as well as increased reimbursement to providers.
- **Greater Benefits to Enrollees** – Federal funding is in the form of an advanced lump sum given to the State at the beginning of each federal fiscal year with the potential funding for Illinois approaching $2 billion annually. The State would collect interest on the undistributed monies that would be dispersed to health plans on a monthly basis over the course of the year. The interest may be used to offer additional benefits to enrollees, or it may be used as a rainy day fund to hedge against the risk of rising health care costs.

To obtain quality information on an ongoing basis, CCEs should implement a Quality Assessment and Performance Improvement Program. This program would objectively monitor and evaluate quality and appropriateness of care. There should be performance improvement projects, medical record audits, performance measures (CMS Star Rating) and surveys (CAHPS). Also, there should be data collection on under and over utilization of services. This should be reported at least annually or more frequently if necessary. If the quality performance is not acceptable then the network will need to provide a corrective action plan within a specified time frame. Automatic assignments and enrollments should terminate until further improvement can be documented.

In addition, there should be a grievance system in place which involves access to a state fair hearing. Dissatisfaction can involve any matter such as quality of care—access, timeliness, rudeness of a provider or employee, or failure to respect an enrollee’s rights.

8. What is your organization's preliminary anticipation of how it might participate in coordinated care?

While this paper makes it clear that there are numerous policy issues that are open for discussion, it is our hope that the range of issues raised also makes it clear that the State is committed to testing new models in addition to traditional managed care. Recognizing that any intentions at this point are preliminary, it would be useful to get some sense of how various providers and provider groups are thinking they might participate in coordinated care.

Questions for comment:

a) How would your organization participate in coordinated care?
b) Do you have some model in mind that you think would work to meet the terms of the law and also work well for you and the patients you serve?
c) Is your organization considering developing a Medicare ACO? Do you see opportunities for entities like ACOs in the private market? How do you see yourself involved in either Medicare or other forms of ACOs?
d) If your organization is considering participating in Medicaid coordinated care in some way beyond contracting with coordinated care entities, do you think you will be ready to do so by mid-2013?
e) For how many Medicaid clients could you anticipate taking coordinated care responsibility? Is there a particular group of clients for whom you believe your organization is particularly suited or for whom it has developed particular expertise?

Meridian Health Plan Response (#8)

Meridian Health Plan would participate as a contracted Coordinated Care Managed Care Organization under a full risk arrangement directly with the State of Illinois.

Our experience as a Medicaid-only HMO is, and will continue to be, part of the cross-continuum of care together with providers, institutions, and Patient Centered Medical Homes. We bring together health care providers and suppliers in order to coordinate care, reduce costs and provide a patient-centered focus. In addition, our priorities are quality and utilization of evidence based medicine guidelines/care. We gather data on HEDIS measures and CAHPS scores as well as our own internal provider survey; we also collect data on cost of care and utilization. We participate in the Post Acute Support System (PASS), Better Outcomes for Older Adults through Safe Transitions (BOOST) and Michigan State Action on Avoidable Re-hospitalizations (MiSTAAR) programs. We have been recognized as one of the nation's top Medicaid MCOs for the past five years, based on measures closely aligned with the philosophy of care coordination. For example, we offer transportation for our members who are children, women, and disabled adults to their medical homes on a yearly basis, as well as arranging more care for those individuals needing disease management, case management, or routine preventive maintenance.

Theoretically, Meridian Health Plan could work with community, provider, or hospital organizations to form ACOs or Community Care Networks, and act as the "back office" to coordinate care, process claims, analyze data for risk stratification etc.

We believe a full risk Medicaid MCO model meets the terms of the law and provides the highest quality and best financial outcome for enrollees, providers and the citizens of Illinois. If architected properly, the traditional managed care organization with a quality-oriented approach can achieve the care coordination goals you are looking for. In the past, the Illinois market has been voluntary with no real competition based on quality or customer service. By putting provisions in the contract that allow for market share based on quality performance, care coordination efforts, and possibly customer service rating, the Department could essentially create carrots and sticks forcing the plans to step up the intensity of their coordination. In mature mandatory markets like Michigan, this has proven to be very effective as evidenced in the high quality scores and national rankings for several of the Medicaid HMOs operating there.

It is not our intention to develop a Medicare ACO, but we do see possibilities in contracting directly with ACOs for their services. Currently we are participating in the Michigan Medicaid Demonstration project for ACOs, with approximately 50,000 enrollees enrolled from our health plan.

We could be ready to participate as a Coordinated Care Entity immediately. We have implemented the PASS, COPD, and sickle cell programs, as well as facilitating the formation of a three-tiered PCMH development system offering financial support for our providers in achieving accreditation and linking incentives to quality. We also provide disease management, care management and complex case care management programs. We utilize predictive modeling to assist in enrollee stratification. Our PBM assists in medication reconciliation. Shared care plans are developed with the aid of enrollees and providers, and provided to institutions when enrollees are admitted to/or discharged from hospitals. Included in the latter are medications, PCP name, diagnoses and health care problems with coordinated plans of action. We offer secure online portals for hospitals to share their electronic medical records, which supports coordination of care and transitions from the hospital to the community. We are partnering with the Society of Hospital Medicine's national BOOST program to encourage use of this program in our provider hospitals to help the discharge planning process and assist in the transition to home. Ultimately, this will decrease hospital readmission rates.

Meridian Health Plan is capable of coordinating the care for approximately 778,000 enrollees based on the number of in-network primary care practitioners (a PCP to enrollee ratio of 1:1,285). We have expertise in coordinating care for the TANF, AABD, and the Severe Mentally Ill populations.

Additional Comments

There are undoubtedly areas for comment that we have failed to include or specific questions that we omitted within the general areas we selected. Please feel free to offer comments beyond the specific questions posed, but try to make your comments as specific as possible. The purpose of this paper is to receive your input as HFS moves from the broad policy outlines provided by the law to policies necessary to implement the law in a fair and beneficial manner.

Meridian Health Plan Response (Additional Comments)

A. Meridian Health Plan would like to comment specifically on the Department's plans to operationalize this program. We believe it would be detrimental to the Medicaid Program as a whole to allow many different entities to participate as the care coordinators. A significant administrative burden would result if a large number of neighborhoods and individual health systems are considered as Coordinated Care Entities (CCEs). Greater efficiencies can be achieved by selecting five or fewer CCEs to cover the entire state, and then forcing them to compete on quality and customer service. Enrollment administration will be much simpler and continuity of care improved.

If the Department is considering allowing many different CCEs to service the population, the CCEs will need to be held to strict standards with regards to their capabilities including:

Electronic

- The ability to collect, analyzes, stratify data, and push it out to providers when necessary to provide more efficient care.
- Providing the Department with accurate encounter data for all services, not just those services that might have been provided by their direct patient care centers if the entity is a direct care facility

Regular Outreach

- Reaching out to enrollees for healthy reminders- both by phone and in print
- Giving updates on plan benefits
- Providing newsletters
- Providing enrollee handbooks

Care management/coordination

Staff should be dedicated to strictly providing case management and care coordination to enrolled clients, outside of direct care they might be providing. This means working telephonically with enrollees to help arrange services, appointments, and transportation.

Disease Management

Programs should be in place to provide education, outreach, and care coordination to enrollees with chronic diseases.

B. The Shared Savings Model is a popular concept, but it will do little to address the state's budget concerns. While effective in very specific healthcare services, such as Coronary Artery Bypass Graft surgery and oncology care, Shared Savings is an untested model. Without the widespread establishment of Patient Centered Medical Homes and the capability to transfer of financial and clinical data electronically, it is unlikely that Shared Savings will be successful.

Appendix A – MHP Contact Information

If you have any questions or need additional information, please contact:

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Care Coordination Measures Atlas

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Jumpstart Guide

Follow these steps to identify existing measures of care coordination that may meet your needs.

Step 1: Review Care Coordination Measurement Framework
We organized all measures contained within this *Atlas* according to domains of this framework. A description of the framework follows the figure. Use the **§** symbol to quickly return to this page and continue with Step 2.

Step 2: Read Framework Domain Definitions
We categorized measures by linking them to framework domains. Pay particular attention to domains that pertain to your areas of interest.

Step 3: Examine Care Coordination Measure Mapping Table
The measure mapping table is used to link measures to framework domains. A quick review of the table structure will help you during Step 4.

Step 4: Follow Measure Selection Guide
This guide will walk you through the steps of identifying the domains pertinent to your interests and identifying relevant measures.

Step 5: Review Profiles of Identified Measures
Once you have identified measures that may meet your needs, review details of measure development, testing, and application in the Detailed Measure Profiles section.

For additional background information about the Care Coordination Measures *Atlas*, please refer to Chapter 1: Background.

For additional context and definitions related to care coordination, please refer to Chapter 2: What Is Care Coordination?

To quickly return to this page and continue with the next step in the Jumpstart Guide, click on the **§** symbol. It will appear on the last page of each section, in the bottom left corner.

For users viewing the PDF version of the *Atlas* with Adobe reader software, you can also navigate through the document by clicking on any title found in the Bookmarks Pane to the left of your screen. Another option is to use the Page Pane to the left of your screen and click on the page to which you would like to navigate.

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Chapter 1. Background

Investigation into care coordination definitions, practices, and interventions has recently been sponsored by several national organizations including the Agency for Healthcare Research and Quality (AHRQ), the Institute of Medicine, and the American College of Physicians, among others. While evidence is starting to build about the mechanisms by which care coordination contributes to patient-centered high-value, high-quality care, the health care community is currently struggling to determine how to measure the extent to which this vital activity is or is not occurring.

An AHRQ Evidence Report[1] published in 2007 demonstrated that systematic reviews of interventions to improve care coordination used a broad range of measures, with almost none that focused specifically on the structures, processes, or intermediate outcomes related to coordination. Most reports synthesized clinical and utilization measures. While these are the ultimate critical endpoints, the paucity of care-coordination-specific measurement results in limited insight about the exact mechanisms that produce better outcomes.

In response, AHRQ launched a research project with the following aim:

- To develop an atlas to help evaluators identify appropriate measures for assessing care coordination interventions in research studies and demonstration projects, particularly those measures focusing on care coordination in ambulatory care.

In developing this *Care Coordination Measures Atlas* (henceforth, the *Atlas*), we investigated currently available care coordination measurement approaches based on multiple data sources (e.g., electronic health record systems, consumer surveys, and databases of administrative claims), review of AHRQ Health Information Technology portfolio projects, information from national organizations on their care coordination measurement activities, input from expert and stakeholder/informant panels, and a comprehensive literature search.

The *Atlas* includes measures of patient and caregiver experiences with care coordination, as well as experiences of health care professionals and health system managers. To provide context to *Atlas* users and facilitate presentation of care coordination measurement approaches, we developed a care coordination measurement framework.

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[1] McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol. 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Purpose

The *Atlas* aims to support the field of care coordination measurement by:

- Providing a list of existing measures of care coordination.
- Organizing those measures along two dimensions (domain and perspective) in order to facilitate selection of care coordination measures by *Atlas* users.
- Developing a framework for understanding care coordination measurement, incorporating elements from other proposed care coordination frameworks whenever possible. The framework is designed to support current and future development of this field, while remaining flexible so that it may be adapted as the field matures.

Intended Audiences

The *Atlas* is designed with several key audiences in mind:

- Evaluators of interventions or demonstration projects that aim to improve care coordination (either as a primary or secondary goal).
- Anyone wishing to evaluate the practice of care coordination or its effects outside the context of interventions or demonstration projects, including quality improvement practitioners, recognizing a likely need for this audience to have some technical support from measurement experts or researchers in using the material presented in the *Atlas*.
- Researchers studying care coordination.

Scope

Selection of care coordination measures focused on:

- Those that could reasonably apply to the ambulatory care setting (e.g., a measure of care coordination focused on the transition from inpatient to outpatient care would be eligible for the *Atlas* but not one focused on care processes only applicable to a single hospital stay). The *Atlas* focuses on environments where patients already have access to health care.
- Structural measures hypothesized to reflect better coordination (e.g., presence of a patient registry with an algorithm that identifies complex patients with significant coordination needs).
- Process measures hypothesized to reflect better coordination (e.g., percent of patients asked to review their medication list during a primary care office visit).
- Intermediate outcomes of coordination (e.g., percent of test results communicated to patients within a specific timeframe).
- Those that have been tested with evidence of some valid measurement properties using National Quality Forum (NQF) standards and AHRQ Quality Indicators (QI) program methods.
- Those that at a minimum were developed in association with a logic model that has evidence of causal linkages between the activities measured and outcomes desired.
- Those that have been field tested and have shown feasibility or have had structured expert panel face validity testing. Some measures may be more helpful for research or quality improvement purposes, even if not feasible for performance measurement.
- Measures within the public domain.

The *Atlas* does not include commonly known endpoints, which evaluators are likely to identify easily without the aid of the *Atlas.* These endpoints reflect the Institute of Medicine goals for quality of care—safety, timeliness, effectiveness, efficiency, equity, and patient-centeredness. Specific examples of endpoints used in care coordination studies to date include:

- Emergency room visits
- Hospital readmissions
- Disease-specific hospital admissions
- Mortality
- Disease-specific mortality
- Short-term clinical outcomes (e.g., glycated hemoglobin levels for diabetic patients)
- Functional status (e.g., for congestive heart failure patients)
- Quality of life
- Other patient outcomes (e.g., missed school days for children due to illness)
- Treatment adherence
- Service adherence (e.g., remain in contact with services for mentally ill patients)

Because of concurrent timing with the completion of the *Atlas* and regulatory changes under way related to meaningful use of electronic medical records, the Atlas does not include the measures contained in the final rule, "Medicare and Medicaid Programs: Electronic Health Record Incentive Program" [CMS-0033-F]. This final rule was first publicly available on July 13, 2010, and is effective September 27, 2010. The final rule includes Stage 1 criteria of meaningful use for eligible providers (EP) and the proposed measures associated with them. For example, one of the core objectives for EPs related to care coordination is the capability to electronically exchange key clinical information (for example, problem list, medication list, medication allergies, diagnostic test results) among providers of care and patient-authorized entities. This objective's associated measure is demonstration by EP of performing at least one test of certified electronic health record technology's capacity to electronically exchange key clinical information.

An Emerging Field

This *Atlas*, and the measures it contains, represents early efforts in an emerging field. Care coordination is a complex concept, intertwined with many other concepts relating to quality, delivery, and organization of care. In its broadest sense, almost all aspects of health care and its delivery can be understood as part of care coordination. A very narrow definition, on the other hand, might encompass only a few of the domains included in the measurement framework presented in this report. The scope of the *Atlas* is purposefully broad in an attempt not to limit, but instead to stimulate, further thinking about which measures are most salient and useful to those working to improve the coordination of care.

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Chapter 2. What Is Care Coordination?

Care coordination means different things to different people; no consensus definition has fully evolved. A recent systematic review identified over 40 definitions of the term 'care coordination.'[2] The systematic review authors combined the common elements from many definitions to develop one working definition for use in identifying reviews of interventions in the vicinity of care coordination and, as a result, developed a purposely broad definition: *"Care coordination is the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities and is often managed by the exchange of information among participants responsible for different aspects of care."* For some purposes, they noted that other definitions may be more appropriate. This lack of consensus is perhaps not surprising given the many different participants involved in coordinating care.

In this section we provide a visual definition (see Figure 1) and scenarios to help illustrate care coordination in the absence of a consensus definition. This visual definition may be helpful to some *Atlas* users, and less so to others. Several additional illustrations of care coordination are presented in a recent monograph on quality of cancer care.[3]

The *central goal* of care coordination is shown in the middle of the diagram. The *colored circles* represent some of the possible participants, settings, and information important to care pathways and workflow. The *blue ring* that connects the *colored circles* is **CARE COORDINATION**—namely, anything that bridges gaps (white spaces) along the care pathway (i.e., care coordination activities or broad approaches hypothesized to improve coordination of care). For a given patient at a given point in time, the bridges or *ring* need to form across the applicable *circles*, and through any *gaps* within a given circle, to deliver coordinated care.

Perspectives on Care Coordination

Successes and failures in care coordination will be perceived (and may be measured) in different ways depending on the perspective: patient/family, health care professional(s), or system representative(s). Consideration of views from these three potentially different perspectives is likely to be important for measuring care coordination comprehensively.

Patient/Family Perspective. Care coordination is any activity that helps ensure that the patient's needs and preferences for health services and information sharing across people, functions, and sites are met over time.[4]

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[2] McDonald KM, Sundaram V, Bravata DM,et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol. 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

[3] Taplin SH, Rodgers AB. Toward improving the quality of cancer care: Addressing the interfaces of primary and oncology-related subspecialty care. J Natl Cancer Inst Monogr2010;40:3-10.

[4] Adapted from information published by the National Quality Forum.

Patients, their families, and other informal caregivers experience failures in coordination particularly at points of transition. Transitions may occur between health care entities (see definition under "additional terms") and over time and are characterized by shifts in responsibility and information flow. Patients perceive failures in terms of unreasonable levels of effort required on the part of themselves or their informal caregivers in order to meet care needs during transitions among health care entities.

Health Care Professional(s) Perspective. Care coordination is a patient- and family-centered, team-based activity designed to assess and meet the needs of patients, while helping them navigate effectively and efficiently through the health care system. Clinical coordination involves determining where to send the patient next (e.g., sequencing among specialists), what information about the patient is necessary to transfer among health care entities, and how accountability and responsibility is managed among all health care professionals (doctors, nurses, social workers, care managers, supporting staff, etc.). Care coordination addresses potential gaps in meeting patients' interrelated medical, social, developmental, behavioral, educational, informal support system, and financial needs in order to achieve optimal health, wellness, or end-of-life outcomes, according to patient preferences.[5]

Health care professionals notice failures in coordination particularly when the patient is directed to the "wrong" place in the health care system or has a poor health outcome as a result of poor handoffs or inadequate information exchanges. They also perceive failures in terms of unreasonable levels of effort required on their part in order to accomplish necessary levels of coordination during transitions among health care entities.

System Representative(s) Perspective. Care coordination is the responsibility of any system of care (e.g., "accountable care organization [ACO]") to deliberately integrate personnel, information, and other resources needed to carry out all required patient care activities between and among care participants (including the patient and informal caregivers). The goal of care coordination is to facilitate the appropriate and efficient delivery of health care services both within and across systems.

Failures in coordination that affect the financial performance of the system will likely motivate corrective interventions. System representatives will also perceive a failure in coordination when a patient experiences a clinically significant mishap that results from fragmentation of care.[6]

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[5] Adapted from information published in: Antonelli RC, McAllister JW, Popp J. Making care coordination a critical component of the pediatric healthcare system: A multidisciplinary framework. New York: The Commonwealth Fund; 2009.

[6] Adapted from information published in: McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Additional Terms. Definitions for additional terms relating to care coordination are presented below.

Health care entities. Health care entities are discrete units of the health care system that play distinct roles in delivery of care. The context and perspective will determine who precisely those units are. For example:

- From a patient and family perspective, entities are likely to be individual health care providers with whom the patient and family interact, such as nurses, physicians, and support staff.
- From a health care professional perspective, entities may be individual members of a work group, such as nurses, physicians, and support staff in a particular clinic. Or they may be provider groups, such as a primary care practice, specialty practice, or urgent care clinic.
- From a system representative(s) perspective, entities will likely be groups of providers acting together as a unit, such as medical units in a hospital, hospitals as a whole, specialty clinics within an integrated system, or different clinical settings within the health care system overall (i.e., ambulatory care, inpatient care, emergency care).

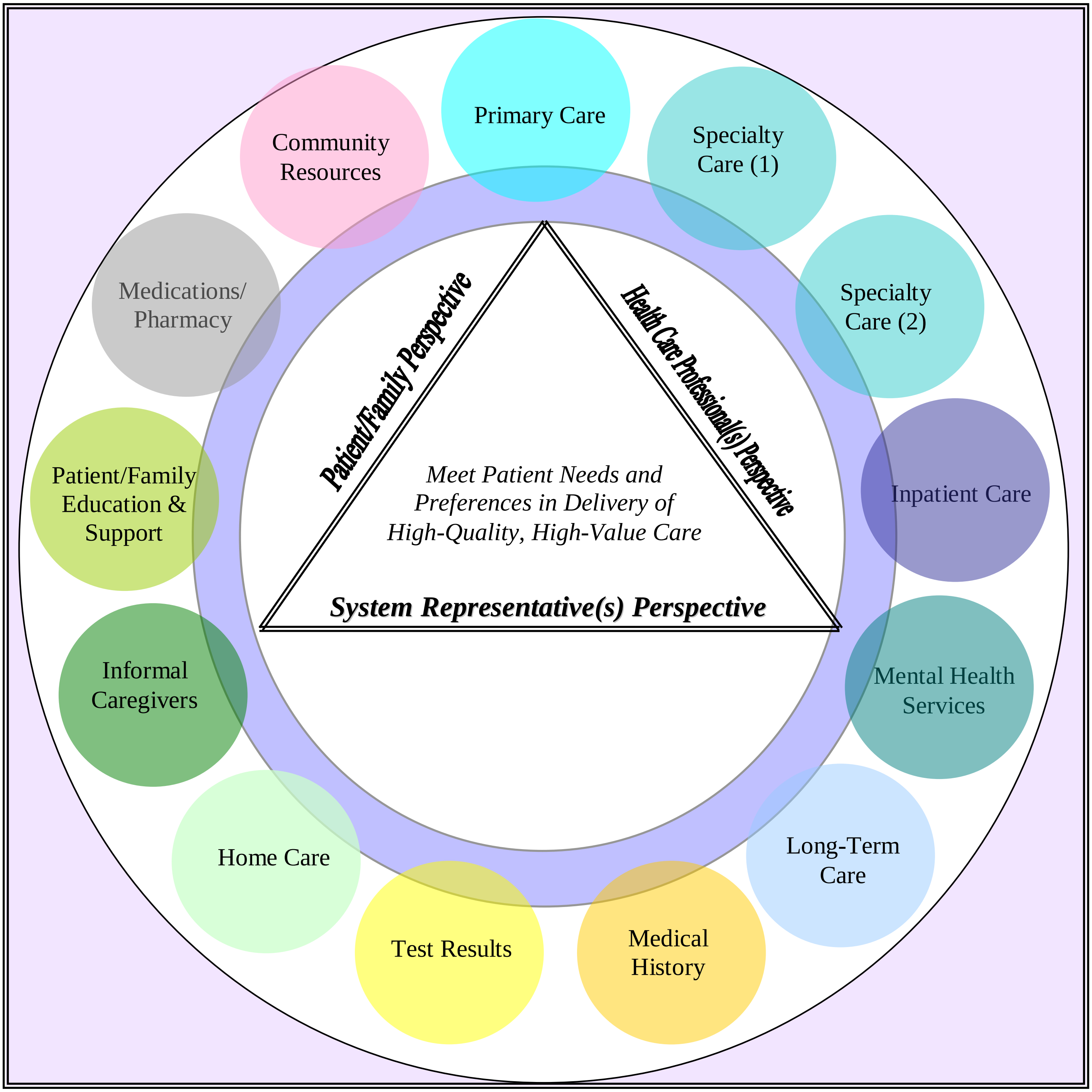
Points of transition. Transitions occur when information about or accountability/ responsibility for some aspect of a patient's care is transferred between two or more health care entities, or is maintained over time by one entity. Often information and responsibility are (or should be) transferred together.

It may be useful to think about two broad categories of transitions:

1. *Transitions between entities of health care system.* Information transfer and/or responsibility shifts:
    - Among members of one care team (receptionist, nurse, physician)
    - Between patient care teams
    - Between patients/informal caregivers and professional caregivers
    - Across settings (primary care, specialty care, inpatient, emergency department)
    - Between health care organizations

2. *Transitions over time.* Information transfer and/or responsibility shifts:
    - Between episodes of care (i.e., initial visit and followup visit)
    - Across lifespan (e.g., pediatric developmental stages, women's changing reproductive cycle, geriatric care needs)
    - Across trajectory of illness and changing levels of coordination need

Figure 1. Care Coordination Ring



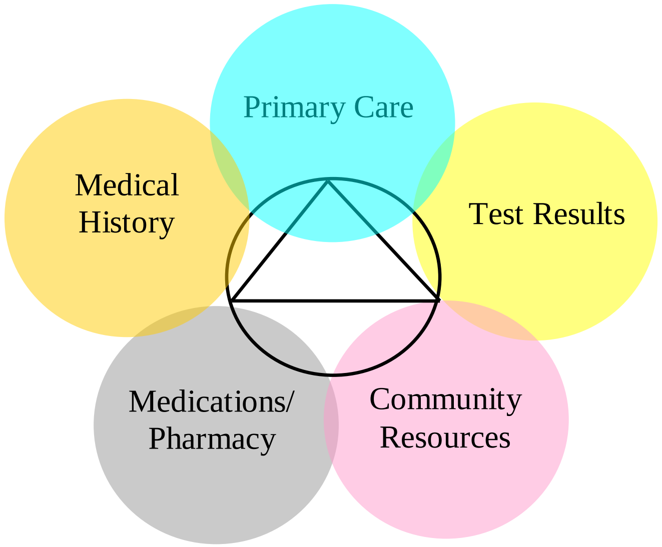
The *central goal* of care coordination is shown in the middle of the diagram. The *colored circles* represent some of the possible participants, settings, and information important to the care pathway and workflow. The *blue ring* connecting the *colored circles* is **CARE COORDINATION**—namely, anything that bridges gaps (white spaces) along the care pathway (i.e., care coordination activities or broad approaches hypothesized to improve coordination of care. See Figure 2.) Successes and failures in care coordination will be perceived (and may be measured) in different ways depending on the perspective: *patient/family, health care professional(s),* or *system representative(s)*.

Example Scenarios

The level of care coordination need will increase with greater system fragmentation (e.g., wider gaps between circles), greater clinical complexity (e.g., greater number of circles on ring), and decreased patient capacity for participating effectively in coordinating one's own care, as illustrated by the following scenarios. The level of need is not fixed in time, nor by patient. Assessment of level of care coordination is likely important to tailor interventions appropriately and to evaluate their effectiveness.

Scenario 1. Mrs. Jones is a healthy 55-year-old woman. She visits her primary care provider, Dr. I. Care, once a year for a routine physical. Dr. Care practices in a primary care clinic with an electronic medical record (EMR) system and on-site laboratory and radiology services. At Mrs. Jones' annual physical, Dr. Care ordered several blood tests to evaluate her cholesterol and triglyceride levels. Mrs. Jones also mentioned that she is having lingering pain in her ankle after a previous sprain. Dr. Care ordered an x-ray. After receiving the blood test results via the electronic medical record system, Dr. Care sees that Mrs. Jones' cholesterol is high and prescribes a medication. She submits the prescription directly to the pharmacy via a link from the EMR. She receives electronic notification that the x-ray does not show any fracture. She calls Mrs. Jones to refer her to a nearby physical therapy practice. Mrs. Jones picks up her medication from the pharmacy and calls the physical therapist to schedule an appointment.

SCENARIO 1. VISUAL
Complexity: Low
Fragmentation: Low
Patient Capacity: High
Care Coordination Need: Minimal



Scenario 2. Mr. Andrews is a 70-year-old man with congestive heart failure and diabetes. He uses a cane when walking and recently has had some mild memory problems. His primary care physician, Dr. Busy, is part of a small group physician practice focused on primary care. The primary care clinic includes a laboratory, but they refer their radiology tests to a nearby

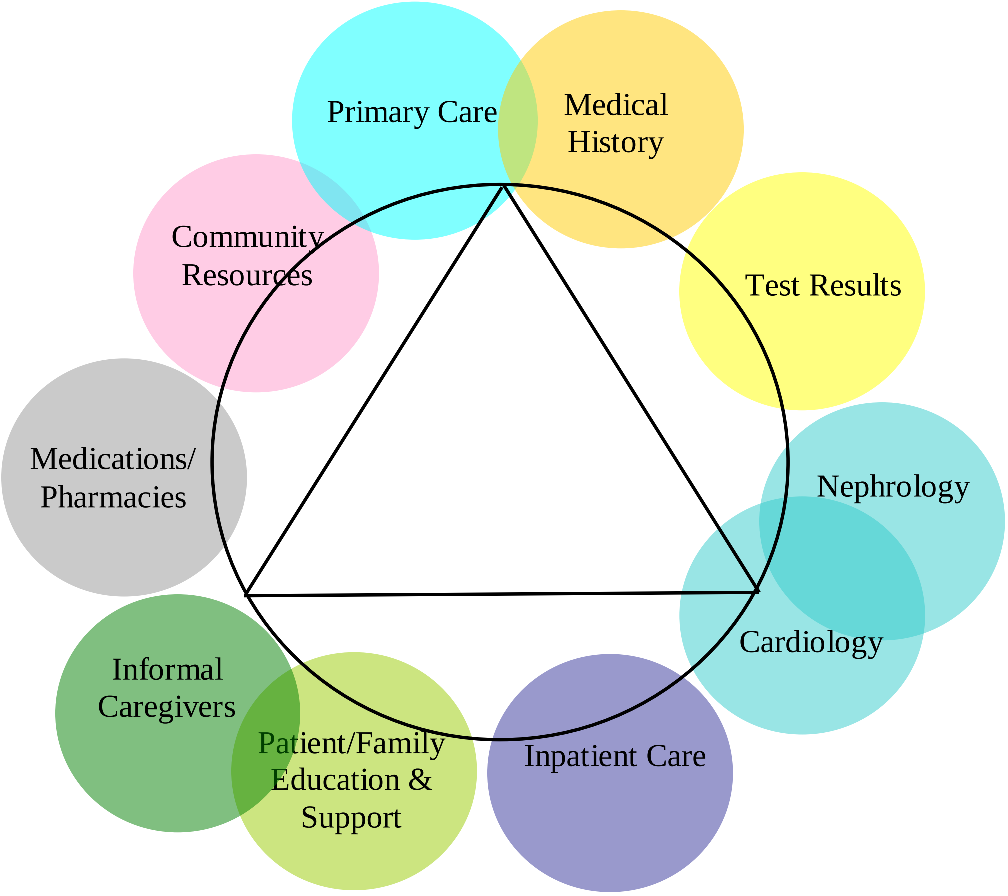
radiology center. Mr. Andrews also sees Dr. Kidney, a nephrologist, and Dr. Love, a cardiologist. Both specialists are part of a specialty group practice that is not affiliated with Dr. Busy's clinic. Their specialty practice includes an on-site laboratory, radiology clinic, and pharmacy. Mr. Andrews has prescriptions filled at the specialty clinic pharmacy after his appointments with Drs. Kidney and Love and picks up medications prescribed by Dr. Busy at a pharmacy near his home. Mr. Andrews has a daughter who lives nearby but works full time. Because he has trouble getting to the grocery store to do his shopping, he receives meals at his home 5 days a week through a meals-on-wheels senior support service. His daughter has hired a caregiver to help Mr. Andrews with household tasks for two hours three days a week.

During a recent meal delivery, the program staffer noticed that Mr. Andrews seemed very ill. He called an ambulance, and Mr. Andrews was taken to the emergency department. There he was diagnosed with a congestive heart failure exacerbation and was admitted. During his initial evaluation, the admitting physician asked Mr. Andrews about which medications he was taking, but the patient could not recall what they were or the doses. The physician on the hospital team contacted Dr. Busy, who provided a medical history and general list of medications. Dr. Busy noted that Mr. Andrews may have had dosing changes after a recent appointment with Dr. Love. In addition, Dr. Busy noted that Mr. Andrews may be missing medication doses because of his forgetfulness. He provided the hospital team with contact information for Drs. Love and Kidney. He also asked that a record of Mr. Andrews' hospital stay be sent to his office upon his discharge.

Mr. Andrews was discharged from the hospital one week later. Before going home, the nurse reviewed important information with him and his daughter, who was taking him home. They went over several new prescriptions and details of a low-salt diet. She told him to schedule a followup appointment with his primary care physician within 2 days and to see his cardiologist in the next 2 weeks. Mr. Andrews was very tired so his daughter picked up the prescriptions from a pharmacy near the hospital, rather than the one Mr. Andrews usually uses.

SCENARIO 2: VISUAL

Complexity: High
Fragmentation: Moderate
Patient Capacity: Low
Care Coordination Need: Extensive



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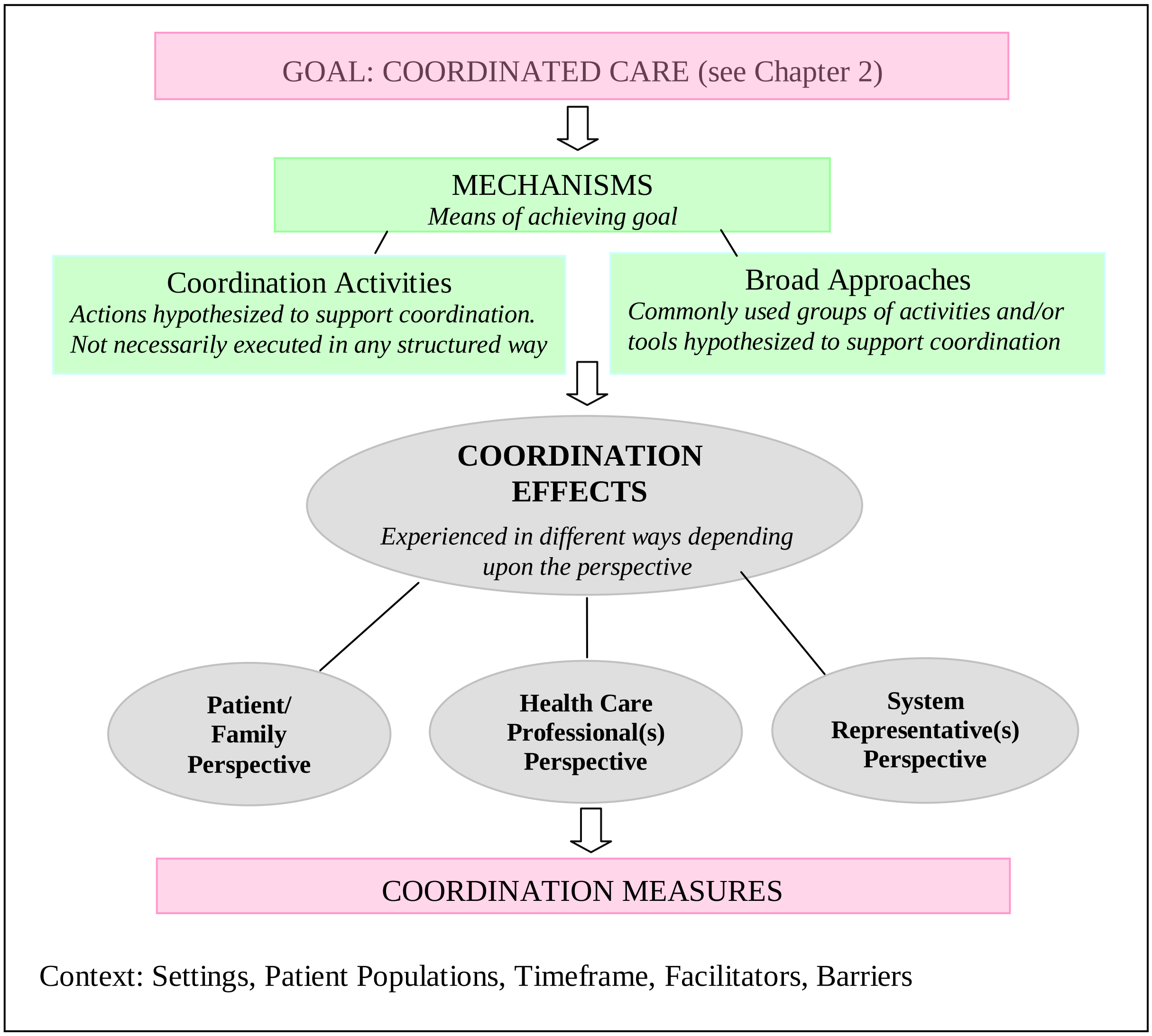
Chapter 3. Care Coordination Measurement Framework

Elements of the Framework

To help organize measures of care coordination, we developed a framework diagramming key domains that are important for measuring care coordination and their relationship to potentially measurable effects (see Figure 2). When laid out in the Measure Mapping Table (see Chapter 4), this serves as an indexing system to map the landscape of available measures and measurement gaps for care coordination. Because the care coordination topic is potentially quite broad, it is vital to have a way to see where measurement work has and has not been done. This indexing approach may help guide future measurement work by showing what regions of the measurement landscape are as yet unexplored or underdeveloped.

Figure 2. Care Coordination Measurement Framework Diagram



Goal. The framework starts at the top with the goal of achieving coordinated care. Chapter 2 describes through definitions, visual means, and patient scenarios ways to think about this goal. In short, care coordination is a means to help achieve *care goals*: it aims to meet patient needs and preferences and to facilitate delivery of high-quality, high-value care.

Mechanisms. Various *mechanisms* may be employed to facilitate this goal of care coordination. *Coordination activities* are actions that help achieve coordination, whether employed in an improvised or systematic way. *Broad approaches* aimed at improving the delivery of health care, including improving or facilitating coordination, often incorporate a number of coordination activities. Such approaches are often complex in intent and design. The specific activities employed when implementing the broad approaches often vary, are not always well described, and have coordination-related components that are not necessarily clearly delineated.

Table 1 lists *coordination activities* that have been hypothesized or demonstrated to facilitate care coordination and *broad approaches* commonly used to improve the delivery of health care, including improving care coordination. These *mechanisms* make up the *domains* of our care coordination measurement framework. As the knowledge base around care coordination grows, we expect this list to change. See domain definitions.

Table 1. Mechanisms for Achieving Care Coordination (Domains)

COORDINATION ACTIVITIES
Establish Accountability or Negotiate Responsibility
Communicate
Facilitate Transitions
Assess Needs and Goals
Create a Proactive Plan of Care
Monitor, Follow Up, and Respond to Change
Support Self-Management Goals
Link to Community Resources
Align Resources with Patient and Population Needs
BROAD APPROACHES
Teamwork Focused on Coordination
Health Care Home
Care Management
Medication Management
Health IT-Enabled Coordination

Effects. The effects of care coordination mechanisms—whether specific activities or broad approaches—will be perceived differently depending upon who is asked: patient and/or family, health care professional(s), or system representative(s).

The *measurement perspective* reflects the source of data used to understand the effect or experience. The data source is a function of who is asked or assessed. Table 2 shows some examples related to care coordination.

Table 2. Examples of Effects or Experiences From Three Perspectives

PATIENT/FAMILY PERSPECTIVE
Patient report of satisfaction with coordination of care Family report of confusion or hassle (e.g., number of contacts needed to schedule a clinic visit) Patient report of unnecessary care (e.g., unnecessary tests, procedures, emergency room visits, or hospitalizations)
HEALTH CARE PROFESSIONAL(S) PERSPECTIVE
Nurses reports of confusion or hassle (e.g., time spent coordinating referrals) Physician survey on effectiveness of medication management process at averting drug interaction complications
SYSTEM REPRESENTATIVE(S) PERSPECTIVE
Quality of care (safe, effective, efficient, timely, equitable, patient-centered) measured through analysis of medical chart data, electronic health record, or administrative data Health care utilization by a group of patients (e.g., hospital readmissions, emergency room visits) Costs

Participants. Care coordination necessarily involves multiple participants. Chapter 2: What is Care Coordination? outlines some of the groups of participants typically involved in patient care and provides examples of gaps between participants and how they may be bridged by coordination activities. When selecting care coordination measures, it may be helpful to consider which participants are interacting in the activities of interest to be measured and from which perspectives you wish to measure those interactions. For example, measures that assess communication may focus on communication between patients/family and health care professionals, communication within teams of health care professionals, or communication across health care teams or settings. (When detailing specific measures, we provide information on types of participant interactions for items related to the Communicate domain or its subdomains).

Note that a single interaction may be measured from multiple perspectives. For example, communication between patients and physicians during office visits might be measured from the patient perspective by asking patients how much they agree that their doctor listens to their concerns about conflicting advice from different health care professionals. It might be measured from the health care professional(s) perspective by asking physicians whether they believe they have adequate time during visits to convey information about referrals and followup plans. The interaction also might be measured from a system representative(s) perspective by examining the percent of office visits where discussion of a plan of care was documented in the electronic medical record. All three measures evaluate communication between patients and health care professionals but provide different views on the effect or experience of that activity.

While participant interactions are important to consider for many coordination activities, they may be particularly important to consider for several additional framework domains, including Teamwork Focused on Coordination (Which teams? Coordination of which participants?), Establish Accountability or Negotiate Responsibility (Whose responsibility? Accountability for whom?), and Facilitate Transitions (Transitions between which participants? Across which settings?). For further discussion of types of transitions, see Points of Transition in Chapter 2.

Coordination Measures in the *Atlas*. The effects noted in the Chapter 1 are the ultimate endpoints of interest (e.g., clinical outcomes, utilization-related outcomes, quality of life, etc.). However, the *Atlas* focuses on perspectives as they relate to whether specific activities or approaches were carried out, or what intermediate outcome these mechanisms produced, as gateways to potentially achieving the ultimate endpoint experiences desired by the different stakeholders.

Context. Care coordination measurement must also consider the context: which patient population(s), which setting(s), what timeframe. In addition, care coordination effects may be magnified or muted by facilitators and barriers of care coordination (e.g., effect modifiers). Therefore, it may be advisable, in addition to using measures from the *Atlas*, to examine potential facilitators and barriers to successful implementation of an intervention. Examples of factors that may facilitate or impede care coordination, depending upon the specific circumstances, include the availability of resources, payment structure, patient complexity and capacity (e.g., Chapter 2 patient scenarios), and local culture.

Harmonizing Across Frameworks

The goal in creating a care coordination framework was to develop a list of domains that are important to care coordination. Existing measures of care coordination were mapped to these domains to help users identify measures that might be of interest in relation to their measurement objectives.

To create this framework, several other proposed frameworks for care coordination were reviewed. We drew heavily on these past works and, when possible, tried to be consistent in use of terminology. However, core domains also were organized differently from other frameworks because of our goal to identify potentially measurable aspects of care coordination. Therefore, some conceptual domains were grouped that were separate in other works and some provided more granularity. Table 3 outlines key sources and their relation to our framework domains.

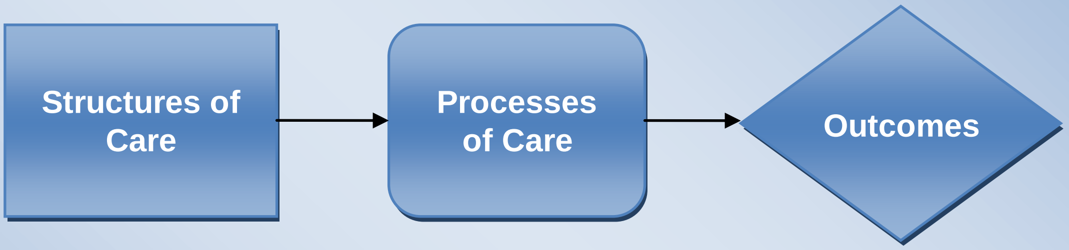
Care coordination is an emerging field with a rapidly growing evidence base. This framework is intended to grow with the field. Elements of the framework that define each box, and that are noted in bold in Figure 2, are core components that we do not expect to undergo much change. However it is defined, care coordination will always have goals, it will be achieved through some combination of mechanisms, and it will be experienced through effects. Those effects will likely be perceived differently from three key perspectives: that of patients and family, of health care professionals, and of system representatives. Coordination measures can be categorized using these perspectives and domains related to mechanisms. Thus, as currently presented, this framework provides a starting place for understanding care coordination and, in particular, for indexing measures of care coordination.

For an explanation of how our Care Coordination Measurement Framework might be envisioned as a subset of broader models, see the box below and continuing on the following page. The box shows two examples of the relationship between this framework and other conceptual models, the Donabedian Model and the Organizational Design Model, discussed in Chapter 5 of the AHRQ Care Coordination Evidence Report, "Conceptual Frameworks and Their Application to Assessing Care Coordination."[7]

Relation to Other Conceptual Models

Our care coordination measurement framework may be understood in relation to other commonly used conceptual models. In particular, we find the **Donabedian** and **Organizational Design** models to be valuable, somewhat contrasting, lenses through which to view the flexibility of our framework. To help link our framework to these models, we SMALL CAP elements of our framework and *italicize* elements of the models.

Donabedian Model



Many of the BROAD APPROACHES included in our framework are *structures of care*, such as establishment of a health care home, use of a health IT system to improve coordination, or designation of a case manager. These are structures of a system (whether a clinic, hospital, or integrated network) that will influence processes of care. The COORDINATION ACTIVITIES in our framework are *processes of care*. These are specific actions taken in the delivery of care, such as transferring information and assessing needs and goals. The EFFECTS, or *outcomes*, of care coordination mechanisms—both BROAD APPROACHES and COORDINATION ACTIVITIES—are perceived in different ways from different PERSPECTIVES.

For our purposes, strengths of the Donabedian model include its familiarity to the health care quality research community and its basis for different types of measures (structure, process, and outcome measures). However, in its original simplified form above, it does not reflect the complexities of health care delivery or acknowledge the need for tailoring interventions to fit a particular context.

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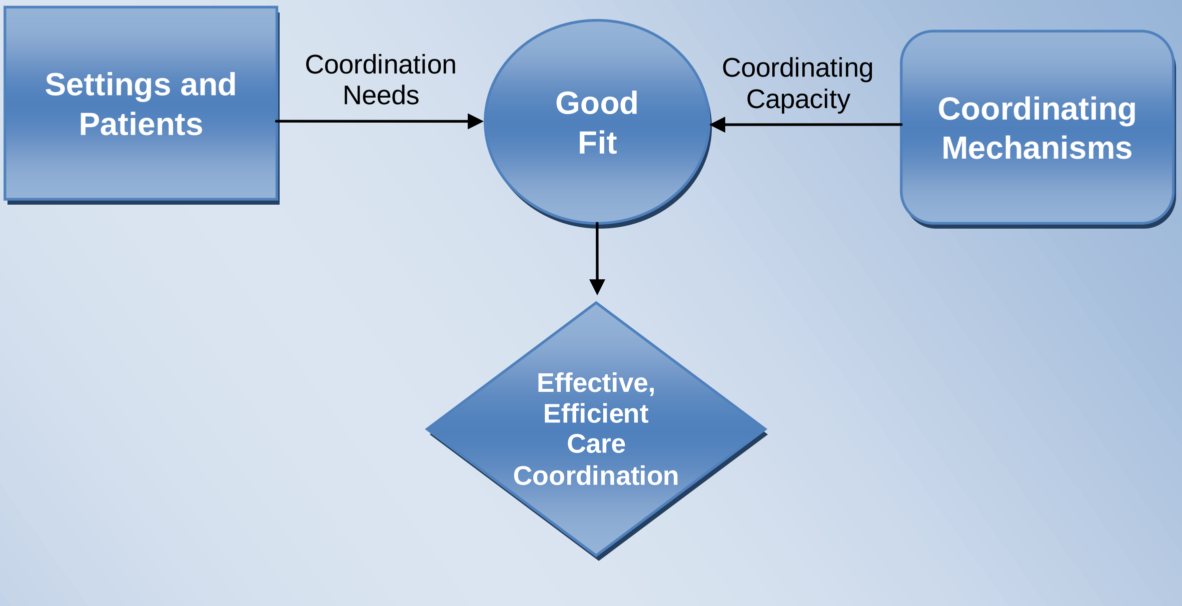
[7] McDonald KM, Sundaram V, Bravata DM, et al. Conceptual frameworks and their application to assessing care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7, Chapter 5. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Organizational Design Model



The CONTEXT of our framework—which includes the clinical *setting* and characteristics of the *patient population*—influence the need for care coordination. In particular, *coordination needs* are driven by the degree of system fragmentation, the complexity of the patient and the patient's capacity for self-management and coordination (see the clinical scenarios in Chapter 2: What is Care Coordination?). The ability of a system (whether a clinic, hospital, or integrated network) to meet those coordination needs—its *coordinating capacity*—is determined in part by the *coordinating mechanisms* in use, such as carrying out key COORDINATION ACTIVITIES or implementing particular BROAD APPROACHES. When there is a *good fit* between coordination needs and coordinating capacity, the EFFECT will be a system that delivers *effective and efficient care coordination*, which will be perceived in different ways from different PERSPECTIVES. When fit is poor, different coordinating mechanisms may be selected, or implementation of existing mechanisms modified, to try to improve the fit.

For our purposes, a key strength of the Organizational Design Model is that it acknowledges that, to be successful, care coordination mechanisms must be tailored to a particular context. An important limitation is that it does not provide insight into how to match capacity with needs or how to assess fit (short of measuring the ultimate outcomes of interest).

References

Donabedian A. The criteria and standards of quality. Ann Arbor, MI: Health Administration Press; 1982.
Nadler D, Tushman M. Strategic organization design. Glenview, IL, and London, England: Scott, Foresman and Company; 1988.
McDonald KM, Sundaram V, Bravata DM, et al. Conceptual frameworks and their application to assessing care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7, Chapter 5. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Table 3. Relation Between the Care Coordination Measurement Framework and Other Key Sources

FRAMEWORK DOMAINS	KEY SOURCES
COORDINATION ACTIVITIES	
Establish Accountability or Negotiate Responsibility	*NQF:* Communication domain includes – all medical home team members work within the same plan of care and are measurably coaccountable for their contributions to the shared plan and achieving the patient's goals.
Communicate	*Antonelli:* Care coordination competency – communicates proficiently; care coordination function – manages continuous communication. *NQF:* Framework domain – Communication available to all team members, including patients and family.
Interpersonal Communication	*Coiera:* All information exchanged in health care forms a "space"; the communication space is the portion of all information interactions that involves direct interpersonal interactions, such as face-to-face conversations, telephone calls, letters, and email.
Information Transfer	*MPR:* Care coordination activity – send patient information to primary care provider. *NQF:* Communication domain includes – availability of patient information, such as consultation reports, progress notes, test results, and current medications to all team members caring for a patient reduces the chance of error.
Facilitate Transitions	*Antonelli:* Care coordination function – supports/facilitates care transitions. *CMS Definition of Case Management:* §440.169(c) Case management services are defined for transitioning individuals from institutions to the community. *NQF:* Framework domain – transitions or "hand-offs" between settings of care are a special case because currently they are fraught with numerous mishaps that can make care uncoordinated, disconnected, and unsafe. Some care processes during transition deserve particular attention, including involvement of team during hospitalization, nursing home stay, etc.; communication between settings of care; and transfer of current and past health information from old to new home.
Assess Needs and Goals	*Antonelli:* Care coordination function – completes/analyzes assessments. *CMS Definition of Case Management:* §440.169(d) Case management includes assessment and periodic reassessment of an eligible individual to determine service needs, including activities that focus on needs identification, to determine the need for any medical, educational, social, or other services. *MPR:* Care coordination activity – assess patient's needs and health status; develop goals.

FRAMEWORK DOMAINS	KEY SOURCES
Create a Proactive Plan of Care	*Antonelli:* Defining characteristic of care coordination – proactive, planned and comprehensive; care coordination function – develops care plans with families; facile in care planning skills. *CMS Definition of Case Management:* §440.169(d)(2) Case management assessment includes development and periodic revision of a specific care plan based on the information collected through an assessment or reassessment that specifies the goals and actions to address the medical, social, educational, and other services needed by the eligible individual, including activities such as ensuring the active participation of the eligible individual and working with the individual (or the individual's authorized health care decisionmaker) and others to develop those goals and identify a course of action to respond to the assessed needs of the eligible individual. *MPR:* Care coordination activity – develop a care plan to address needs. *NQF:* Framework domain – Proactive Plan of Care and Followup is an established and current care plan that anticipates routine needs and actively tracks up-to-date progress toward patient goals.
Monitor, Follow Up, and Respond to Change	*Antonelli:* Care coordination function – manages/tracks tests, referrals, and outcomes. *CMS Definition of Case Management:* §440.169(d)(1) Case management assessment includes periodic reassessment to determine whether an individual's needs and/or preferences have changed. §440.169(d)(2) Case management includes monitoring and followup activities, including activities and contacts that are necessary to ensure that the care plan is effectively implemented and adequately addresses the needs of the eligible individual. If there are changes in the needs or status of the individual, monitoring and followup activities include making necessary adjustments in the care plan and service arrangements with providers. *MPR:* Care coordination activities – monitor patient's knowledge and services over time; intervene as needed; reassess patients and care plan periodically. *NQF:* Plan of Care domain includes – followup of tests, referrals, treatments, or other services.
Support Self-Management Goals	*Antonelli:* Defining characteristic of care coordination – promotes self-care skills and independence; care coordination function – coaches patients/families. *MPR:* Care coordination activity – educate patient about condition and self-care. *NQF:* Plan of Care domain includes – self-management support.

FRAMEWORK DOMAINS	KEY SOURCES
Link to Community Resources	*Antonelli:* Care coordination competency – integrates all resource knowledge. *CMS Definition of Case Management:* §440.169(d)(2) Case management includes referral and related activities (such as scheduling appointments for the individual) to help an individual obtain needed services, including activities that help link eligible individuals with medical, social, educational providers, or other programs and services that are capable of providing needed services to address identified needs and achieve goals specified in the care plan. *MPR:* Care coordination activity – arrange needed services, including those outside the health system (meals, transportation, home repair, prescription assistance, home care). *NQF:* Plan of Care domain includes – community services and resources. The Plan of Care includes community and nonclinical services as well as traditional health care services that respond to a patient's needs and preferences and contribute to achieving the patient's goals.
Align Resources with Patient and Population Needs	*MPR:* Care coordination activity – arrange needed services, including those within the health system (preventive care with primary care provider; specialist visits; durable medical equipment; acute care). *NQF:* A principle of care coordination is that care coordination is important to all patients, but some populations are particularly vulnerable to fragmented, uncoordinated care on a chronic basis, including (not mutually exclusive): children with special health care needs; the frail elderly; persons with cognitive impairments; persons with complex medical conditions; adults with disabilities; people at the end of life; low-income patients; patients who move frequently, including retirees and those with unstable health insurance coverage; and behavioral health care patients.
BROAD APPROACHES	
Teamwork focused on Coordination	*Antonelli:* Care coordination competency – applies team-building skills; care coordination function – facilitates team meetings.
Healthcare Home	*NQF:* Framework domain – Health Care Home is a source of usual care selected by the patient (such as a large or small medical group, a single practitioner, a community health center, or a hospital outpatient clinic).
Care Management	See elements of CMS case management definition mapped under other domains.
Medication Management	*MPR:* Care coordination activity – review medications. *NQF:* Transitions or "hand-offs" domain includes medication reconciliation.

FRAMEWORK DOMAINS	KEY SOURCES
Health IT-enabled Coordination	*Antonelli:* Care coordination competency – adept with information technology; care coordination function – uses health information technology. *NQF:* Framework domain – information systems – the use of standardized, integrated electronic information systems with functionalities essential to care coordination is available to all providers and patients.

Antonelli = Antonelli RC, McAllister JW, Popp J. Making care coordination a critical component of the pediatric health system: A multidisciplinary framework. New York, NY: The Commonwealth Fund. May 2009. Publication No. 1277.

CMS Definition of Case Management = Centers for Medicare and Medicaid Services. Medicaid Program; Optional state plan case management services. 42 Code of Federal Regulations 441.18 2007 4 December;72(232):68092-3.

Coiera = Coeira E. Guide to health informatics. 2nd ed. London, England: Hodder Arnold, a member of the Hodder Headline Group; 2003.

MPR = Coordinating care for Medicare beneficiaries: Early experiences of 15 demonstration programs, their patients, and providers: Report to Congress. Princeton, NJ: Mathematica Policy Research, Inc.; May 2004.

NQF = National Quality Forum. National Quality Forum-endorsed definition and framework for measuring care coordination. Washington, DC: National Quality Forum; 2006.

Definitions of Care Coordination Domains

The care coordination measurement framework includes activities that have been hypothesized as important for carrying out care coordination and broad approaches that have been proposed as means of achieving coordinated care. This set of domains may change as knowledge about care coordination grows. For additional details on key sources that informed development of this set of framework domains, see Table 3.

The term 'care coordination' is cited often in the health services literature, but is rarely clearly defined. The 2007 AHRQ Evidence Report on care coordination identified more than 40 definitions of coordination pertaining to a diverse set of patient populations, health care scenarios, and organizational situations.[8] Descriptions of care coordination activities and interventions are also often ambiguous. This is particularly true of the broad approaches, which are frequently described by referring to general processes or roles without specifying who performs which actions under which circumstances. These are also usually wide in scope, with goals of improving aspects of patient care beyond just care coordination.

The working definitions for each framework domain were developed by drawing on a variety of sources. The intent is to help *Atlas* users understand how care coordination measures were mapped to the framework domains and to identify more easily the domains most relevant to their evaluation objectives. For details of this mapping process, see Chapter 4 – Measure Mapping.

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[8] McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

Activities

Establish accountability or negotiate responsibility. Make clear the responsibility of participants in a patient's care for a particular aspect of that care. The accountable entity (whether a health care professional, care team, or health care organization) will be expected to answer for failures in the aspect(s) of care for which it is accountable. Specify who is primarily responsible for key care and coordination activities, the extent of that responsibility, and when that responsibility will be transferred to other care participants.

Communicate.[9] Share knowledge among participants in a patient's care. Communication may occur through a wide variety of channels, but for the purposes of measurement, we distinguish two key modes of communication:

> *Interpersonal communication.* The give-and-take of ideas, preferences, goals, and experiences through personal interactions. Examples include face-to-face interactions, telephone conversations, email, and letters.
>
> *Information transfer.* The flow of information, such as medical history, medication lists, test results, and other clinical data, from one participant in a patient's care to another. For example, a written summary of laboratory results sent from a primary care practice to the patient, verbal confirmation of a laboratory value from the laboratory to a physician, or transfer of a disk containing CT images from a hospital to a primary care office.

While in practice interpersonal communication and information transfer often occur together, for the purposes of measurement, *interpersonal communication* is distinguished from information transfer by a two-way exchange of knowledge through personal interactions, while *information transfer* is characterized by the transfer of data—whether orally, in writing, or electronically—and does not necessarily involve direct interaction between sender and receiver. Many, but not all, care coordination measures include aspects of both interpersonal communication and information transfer and, as such, we expect that many measures will map to both subdomains.

Facilitate transitions. Facilitate specific transitions, which occur when information about or accountability for some aspect of a patient's care is transferred between two or more health care entities or is maintained over time by one entity. Facilitation may be achieved through activities designed to ensure timely and complete transmission of information or accountability.

> *Across settings.* For example, transitions from the inpatient (hospital) setting to the outpatient setting (i.e., physician's offices); or transitions between ambulatory care settings (i.e., primary care to specialty clinics).
>
> *As coordination needs change.* For example, the transition from pediatric to adult care; transitions over the course of a woman's changing reproductive cycle; and transitions between acute episodes of care and chronic disease management.

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[9] Informed by Coeira E. Guide to health informatics. 2nd ed. London, England: Hodder Arnold, a member of the Hodder Headline Group; 2003.

Assess needs and goals.[10] Determine the patient's needs for care and for coordination, including physical, emotional, and psychological health; functional status; current health and health history; self-management knowledge and behaviors; current treatment recommendations, including prescribed medications; and need for support services.

Create a proactive plan of care.[11] Establish and maintain a plan of care, jointly created and managed by the patient/family and health care team, which outlines the patient's current and longstanding needs and goals for care and/or identifies coordination gaps. The plan is designed to fill gaps in coordination, establish patient goals for care and, in some cases, set goals for the patient's providers. Ideally, the care plan anticipates routine needs and tracks current progress toward patient goals.

Monitor, follow up, and respond to change. Jointly with the patient/family, assess progress toward care and coordination goals. Monitor for successes and failures in care and coordination. Refine the care plan as needed to accommodate new information or circumstances and to address any failures. Provide necessary followup care to patients.

Support self-management goals. Tailor education and support to align with patients' capacity for and preferences about involvement in their own care. Education and support include information, training, or coaching provided to patients or their informal caregivers to promote patient understanding of and ability to carry out self-care tasks, including support for navigating their care transitions, self-efficacy, and behavior change.

Link to community resources. Provide information on the availability of and, if necessary, coordinate services with additional resources available in the community that may help support patients' health and wellness or meet their care goals. Community resources are any service or program *outside the health care system* that may support a patient's health and wellness. These might include financial resources (e.g., Medicaid, food stamps), social services, educational resources, schools for pediatric patients, support groups, or support programs (e.g., Meals on Wheels).

Align resources with patient and population needs. *Within the health care setting*, assess the needs of patients and populations and allocate health care resources according to those needs. At the population level, this includes developing system-level approaches to meet the needs of particular patient populations. At the patient level, it includes assessing the needs of individual patients to determine whether they might benefit from the system-level approach. For example, a system-level approach to meeting the needs of patients with cancer (the population) might be to establish a multidisciplinary tumor board meeting to help coordinate cancer care among the many relevant specialties. In this scenario, aligning a particular patient's needs with available resources would include assessing whether that individual would likely benefit by having his/her case presented at the multidisciplinary tumor board meeting either for coordinating a consensus recommendation or for simplifying the patient's care pathway or both.

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[10] Adapted from: Coordinating care for Medicare beneficiaries: Early experiences of 15 demonstration programs, their patients, and providers: Report to Congress. Princeton, NJ: Mathematica Policy Research, Inc.; May 2004.

Broad Approaches Potentially Related to Care Coordination

Teamwork focused on coordination.[11] Integration among separate health care entities participating in a particular patient's care (whether health care professionals, care teams, or health care organizations) into a cohesive and functioning whole capable of addressing patient needs.

Health care home.[12] A source of usual care selected by the patient that functions as the central point for coordinating care around the patient's needs and preferences. This includes coordination among all participants in a patient's care, such as the patient, family members, other caregivers, primary care providers, specialists, other health care services (public and private), and nonclinical services, as needed and desired by the patient. Other terms are frequently used to describe this model, such as medical home, patient-centered medical home, and advanced primary care. Building on the work of a large and growing community, the Agency for Healthcare Research and Quality defines a medical home as not simply a place but a model of the organization of primary care that delivers the core functions of primary health care. The medical home encompasses several functions and attributes: it is patient-centered and provides superb access to comprehensive and coordinated care and employs a system-based approach to quality and safety.

Care management. A process designed to assist patients and their support systems in managing their medical/social/mental health conditions more efficiently and effectively. Case management and disease management are included in this definition and further defined below.

> *Case management.*[12] The Case Management Society of America defines case management as: "A collaborative process of assessment, planning, facilitation and advocacy for options and services to meet an individual's health needs through communication and available resources to promote quality cost-effective outcomes."
>
> *Disease management.*[12] The Disease Management Association of America defines this term as: "A system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant. Disease management supports the physician or practitioner/patient relationship and plan of care, emphasizes prevention of exacerbations and complications utilizing evidence-based practice guidelines and patient empowerment strategies, and evaluates clinical, humanistic, and economic outcomes on an ongoing basis with the goal of improving overall health."

Medication management.[13] Reconciling discrepancies in medication use in order to avoid adverse drug events associated with transitions in care. This can involve review of the patient's complete medication regimen at the time of admission/transfer/discharge, including assessing

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[11] Adapted from McDonald KM, Sundaram V, Bravata DM, et al. Care coordination. In: Shojania KG, McDonald KM, Wachter RM, and Owens DK, eds. Closing the quality gap: A critical analysis of quality improvement strategies. Technical Review 9 (Prepared by Stanford-UCSF Evidence-Based Practice Center under contract No. 290-02-0017). Vol 7. Rockville, MD: Agency for Healthcare Research and Quality, June 2007. AHRQ Publication No. 04(07)-0051-7.

[12] Adapted from National Quality Forum. National Quality Forum-endorsed definition and framework for measuring care coordination. Washington, DC: National Quality Forum; 2006.

[13] Adapted from information available at: Agency for Healthcare Research and Quality. AHRQ Patient Safety Network Glossary. http://www.psnet.ahrq.gov/glossary.aspx. Accessed: 26 September 2010.

use of over-the-counter medications and supplements; comparison across information sources and settings; or direct communication between patients and providers.

Health IT-enabled coordination. Using tools, such as electronic medical records, patient portals, or databases, to communicate information about patients and their care between health care entities (health care professionals, care teams, or health care organizations) or to maintain information over time.

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Chapter 4. Measure Mapping

Measure Mapping Table

To lay out information about the care coordination measurement landscape in two dimensions, a Measure Mapping Table was developed to show the intersection of *care coordination domains* and *measurement perspectives*. Measures were indexed, or “mapped,” according to the care coordination domains included in the care coordination measurement framework (see Figure 2), in order to indicate which aspects of care coordination a particular instrument measures. This measure indexing, or mapping, serves two main purposes:

1. It provides an overview of the current care coordination measurement field, highlighting areas with many available measures and those with few measures.
2. It allows *Atlas* users to quickly narrow the field of available care coordination measures, homing in on those that assess aspects of care coordination of particular interest to the user.

Measures relevant to care coordination that are included in this *Atlas* were mapped using the Measure Mapping Table (see Table 4). The table is structured to simultaneously categorize measures by perspective—patient/family, health care professional(s), or system representative(s)—and by care coordination domain (specific care coordination activities and broad approaches). The perspective (seen in the columns of the table) reflects how care coordination is measured: who is providing the information (e.g., patients, primary care provider, chart review), what data are used (e.g., patient satisfaction survey scores, medical record information, administrative data), and how data are aggregated during analyses (e.g., by patient, by physician group, by payer, etc.). The domains reflect the specific components of care coordination that are addressed by each measure, or individual items within the measure. The Definitions of Care Coordination Domains were used to guide measure mapping.

A filled square (■) indicates that the measure contains 3 or more individual items that pertain to that domain. Composite measures or summary scores are also indicated with a filled square. An open square (□) indicates that the measure contains only 1 or 2 items that relate to a domain. This allows users to quickly assess the degree to which each measure focuses on a particular domain of care coordination, as well as the burden of data collection (i.e., number of items) related to the specific domain. Individual questions or items (measure components) within a measure may map to more than one domain. In addition, a single measure, or measure component, may address only one aspect of a particular domain. We mapped a measure to a domain if it addressed any aspect of the domain definition. For more detailed information on measure mapping, please refer to Appendix I: Measure Mapping Strategy.

Measure profiles follow each individual measure mapping table and contain more detailed information on the measure (see Figure 3) for an explanation of what information is included). Decisions regarding the types of information to include were based on input from the advisory groups (see Appendix III: Advisory Group Participants). Relevant information for each section of the profile was obtained and extracted from publications identified through a detailed literature search (see Appendix II: Identifying Measures). The measure profiles also identify the specific measure items (i.e., survey questions or measure components) that map to each domain. Copies of the measure instruments will be collected in Appendix IV: Care Coordination Measures, currently under development. Appendix IV will be updated regularly.

Special Caution. Many measures included in the *Atlas* are survey instruments. Users are cautioned that even though individual items from surveys are mapped to particular domains, most instruments should be used in their entirety. Typically, measure testing is conducted on the entire measure; performance of measurement based on individual items is usually unknown. It may be possible to seek advice directly from a measure developer about any potential adaptations.

Table 4. Care Coordination Measure Mapping Table

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Figure 3. Measure Profile Template

TITLE OF MEASURE

Purpose. A short statement defining the main objective or goal of the measure.

Format/Data Source. A description of the type of instrument(s). If applicable, specific information is noted regarding the number of individual items and the domains, categories, or subtopics covered.

Date. The date the measure was published or released.

Perspective. The perspective—Patient/Family, Health Care Professional(s), or System Representative(s)—being measured.

Measure Item Mapping. A list of which measure items map to which domains. Measure items are typically survey questions or instrument components. For domain definitions, refer to the Definitions section. For the Communicate domain and its subdomains (Interpersonal Communication and Information Transfer), we also provide information on the participants involved in the communication (e.g., communication between health care professional(s) and patient/family; within teams of health care professionals; and across health care teams or settings).

Development and Testing. A summary of relevant information concerning the development of the measure, as well as reliability and validity testing. Measure developers were contacted to seek updated testing information.

Link to Outcomes or Health System Characteristics. A summary of results that link the measure to patient outcomes or health system characteristics.

Logic Model/Conceptual Framework. A brief description of a model, framework, or design if utilized in the development of the measure.

Past or Validated Applications

- **Setting.** The general health care setting for which the measure has been developed, as well as the country where it was developed and/or tested.
- **Population.** The target population(s) for which the measure is intended or validated.
- **Level of evaluation.** The focus of evaluation. Examples include health system, hospital, department, clinical practice, or individual or groups of health care professionals.

Notes

- This section contains any additional relevant information.

Source(s). List of relevant sources for the measure and its development or testing.

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Measure Selection Guide

Purpose

This section of the chapter is intended to help users identify existing care coordination measures that can potentially be used to evaluate their care coordination interventions or demonstration projects.

Outline

1. Identify the measures relevant to your intervention.

Identifying the measures relevant to your intervention study involves several steps outlined below.

- a. Specify mechanisms of achieving care coordination.
- b. Find relevant domains on measure mapping table.
- c. Consider perspective(s) of interest.
- d. Identify relevant care coordination measures.

2. Review relevant measure profiles.

Once you have identified the relevant measures, go to the Measure Profiles section to examine the relevant measures in more detail and determine which may meet your evaluation needs.

Step-by-Step Guidance

This section augments the brief outline above with more detailed guidance on how to use the *Atlas*, including example material (in blue).

1. Identify the measures relevant to your intervention.

Step a. Specify the relevant mechanisms that your intervention will utilize to achieve its care coordination goals. Then identify the corresponding care coordination domain(s) (see Domain Definitions).

A single intervention may employ multiple mechanisms so you will want to map each one individually to all applicable domains. Repeat this step for each mechanism, and highlight applicable rows on the measure mapping table. Keep in mind that a single mechanism may correspond to multiple domains.

> ***Example***
> Dr. Smith designed a program to improve post-discharge health outcomes for patients with congestive heart failure and to reduce readmissions related to CHF. The program aims to achieve this by actively facilitating the transition from the inpatient to outpatient setting, using a patient-centered case management approach to facilitate care during this transition. The study

protocol includes activities such as: specially trained nurse case manager develops a care plan with the patient prior to discharge using a computerized protocol; a 30-minute patient education session with a nurse on the day of discharge to go over the patient care plan including ‘red flags’ (specific situations and the specific actions needed); faxing a complete medical record from the hospital, including test results, to the primary care provider within 48 hours of discharge; a followup phone call from a nurse to the patient within the first 7 days after discharge to assess the patient and trigger further followup as required. This program will be implemented at a single community hospital for 6 months. All patients admitted for CHF will be invited to participate.

Intervention mechanism: Facilitate transition from inpatient to outpatient setting → **Domain:** *Facilitate Transitions Across Settings*

Intervention mechanism: The program uses a case management approach and a designated case manager → **Domain:** *Care Management*

Intervention mechanism: Through red-flag discussion, help educate patient about how they can best react to changing symptoms → **Domain:** *Interpersonal Communication; Support Self-Management Goals.*

Intervention mechanism: Develop a care plan with the patient prior to discharge, using a computerized protocol → **Domain:** *Create a Proactive Plan of Care*

Intervention mechanism: 30-minute patient education session with nurse on the day of discharge to go over patient care plan → **Domain:** *Support Self-Management Goals; Create a Proactive Plan of Care*

Intervention mechanism: Faxing complete medical record from hospital stay, including test results, to primary care provider within 48 hours of discharge → **Domain:** *Information Transfer; Monitor, Follow Up, and Respond to Change.*

Intervention mechanism: Followup telephone call from nurse within the first 7 days after discharge → **Domain:** *Monitor, Follow Up, and Respond to Change*

Step b. Find the relevant domains on the Master Measure Mapping Tables (see Tables 5, 6, and 7).

From the care coordination domains listed in the top rows on the left-hand side of the tables, find the domain(s) you selected and highlight across the row.

Example

For the example listed above, find and highlight the rows for *Facilitate Transitions (across settings); Care Management; Information Transfer;*

> *Interpersonal Communication; Monitor, Follow Up, and Respond to Change; Create a Proactive Plan of Care; Support Self-Management Goals.*

Step c. Consider perspective(s) of interest.

Who is the intervention primarily targeted towards? Who will carry out the intervention? Which perspective are you most interested in assessing? Measurement from any of the three perspectives listed in the measure mapping tables may be relevant—*Patient/Family, Health Care Professional(s),* or *System Representative(s)*. For example, an intervention that includes a patient education mechanism will certainly merit evaluation from a *Patient/ Family* perspective. But it may also be useful to assess it from a *Health Care Professional(s),* or *System Representative(s)* perspective, depending on the goals of the intervention. Thorough evaluation may require looking at your intervention from multiple perspectives. There are three Master Measure Mapping Tables, one for each measurement perspective (see Tables 5, 6, and 7).

> ***Example***
> I am most interested in understanding the effects of this program on patients with CHF.
>
> **Perspective:** *Patients/Family* → Specify population: CHF patients

Step d. Identify relevant care coordination measures.

Using the Master Measure Mapping Tables (see Tables 5, 6, and 7)), look at the measures available that correspond to the intersections of interest (boxes in the grid) based on the previous steps (domains and perspectives). For example, if you wish to evaluate *Information Transfer* from the *Patient/Family* perspective, find the *Patient/Family* perspective column and scan down until you connect to the *Information Transfer* row. The box that connects these columns and rows lists the existing measures in the *Atlas* that evaluate information transfer from a patient or family perspective.

Note that interventions could have multiple mechanisms and perspectives and so you will need to do **Steps a through d** for each combination to identify all the relevant existing measures. Also, note that for some combinations, there may not be an existing care coordination measure included in the *Atlas*.

> ***Example***
> Go to the Master Measure Mapping Table for the *Patient/Family* perspective and look across the *Care Management* domain row. The numbers in this box correspond to related measures that may be of use in evaluating this intervention. For this example, the measures addressing care management from the patient/family perspective are: 11a, 14, 21, and 51.
>
> Continue checking the table(s) for all domains and perspectives of interest in evaluating this intervention. This will provide the complete set of available

measures contained in the *Atlas* for evaluating the mechanisms of the intervention. For this example, measure number 21 would be particularly important to review because it maps to the *Patient/Family* perspective of all 7 domains identified as relevant for this intervention.

2. Review relevant measure profiles.

Once you have identified each measure that maps to your intervention and evaluation mechanisms and perspectives, go to the Measure Profile section to find out more information about each of them. Each profile is preceded by an individualized measure mapping table that shows the care coordination domains and perspectives of the specific measure. The profile highlights the main features of the measure and key resources associated with it. These summaries also provide information on validity and testing, links to care coordination outcomes, application settings and populations, and format and data source. It also maps individual measure items (i.e., survey questions or questionnaire components) to each domain. This information should be used to guide the selection of specific measures for use in evaluating the intervention.

The individualized measure mapping tables provide information on the number of items related to each domain. A filled square (■) indicates that the measure has 3 or more items corresponding to that particular domain or that it is a composite measure related to that domain. An open square (□) indicates that a measure has only 1 or 2 items corresponding to that domain.

Example
There are 37 different measures that map to the *Patient/Family* perspective of the 7 domains identified as relevant to the intervention in this example. To further narrow this list, you may begin by reviewing those measures that map to most of those 7 domains. For example:

Measure #4a. Consumer Assessment of Healthcare Plans and Systems --Adult Primary Care 1.0 (CAHPS) maps to 5 of the 7 relevant domains.
Measure #6. Client Perception of Coordination Questionnaire (CPCQ) maps to 5 of the 7 domains.
Measure #10. Patient Assessment of Care for Chronic Conditions (PACIC) maps to 5 of the 7 relevant domains.
Measure #11. Family Centered-Care Self-Assessment Tool – Family version maps to 6 of the 7 relevant domains.
Measure #13. Primary Care Assessment Survey (PCAS) maps to 5 of the 7 relevant domains.
Measure #16c. Medical Home Family Index and Survey (MHFIS) maps to 5 of the 7 relevant domains.
Measure #17a-b. Primary Care Assessment Tool (PCAT-CE) maps to 5 of the 7 relevant domains.
Measure #21. Resources and Support for Self-Management (RSSM) maps to all 7 relevant domains.
Measure #37. Patient Perceptions of Care (PPOC) maps to 6 of the 7 relevant domains.

Measure #40. Adapted Picker Institute Cancer Survey maps to 6 of the 7 relevant domains.

Measure #6 (CPCQ) has an open square (□) in the box for *Information Transfer* from the *Patient/Family* perspective, indicating that the CPCQ has only 1 or 2 questions focusing on this domain and perspective. In contrast, Measure #4a (CAHPS) has a filled square (■) in the box corresponding to *Information Transfer* from the *Patient/Family* perspective, as it has 3 or more items addressing *Information Transfer* from this perspective. As a result, the CAHPS survey may, for example, be more appropriate for evaluating this component of the intervention. However, it also may require more resources to implement a lengthier measure.

§

Chapter 5. Measure Maps and Profiles

In the first section of this chapter we present three Master Measure Mapping Tables, one for each perspective—*Patient/Family*, *Health Care Professional(s)*, and *System Representative(s)*. In the second section of this chapter, we present specific measure mapping tables for each individual measure and profiles detailing information about each measure.

Master Measure Mapping Tables

Tables 5, 6, and 7 are Master Measure Mapping Tables for the three care coordination perspectives—*Patient/Family*, *Health Care Professional(s)*, and *System Representative(s)*, respectively. The tables indicate which measures focus on each of the care coordination domains for each perspective. The measure numbers seen in the Master Measure Mapping Tables correspond to the numbers assigned to each measure in Table 8.

Table 5. Care Coordination Master Measure Mapping Table, Patient/Family Perspective[†]

	MEASUREMENT PERSPECTIVE: *Patient/Family*
CARE COORDINATION ACTIVITIES	
Establish accountability or negotiate responsibility	3, 4a, 4b, 4c, 6, 9b, 11a, 13, 14, 16c, 17a, 17b, 26, 32, 37, 40, 42, 45, 48
Communicate	3, 4a, 4b, 4c, 6, 9b, 10, 11a, 13, 14, 16c, 17a, 17b, 24, 25, 26, 29, 30, 31, 32, 33, 37, 38a, 45, 48, 51
Interpersonal communication	3, 4a, 4b, 4c, 6, 10, 11a, 13, 14, 16c, 17a, 17b, 21, 33, 35, 36, 37, 38b, 39, 40, 41, 42, 45, 48, 51
Information transfer	3, 4a, 4b, 4c, 6, 9b, 10, 11a, 13, 14, 16c, 17a, 17b, 21, 24, 26, 29, 30, 31, 32, 33, 35, 36, 37, 38a, 38b, 39, 40, 41, 42, 45, 48, 49, 51
Facilitate transitions[‡]	
Across settings	9a, 9b, 13, 14, 16c, 17a, 17b, 21, 26, 31, 32, 37, 38a, 38b, 40, 42, 51
As coordination needs change	11a, 14, 24
Assess needs and goals	3, 4a, 4b, 4c, 6, 9a, 9b, 10, 11a, 13, 14, 16c, 17a, 17b, 21, 24, 25, 26, 30, 31, 32, 33, 35, 37, 38a, 38b, 40, 41, 42, 45
Create a proactive plan of care	6, 9b, 10, 11a, 16c, 21, 24, 37, 38a, 40
Monitor, follow up, and respond to change	3, 4a, 4b, 4c, 6, 9b, 10, 11a, 13, 16c, 17a, 17b, 21, 24, 25, 26, 29, 31, 32, 33, 36, 37, 39, 40, 41, 45
Support self-management goals	4a, 4b, 4c, 6, 9a, 9b, 10, 11a, 13, 16c, 17a, 17b, 21, 24, 25, 26, 29, 31, 32, 33, 35, 36, 37, 38a, 38b, 40, 41
Link to community resources	10, 11a, 16c, 17b, 21, 24, 31, 33, 38a, 38b
Align resources with patient and population needs	6, 11a, 14, 16c, 17a, 17b, 31, 38a, 38b, 51
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION	
Teamwork focused on coordination	6, 11a, 16c, 24, 25, 29, 30, 35, 36, 39, 40
Health care home	4a, 4b, 4c, 16c, 17a, 17b, 45, 51
Care management	11a, 14, 21, 51
Medication management	4a, 4b, 4c, 6, 9a, 9b, 10, 17a, 17b, 21, 32, 35, 36, 37, 38a, 38b, 42, 48
Health IT-enabled coordination	4a

[†] A key to measure numbers can be found in Table 8: Index of Measures.
[‡] All measure items addressing transitions were mapped to one of the specific transition types (*across settings* or *as coordination needs change*).

Table 6. Care Coordination Master Measure Mapping Table, Healthcare Professional(s) Perspective[†]

	MEASUREMENT PERSPECTIVE: *Health Care Professional(s)*
CARE COORDINATION ACTIVITIES	
Establish accountability or negotiate responsibility	5, 7a, 7b, 11b, 18, 20, 22b, 38c, 38d, 38e, 43, 46
Communicate	5, 7a, 7b, 11b, 12a, 12b, 17d, 22b, 23, 38e, 38f, 43, 46
Interpersonal communication	7a, 7b, 8, 11b, 12a, 12b, 17d, 18, 22b, 28, 43
Information transfer	5, 8, 11b, 12a, 12b, 17d, 18, 20, 22b, 23, 27, 38c, 38d, 38e, 38f
Facilitate transitions[‡]	
Across settings	5, 17d, 22b, 27, 43, 38c, 38d, 38e, 38f
As coordination needs change	11b, 22b
Assess needs and goals	5, 11b, 12a, 12b, 17d, 20, 23, 27, 38d, 38e, 38f, 43, 46
Create a proactive plan of care	5, 7b, 8, 11b, 12a, 22b, 23, 27, 38e, 38f
Monitor, follow up, and respond to change	5, 11b, 12a, 12b, 17d, 20, 22b, 23
Support self-management goals	5, 8, 11b, 17d, 20, 22b, 38d, 38e, 38f
Link to community resources	5, 11b, 17d, 22b, 27, 38e
Align resources with patient and population needs	5, 8, 11b, 17d, 20, 38d, 38e
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION	
Teamwork focused on coordination	7a, 7b, 11b, 12a, 12b, 18, 23, 27, 28, 43, 46
Health care home	17d
Care management	5, 11b, 22b, 27
Medication management	17d, 18, 20, 38c, 38e, 38f
Health IT-enabled coordination	12a, 17d

[†] A key to measure numbers can be found in Table 8: Index of Measures.

[‡] All measure items addressing transitions were mapped to one of the specific transition types (*across settings* or *as coordination needs change*).

Table 7. Care Coordination Master Measure Mapping Table, System Representative(s) Perspective†

	MEASUREMENT PERSPECTIVE: *System Representative(s)*
CARE COORDINATION ACTIVITIES	
Establish accountability or negotiate responsibility	1, 2, 15, 16a, 16b, 57, 58, 59, 60
Communicate	1, 16a, 16b, 17c, 22a, 34,
Interpersonal communication	17c, 22a, 52
Information transfer	1, 2, 15, 16a, 17c, 22a, 34, 44, 49, 50, 52, 53, 54, 56, 57, 58, 59, 60
Facilitate transitions‡	
Across settings	15, 16a, 17c, 22a, 49, 50, 55, 57, 58, 59, 60
As coordination needs change	16a, 16b, 22a
Assess needs and goals	1, 16a, 16b, 17c, 44, 49
Create a proactive plan of care	1, 16a, 16b, 22a, 49, 52, 55, 58, 59, 60
Monitor, follow up, and respond to change	1, 2, 3, 17c, 19, 22a, 44, 49, 54, 58, 59, 60, 61
Support self-management goals	1, 16a, 17c, 19, 22a, 34, 49
Link to community resources	1, 16a, 17c, 22a, 44, 52
Align resources with patient and population needs	1, 2, 16a, 16b, 17c, 19, 49, 52
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION	
Teamwork focused on coordination	1, 44, 52
Health care home	2, 3, 16a, 16b, 17c, 19, 47
Care management	15, 16a, 16b, 22a, 49
Medication management	2, 3, 17c, 57, 58, 60
Health IT-enabled coordination	1, 16a, 17c, 19, 34, 44, 50

† A key to measure numbers can be found in Table 8: Index of Measures.
‡ All measure items addressing transitions were mapped to one of the specific transition types (*across settings* or *as coordination needs change*).

Measure Profiles

This section contains measure mapping tables specific to each individual measure. Each individual measure mapping table is followed by a measure profile designed to provide more detailed information on the measure's purpose, format and data source, perspective, validation and testing, links to outcomes, applications, and key sources. The measure profiles also identify the specific measure items (i.e., survey questions or measure components) that map to each domain. Table 8 below is an index to the measure numbers (far left column) cited in the Master Measure Mapping Tables and the order in which the individual measure mapping tables and profiles appear.

Table 8. Index of Measures

	Measure Title
1.	Assessment of Chronic Illness Care (ACIC)
2.	ACOVE-2 Quality Indicators: Continuity and Coordination of Care Coordination
3.	Coleman Measures of Care Coordination
4.	Consumer Assessment of Healthcare Providers and Systems (CAHPS)
	a. Adult Primary Care 1.0
	b. Adult Specialty Care 1.0
	c. Child Primary Care 1.0
5.	Care Coordination Measurement Tool (CCMT)
6.	Client Perception of Coordination Questionnaire (CPCQ)
7.	Collaborative Practice Scale (CPS)
	a. Nurse Scale
	b. Physician Scale
8.	Breast Cancer Patient and Practice Management Process Measures
9.	Care Transitions Measure (CTM)
	a. CTM-3
	b. CTM-15
10.	Patient Assessment of Care for Chronic Conditions (PACIC)
11.	Family-Centered Care Self-Assessment Tool
	a. Family Version
	b. Provider Version
12.	ICU Nurse-Physician Questionnaire
	a. Long Version
	b. Short Version
13.	Primary Care Assessment Survey (PCAS)
14.	National Survey of Children With Special Health Care Needs (CSHCN)
15.	Head And Neck Cancer Integrated Care Indicators
16.	Medical Home Index (MHI)
	a. Long Version (MHI-LV)
	b. Short Version (MHI-SV)
	c. Medical Home Family Index and Survey (MHFIS)
17.	Primary Care Assessment Tool (PCAT)
	a. Child Expanded Edition (PCAT-CE)
	b. Adult Expanded Edition (PCAT-AE)
	c. Facility Expanded Edition (PCAT – FE)
	d. Provider Expanded Edition (PCAT – PE)
18.	Physician-Pharmacist Collaboration Instrument (PPCI)
19.	Readiness for the Patient-Centered Medical Home
20.	Family Medicine Medication Use Processes Matrix (MUPM)

	Measure Title
21.	Resources and Support for Self-Management (RSSM)
22.	Continuity of Care Practices Survey
	a. Program Level (CCPS-P)
	b. Individual Level (CCPS-I)
23.	Program of All-Inclusive Care for the Elderly (PACE)
24.	Measure of Processes of Care (MPOC-28)
25.	Care Evaluation Scale for End-of-Life Care (CES)
26.	Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS)
27.	Care Coordination Services In Pediatric Practices
28.	Collaboration and Satisfaction About Care Decisions (CSACD)
29.	Follow Up Care Delivery
30.	Family Satisfaction in the Intensive Care Unit (FS-ICU 24)
31.	Korean Primary Care Assessment Tool (KPCAT)
32.	Primary Care Multimorbidity Hassles for Veterans With Chronic Illnesses
33.	Primary Care Satisfaction Survey for Women (PCSSW)
34.	Personal Health Records (PHR)
35.	Picker Patient Experience (PPE-15)
36.	Physician Office Quality of Care Monitor (QCM)
37.	Patient Perceptions of Care (PPOC)
38.	PREPARED Survey
	a. Patient Version
	b. Carer Version
	c. Residential Care Staff Version
	d. Community Service Provider Version
	e. Medical Practitioner Version
	f. Modified Medical Practitioner Version
39.	Health Tracking Household Survey
40.	Adapted Picker Institute Cancer Survey
41.	Ambulatory Care Experiences Survey (ACES)
42.	Patient Perception of Continuity Instrument (PC)
43.	Jefferson Survey of Attitudes Toward Physician-Nurse Collaboration
44.	Clinical Microsystem Assessment Tool (CMAT)
45.	Components of Primary Care Index (CPCI)
46.	Relational Coordination Survey
47.	Fragmentation of Care Index (FCI)
48.	After-Death Bereaved Family Member Interview
49.	Schizophrenia Quality Indicators for Integrated Care
50.	Degree of Clinical Integration Measures
51.	National Survey for Children's Health (NSCH)
52.	Mental Health Professional HIV/AIDS Point Prevalence and Treatment Experiences Survey Part II
53.	Cardiac Rehabilitation Patient Referral from an Inpatient Setting
54.	Cardiac Rehabilitation Patient Referral from an Outpatient Setting
55.	Patients with a Transient Ischemic Event ER Visit That Had a Follow Up Office Visit
56.	Biopsy Follow Up
57.	Reconciled Medication List Received by Discharged Patients
58.	Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges)
59.	Timely Transmission of Transition Record
60.	Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges)
61.	Melanoma Continuity of Care—Recall System

Measure #1. Assessment of Chronic Illness Care (ACIC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			□
Interpersonal communication			
Information transfer			■
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			■
Create a proactive plan of care			□
Monitor, follow up, and respond to change			■
Support self-management goals			■
Link to community resources			■
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			■*
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			■

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items
*The use of a filled square for this measure indicates that it is a composite score.

Assessment of Chronic Illness Care (ACIC)

Purpose: To evaluate the quality-improvement-related strengths and weaknesses of care delivery for chronic illness.

Format/Data Source: Version 3.5 is a 34-item survey that covers 6 areas: (1) community linkages, (2) self-management support, (3) decision support, (4) delivery system design, (5) information systems, and (6) organization of care. Questions are divided by area of focus (6 areas of chronic illness care) and responses are in the form of a rating scale (Levels A–D).

Date: Measure released in 2000.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 18**,** 19
- **Communicate:**
        - *Across health care teams or settings:* 15, 23
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 17, 29
        - *Participants not specified:* 27
- **Assess needs and goals:** 10, 30, 33
- **Create a proactive plan of care:** 28
- **Monitor, follow up, and respond to change:** 20-22, 25, 33
- **Support self-management goals:** 10-13, 30, 34
- **Link to community resources:** 7, 8, 31
- **Align resources with patient and population needs:** 9, 16, 32
- **Teamwork focused on coordination:** 18, composite score
- **Health IT-enabled coordination:** 24-26, 30

Development and Testing: Instrument development was based on areas of system change suggested by the Chronic Care Model (CCM) that have been shown to influence quality of care. The instrument was tested in 108 organizational teams implementing 13-month long quality-improvement collaboratives in health care systems across the U.S. Paired t-tests were used to evaluate the sensitivity of the ACIC to detect system improvements. Testing revealed that all six subscale scores were responsive to system improvements made by care teams. In addition, a significant positive relationship between differences in self-reported ACIC scores and a RAND measure of the presence of chronic care model components in care program implementation was found.[2]

Link to Outcomes or Health System Characteristics: Moderately strong and positive Pearson correlations were found between ACIC scores and observational ratings of chronic care outcomes made by faculty from each collaborative program, with the exception of the community linkages subscale. Faculty ratings were based on team-prepared cumulative monthly reports, which included process and outcomes data (e.g., chart review data).[2] Another study found that, controlling for patient and clinic characteristics, a 1-point increase in the ACIC score was associated with a 16 percent relative decrease in risk for coronary heart disease attributable to modifiable risk factors.[3] Another study found that characteristics of the primary care clinic where a patient receives care, as measured by the ACIC, are an important predictor of glucose control.[4]

Logic Model/Conceptual Framework: Chronic Care Model.

Past or Validated Applications:

- **Setting:** Health systems with chronic care teams in the United States
- **Population:** Patients with chronic disease
- **Level of evaluation:** System

Notes:

- All instrument items are located online.[1]
- This instrument contains 34 items; 25 were mapped.
- Spanish, Thai, German, and Hebrew translations are available online.[1]

Sources:

1. Improving Chronic Illness Care Web site. Available at: http://www.improvingchroniccare.org/index.php?p=Versions&s=297. Accessed: 23 September 2010.
2. Bonomi AE, Wagner EH, Glasgow RE, et al. Assessment of Chronic Illness Care (ACIC): A practical tool to measure quality improvement. Health Serv Res 2002;37(3):791-820.
3. Parchman ML, Zeber JE, Romero RR, et al. Risk of coronary artery disease in type 2 diabetes and the delivery of care consistent with the chronic care model in primary care settings: A STARNet study. Med Care 2007;45(12):1129-34.
4. Parchman ML, Pugh JA, Wang CP, et al. Glucose control, self-care behaviors, and the presence of the chronic care model in primary care clinics. Diabetes Care 2007;30(11):2849-54.
5. Solberg LI, Crain AL, Sperl-Hillen JM, et al. Care quality and implementation of the chronic care model: A quantitative study. Ann Fam Med 2006;4(4):310-16.
6. Sunaert P, Bastiaens H, Feyen L, et al. Implementation of a program for type 2 diabetes based on the Chronic Care Model in a hospital-centered health care system: The Belgian experience. Health Serv Res 2009;9(152).

Measure #2. ACOVE-2 Quality Indicators – Continuity and Coordination of Care Coordination

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
Interpersonal communication			
Information transfer			■
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			□
Care management			
Medication management			■
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

ACOVE-2 Quality Indicators – Continuity and Coordination of Care

Purpose: To assess the quality of care related to coordination and continuity for vulnerable elders at the health-system level across all health conditions and diagnoses.

Format/Data Source: 13 quality indicators from the ACOVE-2 set, specific to care coordination and continuity. Information is obtained from medical records and administrative data.

Date: Measure released in 2001.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1
- **Communicate:**
  - Information transfer**:**
    - *Across health care teams or settings:* 4, 5, 8, 11, 12
- **Monitor, follow up, and respond to change:** 2, 5, 6, 8-10
- **Align resources with patient and population needs:** 13
- **Health care home:** 1
- **Medication management:** 2, 3, 7

Development and Testing: Indicators were developed based on literature review and expert panel consultation. Fifteen initial indicators were reviewed by independent panels of experts to assess validity and feasibility using a variation of the RAND/UCLA Appropriateness Method for developing guidelines to measure the appropriateness of medical care. Thirteen indicators were ultimately found to be valid. They were further evaluated by the American College of Physicians American Society of Internal Medicine Aging Task Force before publication.[2]

Link to Outcomes or Health System Characteristics: Supporting evidence, mostly from observational studies, supports the linkage between these quality indicators and improved patient health outcomes. For example, several studies cited in Wenger (2004) demonstrate an association between the discharge planning and comprehensive followup activities outlined in the ACOVE indicators and reduced hospital readmissions and costs of care.[2]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Not specific
- **Population:** Vulnerable elders
- **Level of evaluation:** System

Notes:

- All instrument items are located online.[1]
- This instrument contains 13 items; all 13 were mapped.

Source(s):

1. RAND Health Project: Assessing Care of Vulnerable Elders Web site. Available at: http://www.rand.org/health/projects/acove/acove2/. Accessed: 21 September 2010.
2. Wenger NS, Young RT. Quality indicators for continuity and coordination of care in vulnerable elders. JAGS 2007;55(S2):S285-S292.

Measure #3. Coleman Measures of Care Coordination

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
Interpersonal communication	□		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		■
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			□
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Coleman Measures of Care Coordination

Purpose: To measure coordination of care post hospital discharge as part of an evaluation of the association between care coordination and use of the Emergency Department (ED) in elderly patients.

Format/Data Source: Measures of care coordination constructed from data found in a self-reported health status survey, a telephone survey, and health plan utilization and pharmacy administrative data. The following information was collected from administrative data: (1) number of physicians involved with care, (2) number of prescribers involved with care, (3) percent of changes in 1 or more chronic disease medications that resulted in a followup visit within 28 days, (4) percent of missed ambulatory encounters that resulted in a followup visit within 28 days, (5) percent of same day ambulatory encounters that resulted in a followup visit within 28 days.

Date: Measure published in 2002.[1]

Perspective: System Representative(s); survey items from Patient/Family perspective

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1b
- **Communicate:**
        - *Across health care teams or settings:* 1f
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* 1i
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 1e
        - *Across health care teams or settings:* 1g
        - *Participants not specified:* 1j
- **Assess needs and goals:** 1k
- **Monitor, follow up, and respond to change:** 4-6, 1a, 1c, 1d
- **Health care home:** 2
- **Medication management:** 3, 4

Development and Testing: Telephone-based survey utilized validated scales of the Components of Primary Care Index (CPCI) measure developed by Flocke.[2] Relevant administrative data measures were selected based on the evidence-based hypothesis that followup care would be particularly important post-discharge, when patients might be at increased risk for subsequent adverse events (urgent ambulatory visits, missed appointments, or medication changes). Two of the administrative data measures used have been utilized in other studies.[3,4] Correlations between self-report and administrative-data-derived care coordination measures were examined, and the Person correlations ranged from 0.00 to 0.28, suggesting that the two types of measures were likely measuring distinct aspects of care coordination.

Link to Outcomes or Health System Characteristics: This multicomponent measure was used to measure the impact of care coordination on inappropriate emergency department (ED) use in older managed care enrollees with multiple chronic conditions. The measure was not found to be associated with inappropriate ED use in this study population. The study authors suggest that this may, in part, be due to the inability to adequately distinguish the role of care coordination from other potential factors that influence utilization.[1]

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Care management program of a large group-model HMO in the United States
- **Population:** Elderly patients with multiple chronic diseases
- **Level of evaluation:** System

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, we consecutively numbered all measure items with a care coordination construct found in Table 1 of the source article.[1] Additionally, all question items included in Measure 1 (Care Coordination Telephone Survey) found in Appendix 1 were labeled 1a-1m.
- This instrument contains 18 items; 15 were mapped.

Sources:

1. Coleman EA, Eilertsen TB, Magid DJ, et al. The association between care coordination and emergency department use in older managed care enrollees. Int J Integr Care 2002;2:1-11.
2. Flocke SA. Measuring attributes of primary care: development of a new instrument. J Fam Pract 1997;45(1):64-75.
3. Roblin DW, Juhn PI, Preston BJ, et al. A low-cost approach to prospective identification of impending high cost outcomes. Med Care 1999;37(11):1155–63.
4. Chapko MK, Fisher ES, Welch HG. When should this patient be seen again? Eff Clin Pract 1999;2(1):37–43.

Measure #4a. Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Adult Primary Care 1.0

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management	□		
Health IT-enabled coordination	□		

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Adult Primary Care 1.0

Purpose: To measure adult consumers' experiences with a specific primary care physician and practice.

Format/Data Source: Survey comprised of 31 core items with an additional 64 supplemental items specific to adult primary care. Supplemental items focus on additional aspects of care, including: (1) after hours care, (2) costs of care, (3) doctor role, (4) doctor thoroughness, (5) health improvement, (6) health promotion and education, (7) help with problems or concerns, (8) other doctors, (9) provider communication, (10) provider knowledge of specialist care, (11) doctor recommendation, (12) shared decisionmaking, (13) wait time, (14) care received from specialists, and (15) most recent visit. All questions were answered on a 4-point frequency scale. Responses covered experiences in the last 12 months and were compiled into a nationally available database.[1]

Date: Measure published in 2008.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2
- **Communicate:**
    - *Between health care professional(s) and patient/family:* 14, 15, AE1, AE2, OD2, C2, SD2
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* COC3, COC5, OD3-OD5, C1, C5, C7, C8, SD3, SC3, RV3-RV5
    - *Participants not specified:* 18
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 10, 12, 22, OD8, C9
    - *Across health care teams or settings:* PK2, SC6
    - *Participants not specified:* RV6
- **Assess needs and goals:** DT2, HPC1, SD1, SD2, RV7
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 17, HI1, HP1-HP6, HPC1
- **Health care home:** 1, 2
- **Medication management:** COC1, COC3
- **Health IT-enabled coordination:** AE1, AE2

Development and Testing: Several rounds of revision of the draft instrument (all versions) were based on literature review and feedback from extensive field tests with various health care organizations, cognitive interviews, and stakeholders.[1] The final instrument is endorsed by the National Quality Forum as well as the Ambulatory Care Quality Alliance (AQA).

Link to Outcomes or Health System Characteristics: The CAHPS survey questions and data have been used for evaluating patient experiences with care delivery.[2] Measure scores related to communication and care coordination were shown to be higher (more favorable) for patients seen by physicians in large, integrated medical groups compared with other practice settings.[3] Study populations enrolled in care management programs also showed trends toward higher ratings of patient experience with provider communication via the CAHPS.[4]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Primary care (outpatient)
- **Population:** Adult primary care patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The final survey includes 3 variations of a multi-item instrument: (1) Adult Primary Care 1.0, (2) Adult Specialty Care 1.0, and (3) Child Primary Care 1.0, which has a beta adaptation (Child Primary Care 2.0). Core question items are the same across the non-beta versions, but wording (patient vs. child; primary care physician vs. specialist) changes according to the instrument. All questions are answered on a 4-point frequency scale. Supplemental items focus on additional aspects of care (shared decisionmaking, costs, prescription medications, etc.). The survey also includes questions to obtain health status and demographic data.
- All instrument items are available online.[1]
- The core instrument contains 31 questions; 9 were mapped.
- The supplement contains 64 items; 35 were mapped.
- Validated versions are available online for adult and child, in both English and Spanish.[1]

Sources:

1. CAHPS Survey's and Tools. Agency for Health Research and Quality. Available at: https://www.cahps.ahrq.gov/default.asp. Accessed: 20 September 2010.
2. Agency for Health Research and Quality CAHPS Web site, CAHPS Bibliography. Available at: http://www.cahps.ahrq.gov/content/cahpsoverview/Bibliography.asp?orderby=D&p=101&s=15. Accessed: 16 September 2010.
3. Rodriguez HP, von Glanh T, Rogers WH, et al. Organizational and market influences on physician performance and patient experience measures. Health Serv Res 2009;44(3):880-901.
4. Isetts BJ, Schondelmeyer SW, Heaton AH, et al. Effects of collaborative drug therapy management on patients' perceptions of care and health related quality of life. Res Soc Adm Pharm 2006;2:129-42.

Measure #4b. Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Adult Specialty Care 1.0

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Consumer Assessment of Healthcare Providers and Systems (CAHPS) — Adult Specialty Care 1.0

Purpose: To measure adult consumers' experiences with a specialty care physician and practice.

Format/Data Source: Survey comprised of 31 core items with an additional 20 supplemental items specific to adult specialty care. Supplemental items focus on additional aspects of care, including: (1) care received, (2) care coordination, (3) costs of care (prescription medications, etc.), (4) role of doctor, (5) shared decisionmaking, and (6) procedures done by doctor. All questions were answered on a 4-point frequency scale. Responses covered experiences in the last 12 months and were compiled into a nationally available database.[1]

Date: Measure released in 2008.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2, DR1
- **Communicate:**
    - *Between health care professional(s) and patient/family:* 14, 15, CC1, SD1, SD2
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* DC1-3, SD3
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 10, 12, 22, SP2
    - *Participants not specified:* 18
- **Assess needs and goals:** SD1, SD2
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 17, DC4, SP5, SP6
- **Health care home:** 1, 2
- **Medication management:** CC1

Development and Testing: The draft instrument was revised based on a literature review and feedback that was provided from extensive field tests with various health care organizations, cognitive interviews, and stakeholders.[1] The final instrument is endorsed by the National Quality Forum as well as the Ambulatory Care Quality Alliance (AQA).

Link to Outcomes or Health System Characteristics: The CAHPS survey questions and data have been used for evaluating patient experiences with care delivery.[2] Measure scores related to communication and care coordination were shown to be higher (more favorable) for patients seen by physicians in large, integrated medical groups compared with other practice settings.[3] Study populations enrolled in care management programs also showed trends toward higher ratings of patient experience with provider communication via the CAHPS.[4]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Specialty care (outpatient) in the United States
- **Population:** Adult specialty care patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The final survey includes 3 variations of a multi-item instrument: (1) Adult Primary Care 1.0, (2) Adult Specialty Care 1.0, and (3) Child Primary Care 1.0, which has a beta adaptation (Child Primary Care 2.0). Core question items are the same across the non-beta versions, but wording (patient vs. child; primary care physician vs. specialist) changes according to the instrument. All questions are answered on a 4-point frequency scale. Supplemental items focus on additional aspects of care (shared decisionmaking, costs, prescription medications, etc.). The survey also includes questions to obtain health status and demographic data.
- All instrument items are located online.[1]
- The core instrument contains 31 questions; 9 were mapped.
- The supplement contains 51 items; 21 were mapped.
- Validated versions are available online for adult and child, in both English and Spanish.[1]

Sources:

1. CAHPS Survey's and Tools. Agency for Health Research and Quality. Available at: https://www.cahps.ahrq.gov/default.asp. Accessed: 20 September 2010.
2. Agency for Health Research and Quality CAHPS Web site, CAHPS Bibliography. Available at: http://www.cahps.ahrq.gov/content/cahpsoverview/Bibliography.asp?orderby=D&p=101&s=15. Accessed: 16 September 2010.
3. Rodriguez HP, von Glanh T, Rogers WH, et al. Organizational and market influences on physician performance and patient experience measures. Health Serv Res 2009;44(3):880-901.
4. Isetts BJ, Schondelmeyer SW, Heaton AH, et al. Effects of collaborative drug therapy management on patients' perceptions of care and health related quality of life. Res Soc Adm Pharm 2006;2:129-42.

Measure #4c. Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Child Primary Care (1.0)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Consumer Assessment of Healthcare Providers and Systems (CAHPS) – Child Primary Care (1.0)

Purpose: To measure consumers' experiences with a specific primary care physician and practice.

Format/Data Source: Survey comprised of 30 core items with an additional 17 supplemental items specific to child primary care. Supplemental items focus on additional aspects of care, including: (1) after-hours care, (2) behavioral health, (3) screening items for children with chronic conditions, (4) doctor communication with child, (5) doctor communication, (6) doctor thoroughness, (7) health improvement, (8) Identification of site of visit, (9) prescription medications, (10) provider knowledge of specialist care, and (11) shared decisionmaking. All questions were answered on a 4-point frequency scale. Responses covered experiences in the last 12 months and were compiled into a nationally available database.[1]

Date: Measure published in 2008.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2
- **Communicate:**
        - *Between health care professional(s) and patient/family:* 14, 15
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* DC1-DC4, SD2, SD4
        - *Participants not specified:* 18
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 10, 12, 22, SD3
        - *Across health care teams or settings:* PK2
- **Assess needs and goals:** DT2, SD1, SD2
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 17, DC3, HI1
- **Health care home:** 1, 2
- **Medication management:** PM1

Development and Testing: Several rounds of revision of the draft instrument (all versions) were based on literature review and feedback from extensive field tests with various health care organizations, cognitive interviews, and stakeholders.[1] The final instrument is endorsed by the National Quality Forum as well as the Ambulatory Care Quality Alliance (AQA).

Link to Outcomes or Health System Characteristics: The CAHPS survey questions and data have been used for evaluating patient experiences with care delivery.[2] Measure scores related to communication and care coordination were shown to be higher (more favorable) for patients seen by physicians in large, integrated medical groups compared with other practice settings.[3]

Study populations enrolled in care management programs also showed trends toward higher ratings of patient experience with provider communication via the CAHPS.[4]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Primary care (outpatient)
- **Population:** Child primary care patients (parents provide information)
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The final survey includes 3 variations of a multi-item instrument: (1) Adult Primary Care 1.0, (2) Adult Specialty Care 1.0, and (3) Child Primary Care 1.0, which has a beta adaptation (Child Primary Care 2.0). Core question items are the same across the non-beta versions, but wording (patient vs. child; primary care physician vs. specialist) changes according to the instrument. All questions are answered on a 4-point frequency scale. Supplemental items focus on additional aspects of care (shared decisionmaking, costs, prescription medications, etc.). The survey also includes questions to obtain health status and demographic data.
- All instrument items are available online.[1]
- The core instrument contains 31 items; 9 were mapped.
- The supplement contains 17 items; 12 were mapped.
- Validated versions are available online for adult and child, in both English and Spanish.[1]

Sources:

1. CAHPS Survey's and Tools. Agency for Health Research and Quality. Available at: https://www.cahps.ahrq.gov/default.asp. Accessed: 20 September 2010.
2. Agency for Health Research and Quality CAHPS Web site, CAHPS Bibliography. Available at: http://www.cahps.ahrq.gov/content/cahpsoverview/Bibliography.asp?orderby=D&p=101&s=15. Accessed: 16 September 2010.
3. Rodriguez HP, von Glanh T, Rogers WH, et al. Organizational and market influences on physician performance and patient experience measures. Health Serv Res 2009;44(3):880-901.
4. Isetts BJ, Schondelmeyer SW, Heaton AH, et al. Effects of collaborative drug therapy management on patients' perceptions of care and health related quality of life. Res Soc Adm Pharm 2006;2:129-42.

Measure #5. Care Coordination Measurement Tool (CCMT)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		■	
Interpersonal communication			
Information transfer		■	
Facilitate transitions			
Across settings		■	
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change		■	
Support self-management goals		□	
Link to community resources		■	
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management		□	
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Care Coordination Measurement Tool (CCMT)

Purpose: To collect information (activities, resource-use, outcomes, time) on care coordination encounters for the purpose of determining the cost of care coordination and related outcomes.

Care coordination encounters were defined as "any activity performed by any primary care office-based personnel that contributed to the development and/or implementation of a plan of care for a patient or family."[2]

Format/Data Source: Written form placed at office workstations and filled out by health care providers and staff at the time the care coordination encounter occurs. Providers received instruction on how to fill out the form.

Date: Measure published in 2004.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** Staff
- **Communicate:**
    - *Between health care professional(s) and patient/family:* Activity to Fulfill Needs: 1a, 1b, 2a, 2b
    - *Within teams of health care professionals:* Activity to Fulfill Needs: 1e, 1g, 2e, 2g, 5
    - *Across health care teams or settings:* Activity to Fulfill Needs: 1c-h, 2c-h, 3a-d, 10a-d
    - *Participants not specified:* Activity to Fulfill Needs: 7a, 7b, 12
  - Information transfer:
    - *Participants not specified:* Activity to Fulfill Needs: 4, 6, 8; Outcomes: 2k
- **Facilitate transitions:**
  - Across settings: Outcomes: 2b-I; Care Coordination Needs: 3; Focus Encounter: 6
- **Assess needs and goals:** Outcomes: 2m, 2n
- **Create a proactive plan of care:** Activity to Fulfill Needs: 11
- **Monitor, follow up, and respond to change:** Outcomes: 2j; Care Coordination Needs :2, 4
- **Support self-management goals:** Outcomes: 2a
- **Link to community resources:** Focus Encounter: 3, 4, 8
- **Align resources with patient and population needs:** Outcomes: 2l
- **Care management:** Care Coordination Needs: 5; Focus Encounter: 7;

Development and Testing: Pilot testing was conducted in several general pediatric practices with varying sizes, locations, patient demographics, and care coordination models. The tool was successfully used to document care coordination encounters during the daily operations of pediatric primary care offices. Statistical comparisons across practices were not performed due to heterogeneity in practice type, sample design, and study methodology.[2]

Link to Outcomes or Health System Characteristics: Use of the CCMT provided outcomes-based information on trends in costs, resource utilization, and patient characteristics associated with care coordination activities for children with special health care needs. Information included associations between patient complexity and time spent coordinating care, number of encounters, and type of care coordination required. Estimates of the annual cost of the time spent coordinating care and average cost of care coordination activities were also calculated based on data collected.[1]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Pediatric primary care; the CCMT has also been adapted by subspecialty providers across the U.S. (R.C. Antonelli, personal communication, August 31, 2010).
- **Population:** Children with special health care needs; this instrument has also been adapted specifically for cardiology ambulatory care and cleft lip and palate care (R.C. Antonelli, personal communication, September 26, 2010).
- **Level of evaluation:** Practice

Notes:

- All instrument items are located in the Appendix of the source article.[2]
- This instrument contains 76 items; 56 were mapped.

Sources:

1. Antonelli RC, Antonelli DM. Providing a medical home: The cost of care coordination services in a community-based, general pediatric practice. Pediatrics 2004;113:1522-28.
2. Antonelli RC, Stille CJ, Antonelli DM. Care coordination for children and youth with special health care needs: A descriptive, multi-site study of activities, personnel costs and outcomes. Pediatrics 2008;122:e209-16.

Measure #6. Client Perception of Coordination Questionnaire (CPCQ)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	◻		
Communicate	◼		
Interpersonal communication	◻		
Information transfer	◻		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	◻		
Create a proactive plan of care	◻		
Monitor, follow up, and respond to change	◻		
Support self-management goals	◼		
Link to community resources			
Align resources with patient and population needs	◻		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	◻		
Health care home			
Care management			
Medication management	◻		
Health IT-enabled coordination			

Legend:
◼ = ≥ 3 corresponding measure items
◻ = 1-2 corresponding measure items

Client Perceptions of Coordination Questionnaire (CPCQ)

Purpose: To measure patient-centered care and care coordination in health care delivery from a consumer perspective.

Format/Data Source: 31-item, written, self-administered survey addressing 6 domains of care coordination: (1) identification of need, (2) access to care, (3) patient participation, (4) patient-provider communication, (5) inter-provider communication, (6) global assessment of care. These six domains spanned 4 areas of health care provision: (1) overall care, (2) general practitioner (GP) care, (3) nominated provider care, and (4) carers. Questions are answered via Likert scale responses.

Date: Measure published in 2003.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 9
- **Communicate:**
        - *Between health care professional(s) and patient/family:* 11, 13
        - *Across health care teams or settings:* 17, 25
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* 19, 27
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 6
        - *Across health care teams or settings:* 5
- **Assess needs and goals:** 16
- **Create a proactive plan of care:** 19, 27
- **Monitor, follow up, and respond to change:** 10
- **Support self-management goals:** 14, 18, 20, 26, 28
- **Align resources with patient and population needs:** 3
- **Teamwork focused on coordination:** 7
- **Medication management:** 4

Development and Testing: The instrument was developed through iterative item generation. Most items achieved excellent completion and comprehension rates, and the instrument was transferable among chronically unwell populations. Six scales were identified based on principle components analysis (acceptability, received care, GP, nominated provider, client comprehension, and client capacity). Construct validity, comprehensibility, and internal consistency were demonstrated for all scales but client comprehension and capacity. Construct validity was further supported by the finding that patients with chronic pain syndromes reported significantly worse experiences for all items. Individual items in the instrument were found to be relevant to care coordination, although authors suggest further testing and possible revisions for the measure. Testing was conducted in association with the Australian Coordinated Care Trials using data from 1193 survey responses.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Community-based general practices; Australia
- **Population:** People with complex and chronic health care needs
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in the Appendix of the source article.[1]
- This instrument contains 31 items; 23 were mapped.

Source(s):

1. McGuiness C, Sibthorpe B. Development and initial validation of a measure of coordination of health care. Int J Qual Health Care 2003;15(4):309-18.

Measure #7a. Collaborative Practice Scale (CPS) – Nurse Scale

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		■	
Interpersonal communication		■	
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Collaborative Practice Scale (CPS) – Nurse Scale

Purpose: To assess the interactions between nurses and physicians during typical delivery–of-care processes.

Format/Data Source: 9-item, self-administered, written survey. Questions are answered on a 6-point Likert scale and totaled. Higher scores indicate greater collaboration. For the purposes of this instrument, collaboration is defined as "interactions between nurse and physician that enable the knowledge and skills of both professionals to synergistically influence the patient care provided."[1] The instrument focuses on 2 factors: (1) communication and (2) clarification of responsibilities.

Date: Measure published in 1985.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1-4, 6, 9
- **Communicate:**
    - *Within teams of health care professionals:* 3, 5, 7-9
  - Interpersonal communication:
    - *Within teams of health care professionals:* 1, 2, 4, 6
- **Teamwork focused on coordination:** 1-9

Development and Testing: The instrument was tested in a sample of 94 physicians. Significant test-retest reliability was established, as was construct validity. Factor analysis confirmed the presence of two distinct factors measuring unique components of collaboration. Concurrent validity was tested by comparison of the CPS to 2 other instruments: (1) Management of Differences Exercise (MODE) and (2) The Health Role Expectation Index (HREI). A correlation was found only between the CPS and the HREI. Predictive validity was assessed by comparing peer reviews of interprofessional practice by nurses for physicians and by physicians for nurses with the CPS scores. Adequate validity correlations were not found for the nurse scale. Authors suggest that further testing for predictive and concurrent validity is warranted.[1]

Link to Outcomes or Health System Characteristics: Measure developers indicate that further testing of theory-linked factors related to the instruments is necessary.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Urban health centers in the United States (not inpatient or outpatient specific)
- **Population:** Nurses
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in Table 1 of the source article.[1]
- This instrument contains 9 items; all 9 were mapped.

Sources:

1. Weiss SJ, Davis HP. Validity and reliability of the collaborative practice scales. Nurs Res 1985;34:299-305.
2. Dougherty MB, Larson E. A review of instruments measuring nurse-physician collaboration. J Nurs Adm 2005;35(5):244-53.

Measure #7b. Collaborative Practice Scale (CPS) – Physician Scale

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		□	
Interpersonal communication		■	
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Collaborative Practice Scale (CPS) – Physician Scale

Purpose: To assess the interactions between nurses and physicians during typical delivery of care processes.

Format/Data Source: 10-item, self-administered, written survey. Questions are answered on a 6-point Likert scale and totaled. Higher scores indicate greater collaboration. For the purposes of this instrument, collaboration is defined as "interactions between nurse and physician that enable the knowledge and skills of both professionals to synergistically influence the patient care provided."[1] The instrument focuses on 2 factors: (1) communication and (2) clarification of responsibilities.

Date: Measure published in 1985.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** 6, 8, 10
- **Communicate:**
    - *Between health care professional(s) and patient/family:* 1
  - Interpersonal communication:
    - *Within teams of health care professionals:* 2, 3, 5, 6, 8-10
- **Create a proactive plan of care:** 4
- **Teamwork focused on coordination:** 1-10

Development and Testing: The instrument was tested in a sample of 94 physicians. Significant test-retest reliability was established, as was construct validity. Factor analysis confirmed the presence of two distinct factors measuring unique components of collaboration. Concurrent validity was tested by comparison of the CPS to 2 other instruments: (1) Management of Differences Exercise (MODE) and (2) The Health Role Expectation Index (HREI). A correlation was found only between the CPS and the HREI. Predictive validity was assessed by comparing peer reviews of interprofessional practice by nurses for physicians and by physicians for nurses with the CPS scores. Adequate validity correlations were not found for the nurse scale. Authors suggest that further testing for predictive and concurrent validity is warranted.[1]

Link to Outcomes or Health System Characteristics: Measure developers indicate that further testing of theory-linked factors related to the instruments is necessary.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:
- **Setting:** Urban health centers in the United States (not inpatient or outpatient specific)
- **Population:** Physicians
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in Table 1 of the source article.[1]
- This instrument contains 10 items; all 10 were mapped.

Sources:

1. Weiss SJ, Davis HP. Validity and reliability of the collaborative practice scales. Nurs Res 1985;34:299-305.
2. Dougherty MB, Larson E. A review of instruments measuring nurse-physician collaboration. J Nurs Adm 2005;35(5):244-53.

Measure #8. Breast Cancer Patient and Practice Management Process Measures Surgeon Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication		■	
Information transfer		■	
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care		■	
Monitor, follow up, and respond to change			
Support self-management goals		■	
Link to community resources			
Align resources with patient and population needs		■	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Breast Cancer Patient and Practice Management Process Measures Surgeon Survey

Purpose: To evaluate quality of treatment during the initial course of therapy for breast cancer patients and address variation in patient and practice management processes that may be associated with better outcomes.

Format/Data Source: Mailed, self-administered, 17-item survey addressing 5 measures: (1) multidisciplinary clinician communication, (2) availability of clinical information, (3) patient decision support, (4) access to information technology, and (5) practice feedback initiatives.

Date: Measure published in 2010.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
  - Interpersonal communication**:**
    - *Across health care teams or settings:* 1-3
  - Information transfer:
    - *Across health care teams or settings:* 4-6
- **Create a proactive plan of care:** 1-3
- **Support self-management goals:** 7, 8, 10-11
- **Align resources with patient and population needs:** 7-8, 10, 11

Development and Testing: The development of the measures was based on a literature review and prior research conducted by the authors. The items were all pretested on a convenience sample of 10 surgeons, and the scales were piloted on a convenience sample of 34 surgeons. Scale reliability testing was conducted, and each of the scales had a Cronbach's alpha of above 9. Confirmatory factor analysis was also conducted for all of the patient management domain items and confirmed the predominant loading of the items on their hypothesized subdomains.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The measures were based on the Chronic Care Model and a previously developed framework for cancer care quality measures.[2]

Past or Validated Applications:

- **Setting:** Hospital surgery centers in the United States.
- **Population:** Attending surgeons treating patients with breast cancer
- **Level of evaluation:** Practice

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, All instrument items are found in Table 1 and 2 of the source article were consecutively numbered.[1]
- This instrument contains 17 items; 10 were mapped.

Sources:

1. Katz SJ, Hawley ST, Morrow M, et al. Coordinating cancer care: patient and practice management processes among surgeons who treat breast cancer. Med Care 2010;48(1):45-51.
2. Kahn KL, Malin JL, Adams J, et al. Developing a reliable, valid, and feasible plan for quality of care measurement for cancer. How should we measure? Med Care. 2002;40(Suppl):III73-III85.

Measure #9a. Care Transitions Measure (CTM-3)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Care Transitions Measure (CTM-3)

Purpose: To evaluate the essential processes of care involved in successful care transitions, including information transfer, patient and caregiver preparation, self-management support, empowerment to assert preferences, from a patient-centered perspective.

Format/Data Source: 3-item written survey administered at time of discharge. All questions are answered on a 5-point Likert scale.

Date: Measure published in 2002.[1]

Perspective: Patient/Family

Measure Item Mapping:
- **Facilitate transitions:**
  - Across settings: 1-3
- **Assess needs and goals:** 1
- **Support self-management goals:** 2, 3
- **Medication management:** 3

Development and Testing: Key domains and measure items were developed using input from patient focus groups. Psychometric evaluation established content validity, construct validity, absence of floor and ceiling effects, and intra-item variation.[1] The 3-item CTM explained 88 percent of the variance in the 15-item CTM score. No differential item difficulty by age, gender, education, self-rated health, or ethnic group was identified after differential item function analysis.[2] The CTM is an NQF-endorsed measure and has been applied to a range of high-risk patient populations, including frail older adults, adults with chronic health conditions, cancer patients, and children with special health care needs. Translated Hebrew and Arabic versions of the questionnaire have also been found to be reliable and valid.[3]

Link to Outcomes or Health System Characteristics: Patients with lower self-rated health status had significantly lower CTM scores, a result that is consistent with previous studies, suggesting that care coordination is especially important for individuals with complex health conditions. The measure also demonstrated the power to discriminate between: (1) patients discharged from the hospital that did/did not experience a subsequent emergency visit or rehospitalization for their index condition and (2) health care facilities with differing levels of commitment to care coordination.[4]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:
- **Setting:** United States hospitals to outpatient facilities (home or skilled nursing); translations available for use in other countries (see notes below)
- **Population:** Elderly patients with multiple complicated medical problems
- **Level of evaluation:** Hospital

Notes:

- All instrument items are located online.[4]
- This instrument contains 3 items; all 3 were mapped.
- Finnish and French translations of the CTM-3 are available online.[4]
- A validated 15-item version (CTM-15) is also available online in English, Spanish, Arabic, Hebrew, and Russian.[4]

Sources:

1. Coleman EA, Smith JD, Frank JC, et al. Development and testing of a measure designed to assess the quality of care transitions. Int J Integr Care 2002;2(1):1-9.
2. Parry C, Mahoney E, Chalmers SA, et al. Assessing the quality of transitional care: further applications of the care transitions measure. Medical Care 2008;46(3):317-22.
3. Shadmi E, Zisberg A, Coleman EA. Translation and validation of the Care Transition Measure into Hebrew and Arabic. Int J Quality Health Care 2009;21(2):97-102.
4. The Care Transitions Program: Improving Quality and Safety During Care Hand-Offs Web site. Available at: http://www.caretransitions.org/articles.asp. Accessed: 15 September 2010.

Measure #9b. Care Transitions Measure (CTM-15)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
Interpersonal communication			
Information transfer	□		
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Care Transitions Measure (CTM-15)

Purpose: To evaluate the essential processes of care involved in successful care transitions from a patient-centered perspective.

Format/Data Source: 15-item survey administered at the time of, or immediately following, hospital discharge. The items span 4 domains: (1) information transfer, (2) patient and caregiver preparation, (3) self-management support, and (4) empowerment to assert preferences. All questions are answered on a 5-point Likert scale.

Date: Measure published in 2002.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 9
- **Communicate:**
        - *Between health care professional(s) and patient/family:* 1
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 4
- **Facilitate transitions:**
    - Across settings: 1-15
- **Assess needs and goals:** 1-3, 7
- **Create a proactive plan of care:** 7, 12
- **Monitor, follow up, and respond to change:** 12
- **Support self-management goals:** 1, 4-6, 8-11
- **Medication management:** 13-15

Development and Testing: Key domains and measure items were developed using input from patient focus groups. Psychometric evaluation established content validity, construct validity, absence of floor and ceiling effects, and intra-item variation.[1] M plus confirmatory factor analysis supported the CTM-15 factor structure in a more diverse study population (225 patients of varying racial/ethnic background, aged 18-90, in rural settings). No differential item difficulty by age, gender, education, self-rated health, or ethnic group was identified after differential item function analysis.[2] The CTM is an NQF-endorsed measure and has been applied to a range of high-risk patient populations, including frail older adults, adults with chronic health conditions, cancer patients, and children with special health care needs. Translated Hebrew and Arabic versions of the questionnaire have also been found to be reliable and valid.[3]

Link to Outcomes or Health System Characteristics: Patients with lower self-rated health status had significantly lower CTM scores, a result that is consistent with previous studies, suggesting that care coordination is especially important for individuals with complex health conditions. The measure also demonstrated the power to discriminate between: (1) patients discharged from the hospital that did/did not experience a subsequent emergency visit or rehospitalization for their index condition and (2) health care facilities with differing levels of commitment to care coordination.[4]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** United States hospitals to outpatient facilities (home or skilled nursing); translations available for use in other countries (see notes below)**Population:** Elderly patients with multiple complicated medical problems
- **Level of evaluation:** Hospital

Notes:

- All instrument items are located online.[4]
- This instrument **c**ontains 15 items; all 15 were mapped.
- For those interested, Spanish, Arabic, Hebrew, and Russian translations of the CTM-15 are available online.[4]
- A validated 3-item version (CTM-3) is also available online in English, Finnish, and French.[4]

Sources:

1. Coleman EA, Smith JD, Frank JC, et al. Development and testing of a measure designed to assess the quality of care transitions. Int J Integr Care 2002;2(1):1-9.
2. Parry C, Mahoney E, Chalmers SA, et al. Assessing the quality of transitional care: further applications of the care transitions measure. Medical Care 2008;46(3):317-22.
3. Shadmi E, Zisberg A, Coleman EA. Translation and validation of the Care Transition Measure into Hebrew and Arabic. Int J Quality Health Care 2009;21(2):97-102.
4. The Care Transitions Program: Improving Quality and Safety During Care Hand-Offs Web site. Available at: http://www.caretransitions.org/articles.asp. Accessed: 15 September 2010.

Measure #10. Patient Assessment of Care for Chronic Conditions (PACIC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
Interpersonal communication	□		
Information transfer	□		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Patient Assessment of Care for Chronic Conditions (PACIC)

Purpose: To develop a patient self-report instrument that measures the extent to which patients receive clinical services and actions consistent with the Chronic Care Model.

Format/Data Source: A 20-item survey administered to patients with chronic conditions for evaluation of their care within the past 6 months. Scales address 5 topics: (1) Patient Activation; (2) Delivery System Design/Decision Support; (3) Goal Setting; (4) Problem-Solving/Contextual Counseling, and (5) Follow-up/Coordination.

Date: Measure published in 2005.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
        - *Between health care professional(s) and patient/family:* B11, B15, B19, B20
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* B1
    - Information transfer:
        - *Between health care professional(s) and patient/family:* B3
        - *Participants not specified:* B9
- **Assess needs and goals:** B1, B2, B7-9, B12, B13
- **Create a proactive plan of care:** B1, B4, B13, B14
- **Monitor, follow up, and respond to change:** B16
- **Support self-management goals:** B4, B6, B7, B8, B10, B13, B14, B17
- **Link to community resources:** B10, B17, B18
- **Medication management:** B3

Development and Testing: Face, construct, and concurrent validity, as well as measurement performance were demonstrated, characterizing the PACIC as a reliable instrument. Test-retest reliability was moderately stable over a three-month interval. Most items strongly related to their respective subscale(s), and the overall model had moderate goodness of fit. The instrument is appropriate across a variety of chronic conditions.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The Chronic Care Model establishes a framework from which the Patient Assessment of Chronic Illness Care (PACIC) arises.[1]

Past or Validated Applications:

- **Setting:** Primary care clinics in the United States
- **Population:** Patients with chronic conditions; it has since been implemented in patients with mental disorders treated in primary care settings.[2]
- **Level of evaluation:** Health Care Professional(s)

Notes:

- Instrument items located in the Appendix of the source article.[1]
- Instrument items are also located online.[3]
- This instrument contains 20 items; 19 were mapped.
- A 25-item version is also available, which can be scored according to the "5 As" model of health behavior change.[3]
- Additional information regarding the measure and how to contact its developers is available online.[5]
- An adapted two-factor structure version of the five-factor structure PACIC (tested in the United States and Europe) was developed and tested in Australia.[6]
- Studies using the PACIC have also been applied to diabetic patient populations, assessing the level of literacy in relation to self-management support.[7]

Sources:

1. Glasgow RE, Wagner EH, Schaefer J, et al. Development and validation of the Patient Assessment of Chronic Illness Care (PACIC). Med Care 2005;43(5):436-44.
2. Gensichen J, Serras A, Paulitsch MA, et al. The Patient Assessment of Chronic Illness Care questionnaire: Evaluation in patients with mental disorders in primary care. Community Ment Health J 2010 Aug 24. [ePub ahead of print]. No doi number listed.
3. Robert Wood Johnson Foundation Improving Chronic Illness Care Web site. Available at: http://improvingchroniccare.org/tools/pacic.htm. Accessed: 17 September 2010.
4. Glasgow RE, Nelson CC, Whitesides H, et al. Use of the Patient Assessment of Chronic Illness Care (PACIC) with diabetic patients: Relationship to patient characteristics, receipt of care, and self-management. Diabetes Care 2005;28:2655-61.
5. National Cancer Institute Grid-Enabled Measures Database (GEM), beta. Available at: https://www.gem-beta.org/public/MeasureDetail.aspx?mid=100&cat=2&mode=m. Accessed: 24 September 2010.
6. Taggart J, Chan B, Jayasinghe UW, et al. Patients Assessment of Chronic Illness Care (PACIC) in two Australian studies: Structure and utility. J Eval Clin Pract 2010 Sep 16 [ePub ahead of print] doi:10.1111/j 1365-2753.2010.01423.x.
7. Wallace AS, Carlson JR, Malone RM, et al. The influence of literacy on patient-reported experiences of diabetes self-management support. Nurs Res 2010;59(5):356-63.
8. Schmittdiel J, Mosen DM, Glasgow RE, et al. Patient Assessment of Chronic Illness Care (PACIC) and improved patient-centered outcomes for chronic conditions. J Gen Int Med 2008;23(1):77-80.

Measure #11a. Family-Centered Care Self-Assessment Tool – Family Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change	■		
Assess needs and goals	■		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management	□		
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Family Centered Care Self-Assessment Tool – Family Version

Purpose: To evaluate practices' provision of family-centered health care from the family perspective.

Format/Data Source: 98-item, written survey with questions across 3 domains: (1) family/provider partnerships, (2) care setting practices and policies, and (3) community systems of services and supports. These 3 domains are further divided into a total of 15 subtopics: (1) the decisionmaking team, (2) supporting the family as the constant in the child's life, (3) family-to-family and peer support, (4) supporting transition to adulthood, (5) sharing successes, (6) giving a diagnosis, (7) ongoing care and support, (8) addressing child/youth development, (9) access to records, (10) appointment schedules, (11) feedback on care setting practices, (12) care setting policies to support family-centered care, (13) addressing culture and language in care, (14) information and referral and community based services, and (15) community systems integration and care coordination. The subtopics are referred to for measure-item mapping.

Date: Measure published in 2008.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1.1A, 1.1B, 1.1D, 4.2C, 7.1F
- **Communicate:**
        - *Between health care professional(s) and patient/family:* 9.1A
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* 1.2B, 1.2C, 1.5, 1.6, 2.1A-D, 3.1F, 7.1B-D, 7.1H, 8.1F
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 1.4, 2.2A, 4.2E, 6.1A-C, 7.1E, 7.1G, 9.1D, 9.1E, 9.2, 12.1
        - *Across health care teams or settings:* 13.1D
        - *Participants not specified:* 4.2F
- **Facilitate transitions:**
    - As coordination needs change: 1.2D, 3.1D, 4.2A-H, 8.1B, 8.1F, 14.2
- **Assess needs and goals:** 1.2B-D, 1.3A-D, 2.1D, 7.5, 8.1B, 13.1A, 13.1B
- **Create a proactive plan of care:** 4.2C, 4.2E, 13.1B
- **Monitor, follow up, and respond to change:** 1.2D, 6.1A, 7.1F, 8.1A, 8.1F, 14.1C-F, 14.2
- **Support self-management goals:** 1.1D, 1.2A, 2.2B, 3.1E, 3.1F, 4.2A, 4.2B, 6.1C, 6.1D, 7.1A, 7.1I, 8.1C-D, 13.1E
- **Link to community resources:** 2.2B, 3.1B-D, 4.1C, 14.1A, 14.1B, 14.2, 15.1A
- **Align resources with patient and population needs:** 1.1C, 3.1C, 3.1F, 4.2D, 4.2H, 7.1I, 7.3, 7.4, 9.1B, 9.1C, 10.1A-D, 12.2, 13.1C
- **Teamwork focused on coordination:** 1.2A
- **Care management:** 15.1B

Development and Testing: The instrument was developed based on 10 components of family-centered care within a framework for partnership between families and professionals. No detailed testing information was described in the sources identified.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: National Center for Family-Centered Care Framework.[2]

Past or Validated Applications:
- **Setting:** Family practices in the United States
- **Population:** Children and families
- **Level of evaluation:** Practice

Notes:
- All instrument items are available online.[1]
- This instrument contains 98 items; 90 were mapped.

Sources:

1. Family Voices, funded by the Maternal and Child Health Bureau (MCBH). *Family Centered Care Self-Assessment Tool – Family Version*. October 2008. Available at: http://www.familyvoices.org/pub/index.php?topic=fcc. Accessed: 17 September 2010.
2. National Center for Family-Centered Care. *Family-Centered Care for Children with Special Health Care Needs*. Bethesda, MD: Association for the Care of Children's Health; 1989.

Measure #11b. Family Centered Care Self-Assessment Tool – Provider Version

CARE COORDINATION MEASURES MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		■	
Interpersonal communication		■	
Information transfer		■	
Facilitate transitions			
Across settings			
As coordination needs change		■	
Assess needs and goals		■	
Create a proactive plan of care		■	
Monitor, follow up, and respond to change		■	
Support self-management goals		■	
Link to community resources		■	
Align resources with patient and population needs		■	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management		□	
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Family Centered Care Self-Assessment Tool – Provider Version

Purpose: Family-Centered Care aims to improve the health and well-being of children through a respectful partnership between families and health care professionals. The Provider version aims to evaluate health care staff to determine the quality of care provided to the families.

Format/Data Source: 105-item, written survey administered to providers (health care professionals and staff). The Family-Centered Care Self-Assessment Tool – Provider Version covers 3 domains: (1) family/provider partnerships, (2) care setting practices and policies, and (3) community systems of services and supports. These 3 domains are further divided into 15 subtopics: (1)Decision-Making Team, (2) Supporting the Family as the Constant in the Child's Life, (3) Family-to-Family and Peer Support, (4) Supporting Transition to Adulthood, (5) Sharing Successes of the Family/Provider Partnership, (6) Giving a Diagnosis, (7) Ongoing Care and Support, (8)Addressing Child/Youth Development, (9) Access to Records, (10) Appointment Schedules, (11) Feedback on Care Setting Practices, (12) Care Setting Policies to Support Family-Centered Care, (13) Addressing Culture and Language in Care, (14) Information and Referral and Community-Based Services, and (15) Community Systems Integration and Care Coordination. The subtopics are referred to for measure-item mapping.

Date: Measure published in 2008.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** 1.1A, 1.1B, 1.1D, 4.2C, 7.1F
- **Communicate:**
    - *Between health care professional(s) and patient/family:* 1.2D, 8.1F, 9.1A, 9.1C
    - *Within teams of health care professionals:* 9.1E
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 1.2B, 1.2C, 1.4, 1.5, 4.1A, 7.1B, 7.1D, 7.1F, 7.1H
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 2.2A, 2.2B, 6.1A, 6.1B, 7.1E, 7.1G, 9.1D, 12.1A, 12.1C
    - *Within teams of health care professionals:* 4.2E
    - *Participants not specified:* 4.2F
- **Facilitate transitions:**
  - As coordination needs change: 4.1A-C, 4.2A-H, 8.1B, 8.1F, 14.2
- **Assess needs and goals:** 1.1B, 1.2B-E, 1.3A-E, 2.1A, 2.1D, 7.1D, 7.4, 8.1B, 13.1A, 14.2
- **Create a proactive plan of care:** 4.1A, 4.2C, 4.2E, 13.1B
- **Monitor, follow up, and respond to change:** 1.7, 7.1F, 8.1A, 8.1F, 14.1C-F, 14.2
- **Support self-management goals:** 1.1C, 1.1D, 1.2A, 2.1A, 2.2A, 2.2B, 3.1E, 3.1F, 4.1B, 4.1C, 4.2A, 4.2B, 6.1C, 6.1D, 7.1F, 7.1H, 7.1I, 8.1C-F, 13.1E
- **Link to community resources:** 1.1C, 2.2B, 3.1B-E, 4.1B, 4.1C, 14.1A, 14.1B, 14.2

- **Align resources with patient and population needs:** 1.1C, 1.3A-E, 3.1C, 3.1F, 4.2D, 4.2H, 7.1I, 7.2, 7.3, 9.1B, 9.1C, 10.1A-D, 11.1-11.4, 12.1C, 12.1G, 12.1H, 13.1A-E
- **Teamwork focused on coordination:** 1.2A
- **Care management:** 15.1B

Development and Testing: The instrument was developed and based on 10 principles of family-centered care for children with special health needs within a framework for partnership between families and professionals. No detailed testing information was described in the sources identified.[1]

Link to Outcomes or Health System Characteristics: National Center for Family-Centered Care Framework.[2]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Family practice (outpatient) in the United States
- **Population:** Children with chronic conditions
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are available online.[1]
- This instrument contains 105 items; 88 were mapped.

Sources:

1. Family Voices, funded by the Maternal and Child Health Bureau (MCBH). Family Centered Care Self-Assessment Tool – Provider Version. October 2008. Available at: http://www.familyvoices.org/pub/index.php?topic=fcc. Accessed: 17 September 2010.
2. National Center for Family-Centered Care. Family-centered care for children with special health care needs. Bethesda, MD: Association for the Care of Children’s Health; 1989.

Measure #12a. ICU Nurse-Physician Questionnaire - Long Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		■	
Interpersonal communication		■	
Information transfer		■	
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals		■	
Create a proactive plan of care		■	
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination		□	

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

ICU Nurse-Physician Questionnaire - Long Version

Purpose: To measure clinician perceptions of collaborative interactions, with a specific focus on leadership, organizational culture, communication, problem-solving, team cohesiveness, and coordination.

Format/Data Source: 218-item survey consisting of 11 sections. Requires approximately 45 minutes to complete.

Date: Measure published in 1991.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
(Sections II and III are property of Human Synergistics and were not mapped for this profile)

- **Communicate:**
        - *Between health care professional(s) and patient/family:* I.39d-g
        - *Within teams of health care professionals:* I.5, I.17, I.35, I.39a-c, VIIA.e
        - *Across health care teams or settings:* VIIB.f, I.16
    - Interpersonal communication:
        - *Within teams of health care professionals:* I.2, I.9, I.11, I.14, I.21, I.23
    - Information transfer:
        - *Between health care professional(s) and patient/family:*
        - *Within teams of health care professionals:* I.3, I.6, I.10, I.12, I.15, I.18, I.22, I.24, I.25, I.28, I.31, I.36, I.38, VIIA.i, VIIB.h
        - *Across health care teams or settings:* 1.8, I.20
- **Assess needs and goals:** V.1, V.3, V.11a, V.11c
- **Create a proactive plan of care:** I.36, I.38, VIIA.a, VIIA.b, VIIA.h, VIIB.a, VIIB.d, VIIB.e
- **Monitor, follow up, and respond to change:** I.28
- **Teamwork focused on coordination:** I.26, I.27, I.30, I.32, I.33, I.34, IV.1-48, V.9, VIA.1-16, VIB.1-16, VIIA.d, VIIA.f, VIIA.g, VIIB.b, VIIB.c, VIIB.g
- **Health IT-enabled coordination:** VIIA.c, VIIB.i

Development and Testing: The instrument demonstrated high reliability and validity for almost all scales. Testing was conducted using a nationally representative sample from 42 medical/surgical intensive care units (ICUs), and findings were further supported by on-site observational evaluation visits. Individual member responses can be aggregated to a unit level for broader evaluation. Factor analysis and analysis of variance were conducted as part of the testing process.[1]

Link to Outcomes or Health System Characteristics: A team-satisfaction-oriented culture, strong leadership, open and timely communication, effective coordination, and open collaborative problem-solving, as assessed by the ICU Nurse-Physician Questionnaire, corresponded with better performing health care sites. Performance in these sites was assessed by on-site evaluations, which consisted of interviews, observation of practice, and comparison with a set of "best" and "worst" practices.[1]

Logic Model/Conceptual Framework: Author-developed framework of managerial (leadership, culture) and organizational (coordination, communication, conflict management) factors affecting ICU performance.[1]

Past or Validated Applications:

- **Setting:** Intensive care units in the United States
- **Population:** Nurses and physicians
- **Level of evaluation:** Health Care Professional(s)

Notes:

- This instrument is available in nurse and physician versions. All questions are nearly identical in the two versions except for minor wording changes to reflect the appropriate audience. Both versions can be found online.[2]
- This instrument is also available in a short version, which can be found online.[2]
- This instrument contains 218 items; 157 were mapped.
- The measure developers believe that this instrument can be successfully used in other settings, beyond ICU units. We included it in the *Atlas* because of its strong relevance to the framework domains, robust reliability and validity, and potential for adaptation to a variety of other health care settings.

Sources:

1. Shortell S, Rousseau DM, Gillies RR, et al. Organizational assessment in Intensive Care Units (ICUs): Construct development, reliability, and validity of the ICU Nurse-Physician Questionnaire. Med Care 1991;29(8): 709-27.
2. UC Berkeley School of Public Health: Stephen M. Shortell Research Projects Web site. Available at: http://shortellresearch.berkeley.edu/ICU%20Questionnaires.htm. Accessed: 22 September 2010.

Measure #12b. ICU Nurse-Physician Questionnaire - Short Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		■	
Interpersonal communication		■	
Information transfer		■	
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals		■	
Create a proactive plan of care			
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

ICU Nurse-Physician Questionnaire - Short Version

Purpose: To measure clinician perceptions of collaborative interactions, with a specific focus on leadership, organizational culture, communication, problem-solving, team cohesiveness, and coordination.

Format/Data Source: 85-item survey consisting of 6 sections. Requires approximately 20 minutes to complete.

Date: Measure published in 1991.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:**
- **Communicate:**
        - *Within teams of health care professionals:* I.3, I.12, I.22
    - Interpersonal communication:
        - *Within teams of health care professionals:* I.1, I.6, I.8, I.10, I.15, I.17
    - Information transfer:
        - *Within teams of health care professionals:* I.2, I.4, I.7, I.9, I.11, I.13, I.16, I.18-21
- **Assess needs and goals:** III.1, III.3, III.11a, III.11c
- **Monitor, follow up, and respond to change:** I.20
- **Teamwork focused on coordination:** II.1-20, III.9, VIA.1-7, VIB.1-7

Development and Testing: The instrument demonstrated high reliability and validity for almost all scales. Testing was conducted using a nationally representative sample from 42 medical/surgical ICUs, and findings were further supported by on-site observational evaluation visits. Individual member responses can be aggregated to a unit level for broader evaluation. Factor analysis and analysis of variance were conducted as part of the testing process.[1]

Link to Outcomes or Health System Characteristics: A team-satisfaction-oriented culture, strong leadership, open and timely communication, effective coordination, and open collaborative problem-solving, as assessed by the ICU Nurse-Physician Questionnaire, corresponded with better performing health care sites. Performance in these sites was assessed by on-site evaluations, which consisted of interviews, observation of practice, and comparison with a set of "best" and "worst" practices.[1]

Logic Model/Conceptual Framework: Author-developed framework of managerial (leadership, culture) and organizational (coordination, communication, conflict management) factors affecting ICU performance.[1]

Past or Validated Applications:

- **Setting:** Intensive care units in the United States
- **Population:** Nurses and physicians
- **Level of evaluation:** Health Care Professional(s)

Notes:

- This instrument is available in nurse and physician versions. All questions are nearly identical in both versions except for minor wording changes to reflect the appropriate audience. Both versions can be found online.[2]
- This instrument is also available in a long version, which can be found online.[2]
- This instrument contains 85 items; 69 were mapped.
- The measure developers believe that this instrument can be successfully used in other settings, beyond ICU units. We included it in the *Atlas* because of its strong relevance to the framework domains, robust reliability and validity, and potential for adaptation to a variety of other health care settings.

Sources:

1. Shortell S, Rousseau DM, Gillies RR, et al. Organizational assessment in Intensive Care Units (ICUs): Construct development, reliability, and validity of the ICU Nurse-Physician Questionnaire. Med Care 1991;29(8):709-27.
2. UC Berkeley School of Public Health: Stephen M. Shortell Research Projects Web site. Available at: http://shortellresearch.berkeley.edu/ICU%20Questionnaires.htm. Accessed: 22 September 2010.

Measure #13. Primary Care Assessment Survey (PCAS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
Interpersonal communication	□		
Information transfer	□		
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Primary Care Assessment Survey (PCAS)

Purpose: To assess the performance of primary care physicians from the patient perspective.

Format/Data Source: 51-item, self-administered survey assessing primary care across 7 domains: (1) accessibility (organizational, financial), (2) continuity (longitudinal, visit-based), (3) comprehensiveness (contextual knowledge of patient, preventive counseling), (4) integration, (5) clinical interaction (clinician-patient communication, thoroughness of physical examinations), (6) interpersonal treatment, and (7) trust. A 3-step mail survey protocol was used with limited telephone followup. All PCAS items are non-visit specific to emphasize primary care in a sustained clinician-patient relationship. Responses were provided on a Likert scale.

Date: Measure published in 1998.[1]

Perspective: Patient/Family

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** 35
- **Communicate:**
    - *Between health care professional(s) and patient/family:* 12, 28, 30, 32, 33, 42, 46
    - *Across health care teams or settings:* 27
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 31, 35
  - Information transfer:
    - *Participants not specified:*13
- **Facilitate transitions:**
  - Across settings: 24 - 26
- **Assess needs and goals:** 15, 16
- **Monitor, follow up, and respond to change:** 25, 26
- **Support self-management goals:** 17-24, 34

Development and Testing: Through the use of Likert's method, 5 testing assumptions were met, specifically: (1) item-convergent validity, (2) item-discriminant validity, (3) equal item variance, (4) equal item-scale correlations, and (5) score reliability. Test-retest reliability determined stability of responses. Cronbach's alpha coefficients for each subscale substantially exceeded the recommended value.[1]

Link to Outcomes or Health System Characteristics: Strong associations are demonstrated between PCAS scales and outcomes such as patients' adherence to physicians' advice, patients' understanding of and ability to manage a chronic health condition, patients' satisfaction with their primary physicians, and patients' self-reported health improvements.[1]

Logic Model/Conceptual Framework: The foundation for the PCAS came from the Institute of Medicine's definition of primary care.[1]

Past or Validated Applications:

- **Setting:** Primary care in the United States
- **Population:** Primary care patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Appendix A of the source article were consecutively numbered.[1]
- This instrument contains 51 items; 49 were provided in Appendix A (2 were screener items); 22 were mapped.

Sources:

1. Safran DG, Kosinski M, Tarlov AR, et al. The Primary Care Assessment Survey: Tests of data quality and measurement performance. Med Care 1998;36(5):728-39.
2. Safran DG, Montgomery JE, Change H, et al. Switching doctors: Predictors of voluntary disenrollment from a primary physician’s practice. J Fam Pract 2001;50(2):130-36.
3. O’Malley AS, Forrest CB. Beyond the examination room: Primary care performance and the patient-physician relationship for low-income women. J Gen Int Med 2002;17:66-74.
4. Montgomery JE, Irish JT, Wilson IB, et al. Primary care experiences of Medicare beneficiaries, 1998 to 2000. J Gen Int Med 2004;19:991-8.

Measure #14. National Survey of Children With Special Health Care Needs (CSHCN)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
Interpersonal communication	■		
Information transfer	□		
Facilitate transitions			
Across settings	□		
As coordination needs change	■		
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management	■		
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

National Survey of Children With Special Health Care Needs (CSHCN)

Purpose: To collect information about children with special heath care needs (CSHCN) and their families to help guide policymakers, advocates, and researchers.

Format/Data Source: Telephone interview comprised of 11-13 sections (the 2005-2006 version consists of 11 sections, and the 2001 version consists of 13 sections). The sections most relevant to care coordination are Section 5 – Care Coordination, Section 6A – Family Centered Care, and Section 6B – Transition Issues.

Date: Measure administered nationally in 2001 and 2005-2006.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** C6Q08
- **Communicate:**
    - ▪ *Across health care teams or settings:* C5Q05, C5Q06, C5Q10
  - o Interpersonal communication:
    - ▪ *Between health care professional(s) and patient/family:* C6Q03, C6A0A, C6A0A_B, C6Q0A_C, C6Q0A_D, C6Q0A_E, C6Q0A_F
  - o Information transfer:
    - ▪ *Between health care professional(s) and patient/family:* C6Q04
- **Facilitate transitions:**
  - o Across settings: C5Q11, C4Q07
  - o As coordination needs change: C6A0A, C6A0A_B, C6Q0A_C, C6Q0A_D, C6Q0A_E, C6Q0A_F
- **Assess needs and goals:** C6A0A, C6Q0A_D
- **Align resources with patient and population needs:** S5Q13, S5Q13A
- **Care management:** C5Q09, C5Q12, C5Q13, C5Q14 INDEX, C5Q15, C5Q16 INDEX

Development and Testing: The survey was conceptualized and developed by an expert panel consisting of selected State and Federal Title V program directors, representatives from Family Voices and the Association for Maternal and Child Health Programs, health services researchers, and survey design experts. All questions were pretested in 2000. After it was administered nationally in 2001, the survey was revised based on suggestions made by data users. Each suggested revision was reviewed by a technical expert panel, and all new or substantially altered questions were pretested in 2004.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** United States
- **Population:** Children with special health care needs
- **Level of evaluation:** Health Care Professional(s)

Notes:

- This survey consists of many sections, but only the sections relevant to care coordination (Section 5– Care Coordination, Section 6A – Family Centered Care, Section 6B – Transition Issues) were mapped for this profile. The full-length instrument as well as a Spanish version can be found online.[1]
- The Measure Item Mapping portion of the profile refers to the question items found in the 2005-2006 version of the survey. For those interested in the 2001 version, it can be found online.[1]
- The mapped sections of the measure contain 27 items; 22 were mapped.
- The 2001 and 2005-2006 national and State data are publicly available for download online.[1]
- The CSHCN survey questions and data have also been used in several published studies. A list of these publications may be found online.[1]

Sources:

1. National Survey of Children With Special Health Care Needs Web site. Available at: http://cshcndata.org/Content/Default.aspx Accessed: 20 September 2010.
2. Blumberg SJ, Welch BM, Chowdhury SR, et al. Design and operation of the National Survey of Children With Special Health Care Needs, 2005-2006. National Center for Health Statistics. Vital Health Stat 2008;1(45).

Measure #15. Head and Neck Cancer Integrated Care Indicators

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
Interpersonal communication			
Information transfer			■
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			□
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Head and Neck Cancer Integrated Care Indicators

Purpose: To measure the quality of integrated care by assessing current practice for patients with head and neck cancer.

Format/Data Source: 8 integrated care indicators (ICI) and 23 specific indicators (SI) for patients with head and neck cancer.

Date: Measure published in 2007.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** SI 1
- **Communicate:**
  - Information transfer:
    - *Between health care professional(s) and patient/family:* ICI 8, SI 3, SI 5
    - *Across health care teams or settings:* SI 23
    - *Participants not specified:* SI 2
- **Facilitate transitions:**
  - Across settings: SI 12, SI 15
- **Care management:** ICI 5, ICI 6

Development and Testing: The indicators were developed using the RAND-modified appropriateness method, which involved systematically searching the literature for integrated care recommendations and performing a systematic consensus procedure based on evidence-based guidelines and the opinions of both professionals and patients. The clinimetric characteristics of the developed indicators were tested. All indicators had acceptable reliability values. The content validity of the indicators was guaranteed by the use of the RAND-modified appropriateness method.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** University hospital in the Netherlands
- **Population:** Patients with head and neck cancer
- **Level of evaluation:** Practice (head and neck oncology centers)

Notes:

- All ICI items located in Table 1 and all SI items located in Table 2 of the source article.[1]
- This instrument contains 31 items; 11 were mapped.

Source:

1. Ouwens MMMTJ, Marres HAM, Hermens RRP, et al. Quality of integrated care for patients with head and neck cancer: Development and measurement of clinical indicators. Head Neck 2007;29(4):378-86.

Measure #16a. Medical Home Index - Long Version (MHI-LV)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			◻
Communicate			◼
Interpersonal communication			
Information transfer			◻
Facilitate transitions			
Across settings			◻
As coordination needs change			◻
Assess needs and goals			◼
Create a proactive plan of care			◼
Monitor, follow up, and respond to change			
Support self-management goals			◻
Link to community resources			◼
Align resources with patient and population needs			◼
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			◼
Care management			◼
Medication management			
Health IT-enabled coordination			◻

Legend:
◼ = ≥ 3 corresponding measure items
◻ = 1-2 corresponding measure items

Medical Home Index - Long Version (MHI-LV)

Purpose: To measure the achievement of a medical home in primary care.

Format/Data Source: 25-item survey covering 6 domains: (1) organizational capacity, (2) chronic condition management, (3) care coordination, (4) community outreach, (5) data management, and (6) quality improvement. Responses are formatted based on a continuum from Level 1 to Level 4, which reflects the degree that a practice has achieved components of a medical home. An MHI score is calculated based on the responses to the 25 items.

Date: Measure published in 2003.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2.4, 3.1
- **Communicate:**
        - *Between health care professional(s) and patient/family:* 1.2, 2.3, 2.4
        - *Within teams of health care professionals:* 2.3, 2.4
        - *Across health care teams or settings:* 2.3, 2.4
        - *Participants not specified:* 2.2
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 1.3, 2.3
        - *Within teams of health care professionals:* 2.3
        - *Across health care teams or settings:* 2.3
- **Facilitate transitions:**
    - Across settings: 2.3, 2.4
    - As coordination needs change: 2.5.1
- **Assess needs and goals:** 1.1, 1.4, 1.5, 3.1, 3.2, 3.4, 3.5
- **Create a proactive plan of care:** 2.2, 3.1, 3.4
- **Support self-management goals:** 3.3
- **Link to community resources:** 2.3, 2.6, 4.2
- **Align resources with patient and population needs:** 1.6, 2.6, 3.5, 3.6, 4.1
- **Health care home:** 1.1-6.2
- **Care management:** 2.4, 3.1, 3.5
- **Health IT-enabled coordination:** 5.1, 5.2

Development and Testing: The instrument was initially reviewed by a national panel of Medical Home experts. Subsequent testing revealed internal consistency, construct validity, and inter-rater reliability for the MHI in the assessment of primary care practices' implementation of the medical home concept. Psychometric analyses were based on data collected from survey administration in 43 pediatric primary care practices.[1]

Link to Outcomes or Health System Characteristics: A study conducted across 43 primary care practices revealed that higher scores on the Medical Home Index and specifically higher subdomain scores for organizational capacity, care coordination, and chronic-condition management were associated with significant reductions in hospitalizations. Higher chronic-condition management scores were associated with lower emergency department use.[2]

Logic Model/Conceptual Framework: Medical Home Model.

Past or Validated Applications:

- **Setting:** Primary care pediatric or family medicine practices in the United States
- **Population:** Children with special health care needs (CSHCN)
- **Level of evaluation:** System; Practice

Notes:

- This instrument also has an available adult version. All questions are nearly identical except for minor wording changes to reflect adult care. Both the pediatric and adult versions can be found online.[3]
- This instrument is also available in a short version, which can be found online.[3]
- This instrument contains 25 items; all 25 were mapped.

Sources:

1. Cooley WC, McAllister JW, Sherrieb K, et al. The Medical Home Index: Development and validation of a new practice-level measure of implementation of the medical home. Ambul Pediatr 2003;3(4):173-80.
2. Cooley WC, McAllister JW, Sherrieb K, et al. Improved outcomes associated with medical home implementation in primary care. Pediatrics 2009;124(1):358-64.
3. Center for Medical Home Improvement (CMHI) Web site. Available at: http://www.medicalhomeimprovement.org/knowledge/practices.html#measurement Accessed: 20 September 2010

Measure #16b. Medical Home Index - Short Version (MHI-SV)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			■
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			□
Assess needs and goals			□
Create a proactive plan of care			■
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■
Care management			□
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Medical Home Index - Short Version (MHI-SV)

Purpose: To be used as either: (1) an interval measurement in conjunction with the original MHI or (2) a quick "report card" or snapshot of practice quality. The Center for Medical Home Improvement (CMHI) recommends the use of the full MHI for practice improvement purposes and offers this short version for interval measurement and/or when it is not feasible to use the full MHI.

Format/Data Source: 10-item survey that scores a practice on a continuum of care across 3 levels that reflect the degree to which a practice has achieved components of a medical home.

Date: Measure released in 2006.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 7
- **Communicate:**
    - *Between health care professional(s) and patient/family:* 5
    - *Within teams of health care professionals:* 5
    - *Across health care teams or settings:* 5
    - *Participants not specified:* 4
- **Facilitate transitions:**
    - As coordination needs change: 6
- **Assess needs and goals:** 1, 8
- **Create a proactive plan of care:** 4, 7, 8
- **Align resources with patient and population needs:** 2, 9
- **Health care home:** 1-10
- **Care management:** 5, 7

Development and Testing: The short version did not undergo the same rigorous validation process as the long version, but it was arrived at through the same statistical process applied to the originally validated long version.[1]

Link to Outcomes or Health System Characteristics: A study using the related Medical Home Index – Long Version showed that higher MHI scores were associated with reduced hospitalizations.[2]

Logic Model/Conceptual Framework: Medical Home Model.

Past or Validated Applications:

- **Setting:** Primary care pediatric or family medicine practices in the United States.
- **Population:** Children with special health care needs (CSHCN)
- **Level of evaluation:** System; Practice

Notes:

- This instrument also has an available adult version. All questions are nearly identical except for minor wording changes to reflect adult care. Both the pediatric and adult versions can be found online.[2]
- This instrument is also available in a long version, which can be found online.[1]
- This instrument contains 10 items; all 10 were mapped.

Sources:

1. Center for Medical Home Improvement (CMHI) Web site. Available at: http://www.medicalhomeimprovement.org/knowledge/practices.html#measurement Accessed: 20 September 2010.
2. Cooley WC, McAllister JW, Sherrieb K, et al. Improved outcomes associated with medical home implementation in primary care. Pediatrics 2009;124(1):358-64.

Measure #16c. Medical Home Family Index and Survey (MHFIS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings	□		
As coordination needs change	□		
Assess needs and goals	■		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home	■		
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Medical Home Family Index and Survey (MHFIS)

Purpose: To provide a consumer report on practice performance, on the family experience of care, and detailed clinical, functional, satisfaction, and cost outcomes of child and family.

Format/Data Source: A 25-item Medical Family Home Index and a supplementary 47-item Family/Caregiver Survey. The index tracks to 3 of the 6 original MHI domains:
(1) organizational capacity, (2) chronic condition management, and (3) care coordination.

Date: Measure released in 2005.[1]

Perspective: Patient/Family

Measure Item Mapping:
(Index items are coded as I 1-25, and survey items are coded S 1-47)

- **Establish accountability or negotiate responsibility:** S 28, S 29, S 31-34, S 36
- **Communicate:**
        - *Between health care professional(s) and patient/family:* S 33
        - *Across health care teams or settings:* S 37
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* I 3-6
        - *Participants not specified:* I 11d
    - Information transfer:
        - *Between health care professional(s) and patient/family:* I 7a, I 9, I 13, I 14, S 34
        - *Across health care teams or settings:* I 12a, I 12b
- **Facilitate transitions:**
    - Across settings: I 11a
    - As coordination needs change: I 18
- **Assess needs and goals:** I 2c, I 2d, I 7b, I 7c, S 33
- **Create a proactive plan of care:** I 7a-d, I 8, I 19
- **Monitor, follow up, and respond to change:** I 7d, I 10a, I 10c, I 11a, S 37
- **Support self-management goals:** I 10b, S 28, S 29, S 31, S 32
- **Link to community resources:** I 10b, I 11b, I 16, S 37
- **Align resources with patient and population needs:** I 11b, I 11c
- **Teamwork focused on coordination:** I 19, S 21
- **Health care home:** I 1-25

Development and Testing: The development of the questions and language of the MHFIS involved the input of parents. The MHFIS is not a validated measure but was developed to serve as a companion to the validated MHI. It has been used in a study and was administered to a sample of 300 parents across 10 practices. [2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Medical Home Model.

Past or Validated Applications:

- **Setting:** Primary care pediatric or family medicine practices in the United States.
- **Population:** Children with special health care needs (CSHCN)
- **Level of evaluation:** System; Practice

Notes:

- All instrument items are located online.[1]
- This instrument contains 72 items; 32 (25 index items, 7 survey items) were mapped.

Sources:

1. Center for Medical Home Improvement (CMHI) Web site. Available at: http://www.medicalhomeimprovement.org/knowledge/practices.html#measurement Accessed: 20 September 2010.
2. McAllister JW, Sherrieb K, Cooley CW. Improvement in the family-centered medical home enhances outcomes for children and youth with special healthcare needs. J Ambul Care Manage 2009;32(3):188-96.

Measure #17a. Primary Care Assessment Tool – Child Expanded Edition (PCAT-CE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Primary Care Assessment Tool – Child Expanded Edition (PCAT-CE)

Purpose: To measure pediatric care delivery from the patient/family perspective.

Format/Data Source: Community-based telephone survey (approximately 25 minutes in length). Survey responses are provided by children's parents and/or guardians. Some questions are designated as specifically related to care coordination. However, other items in other domains may be relevant to care coordination, although they are not explicitly categorized as measuring care coordination. Questions span 4 domains of primary care: (1) longitudinality, (2) accessibility, (3) comprehensiveness, and (4) coordination. Subtopics include: (A) affiliation with place/doctor, (B) first contact – utilization, (C) first contact – access, (D) ongoing care, (E) coordination, (F) coordination (information systems), (G) comprehensiveness (services available), (H) comprehensiveness (services provided),(I) family-centeredness, (J) community orientation, (K) culturally competent, (L) insurance questions, (M) health assessment, and (N) demographic/socioeconomic characteristics. Responses provided on a Likert scale.

Date: Measure published in 1998.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** A3
- **Communicate:**
        - *Between health care professional(s) and patient/family:* E7
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* C4, D1-D4, D6, E8, E12
    - Information transfer:
        - *Between health care professional(s) and patient/family:* E1, F1-F3, I2
        - *Across health care teams or settings:* E10, E11
        - *Participants not specified:* D10
- **Facilitate transitions:**
    - Across settings: B3, E6, E9
- **Assess needs and goals:** D7, D9, E8, I1
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12
- **Support self-management goals:** G1-G15, G25, H1, H2, H14-H18
- **Align resources with patient and population needs:** C1-C12, I3, J1
- **Health care home:** A1-A3, B1, B2, B4, D1
- **Medication management:** D13

Development and Testing: Adequate consistency, reliability, and construct validity established via psychometric testing of the survey on a sample of 450 parents/guardians of pediatric patients. The principal components factor analysis yielded 5 separate factors. These corresponded to the instrument's subdomains: first contact accessibility; coordination of care; characteristics of the professional-patient relationship over-time; comprehensiveness of services available;

comprehensiveness of services received. Overall, psychometric assessment supported the adequacy of the PCAT-CE for assessing the characteristics/quality of primary care in pediatric settings.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.[3]

Past or Validated Applications:

- **Setting:** Primary care practices in the United States; adapted and translated for use in other countries (see notes below)
- **Population:** Children (< 18 years) affiliated with primary care practices
- **Level of evaluation:** Health Care Professional(s); System

Notes:

- All instrument items are available online.[1]
- This instrument contains 115 items; 86 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.[1]
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- For further information regarding these measures, please visit the Web site, which provides detailed instructions and implementation use.[1]

Sources:

1. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
2. Cassady, Starfield B, Hurtado MP, et al. Measuring consumer experiences with primary care. Pediatrics 2000;105:998-1003.
3. Starfield B. Primary care: concept, evaluation, and policy. New York: Oxford University Press; 1992.
4. Stevens GD, Shi LY. Racial and ethnic disparities in the quality of primary care for children. J Fam Pract 2002;51(6).

Measure #17b. Primary Care Assessment Tool – Adult Expanded Edition (PCAT – AE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■		
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Primary Care Assessment Tool – Adult Expanded Edition (PCAT-AE)

Purpose: To measure primary care quality and the extent to which it meets consumer needs, as identified from the adult patient perspective.

Format/Data Source: Mailed surveys taking approximately 40 minutes to complete. The validated PCAT-AE covers 5 primary care domains: (1) longitudinality, (2) first contact, (3) coordination, (4) comprehensiveness, and (5) derivative. Within the 5 domains are 7 scales: (1) first contact domain – accessibility, (2) first contact – utilization, (3) longitudinal domain – ongoing care, (4) coordination domain – coordination of services, (5) comprehensiveness domain – services available, (6) comprehensiveness domain – services received, (7) derivative domain – community orientation. Some questions are designated as specifically related to care coordination. However, other items in other domains may be relevant to care coordination, although they are not explicitly categorized as measuring care coordination. Responses provided on a Likert scale, and a total score was determined through the summation of values across the 5 primary care domains.

Date: Measure published in 2001.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** A3
- **Communicate:**
        - *Between health care professional(s) and patient/family:* E7
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* C4, D1-D4, D6, E8, E12, I1
    - Information transfer:
        - *Between health care professional(s) and patient/family:* E1, F1-F3, I2
        - *Across health care teams or settings:* E10, E11
        - *Participants not specified:* D10
- **Facilitate transitions:**
    - Across settings: B3, E6, E9
- **Assess needs and goals:** D7, D9, E8, I1
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12
- **Support self-management goals:** G1-G25, H1-H13
- **Align resources with patient and population needs:** C1-C12, I3, J1
- **Health care home:** A1-A3, B1, B2, D1
- **Medication management:** D13

Development and Testing: Factor and reliability analyses were conducted for all scales and domains, which were demonstrated to be both valid and reliable. Tests of Likert scaling assumptions (item-convergent validity, item-discriminant validity, equal item variance, equal item scale correlation, and score reliability) demonstrated that they were met. One-half of respondents reported the maximum score on the first-contact-utilization scale, indicating that a ceiling effect may be present for this scale; there was no evidence of a floor or ceiling effect for other scales. Tests of alpha coefficients and inter-factor correlations demonstrated that each primary care scale made a unique contribution to the instrument.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.[2]

Past or Validated Applications:

- **Setting:** Primary care practices in the United States; adapted and translated for use in other countries (see notes below).
- **Population:** Adult primary care patients
- **Level of evaluation:** Health Care Professional(s); System

Notes:

- All instrument items are available online.[3]
- This instrument contains 131 items; 80 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.[3]
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- For further information regarding these measures, please visit the Web site, which provides detailed instructions and implementation use.[3]

Sources:

1. Shi LY, Starfield BH, Xu J. Validating the Adult Primary Care Assessment Tool. J Fam Pract 2001;50:161.
2. Starfield B. Primary care: Concept, evaluation, and policy. New York: Oxford University Press; 1992.
3. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
4. Shi LY, Starfield BH, Xu J, et al. Primary care quality: Community health center and health maintenance organization. South Med J 2003;96(8):787-95.

Measure #17c. Primary Care Assessment Tool – Facility Expanded Edition (PCAT – FE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			□
Interpersonal communication			■
Information transfer			■
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			■
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			■
Link to community resources			■
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			□
Care management			
Medication management			■
Health IT-enabled coordination			□

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Primary Care Assessment Tool – Facility Expanded Edition (PCAT – FE)

Purpose: To measure primary care quality and the extent to which it meets consumer needs, as identified from the facility perspective.

Format/Data Source: 153-item survey with coverage across 4 domains of primary care: (1) longitudinality, (2) accessibility, (3) comprehensiveness, and (4) coordination. Relevant subtopics include: (C) first contact – access, (D) ongoing care, (E) coordination, (F) coordination – information systems, (G) comprehensiveness – services available, (H) comprehensiveness – services provided, (I) family-centeredness, (J) community orientation, (K) culturally competent, and Other. Some questions are designated as specifically related to care coordination. However, other items in other domains may be relevant to care coordination, although they are not explicitly categorized as measuring care coordination. Responses provided on a Likert scale.

Date: Measure published in 1998.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
    - *Between health care professional(s) and patient/family:* E7
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* C4, D2-D4, D6, E8, E12, I1, I4-I10,
  - Information transfer:
    - *Between health care professional(s) and patient/family:* D10, E1, F1-F4, I2
    - *Across health care teams or settings:* E10, E11
- **Facilitate transitions:**
  - Across settings: E9
- **Assess needs and goals:** D7, D9, E8, I1, I11-I14,
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12, F7
- **Support self-management goals:** G1-G25, H1-H18
- **Link to community resources:** J13-J17, J21-J23
- **Align resources with patient and population needs:** C1-C9, I3, J1, J4-J9, K2-10
- **Health care home:** 14, D1
- **Medication management:** D13, F8, H7
- **Health IT-enabled coordination:** 13

Development and Testing: No testing was described in the sources identified. However, testing information is available for other versions.[1,2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.[3]

Past or Validated Applications:

- **Setting:** Primary care practices in the United States; adapted and translated for use in other countries (see notes below).
- **Population:** Primary care patients
- **Level of evaluation:** System

Notes:

- All instrument items are located online.[1]
- This instrument contains 153 items; 114 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- The PCAT-FE uses a majority of the same items across the same domains as the PCAT-PE.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.[1]
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- For further information regarding these measures, please visit the Web site, which provides detailed instructions and implementation use.[1]

Sources:

1. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
2. Shi LY, Starfield BH, Xu J. Validating the Adult Primary Care Assessment Tool. J Fam Pract 2000; 50:161.
3. Starfield B. Primary care: Concept, evaluation, and policy. New York: Oxford University Press; 1992.
4. Starfield B, Cassady C, Nanda J, et al. Consumer experiences and provider perceptions of the quality of primary care: implications for managed care. J Fam Pract 1998;46:216-26.

Measure #17d. Primary Care Assessment Tool – Provider Expanded Edition (PCAT – PE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		□	
Interpersonal communication		■	
Information transfer		■	
Facilitate transitions			
Across settings		□	
As coordination needs change			
Assess needs and goals		■	
Create a proactive plan of care			
Monitor, follow up, and respond to change		■	
Support self-management goals		■	
Link to community resources		■	
Align resources with patient and population needs		■	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home		□	
Care management			
Medication management		■	
Health IT-enabled coordination		□	

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Primary Care Assessment Tool – Provider Expanded Edition (PCAT – PE)

Purpose: To measure primary care quality and the extent to which it meets consumer needs, as identified from the provider perspective.

Format/Data Source: 153-item survey with coverage across 4 domains of primary care: (1) longitudinality, (2) accessibility, (3) comprehensiveness, and (4) coordination. Relevant subtopics include: (C) first contact – access, (D) ongoing care, (E) coordination, (F) coordination – information systems, (G) comprehensiveness – services available, (H) comprehensiveness – services provided, (I) family-centeredness, (J) community orientation, (K) culturally competent, and Other.

Date: Measure published in 1998.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
    - *Between health care professional(s) and patient/family:* E7
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* C4, D2-D4, D6, E8, E12, I1, I4-I10,
  - Information transfer:
    - *Between health care professional(s) and patient/family:* D10, E1, F1-F4, I2
    - *Across health care teams or settings:* E10, E11
- **Facilitate transitions:**
  - Across settings: E9
- **Assess needs and goals:** D7, D9, E8, I1, I11-I14,
- **Monitor, follow up, and respond to change:** C8, E7, E11, E12, F7
- **Support self-management goals:** G1-G25, H1-H18
- **Link to community resources:** J13-J17, J21-J23
- **Align resources with patient and population needs:** C1-C9, I3, J1, J4-J9, K2-10
- **Health care home:** 14
- **Medication management:** D13, F8, H7
- **Health IT-enabled coordination:** 13, D1

Development and Testing: No testing was described in the sources identified. However, testing information is available for other versions.[1,2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Based on a framework of primary care.[3]

Past or Validated Applications:

- **Setting:** Primary care practices in the United States; adapted and translated for use in other countries (see notes below).
- **Population:** Primary care patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located online.[1]
- This instrument contains 153 items; 114 were mapped.
- There are 4 expanded versions of this instrument addressing 4 perspectives: (1) child, (2) adult, (3) facility, and (4) physician. There are 4 short versions for each of the 4 perspectives as well.
- The PCAT-PE uses a majority of the same items across the same domains as the PCAT-FE.
- Versions of the PCAT tools are also available in Spanish, Catalan, Portuguese, Mandarin Chinese (both People's Republic of China and Taiwan), and Korean.[1]
- The PCAT is in the process of being computerized, in administration as well as scoring, for widespread use around the world, including especially Southeast Asia, the Gulf States, several countries in Europe, South Africa, several countries in Latin America (especially Brazil and Uruguay), China and Hong Kong, and others. (B. Starfield, personal communication, September 8, 2010).
- For further information regarding these measures, please visit the Web site, which provides detailed instructions and implementation use.[1]

Sources:

1. Johns Hopkins University Bloomberg School of Public Health. Available at: http://www.jhsph.edu/pcpc/pca_tools.html. Accessed: 20 September 2010.
2. Shi LY, Starfield BH, Xu J. Validating the Adult Primary Care Assessment Tool. J Fam Pract 2000; 50:161.
3. Starfield B. Primary care: Concept, evaluation, and policy. New York: Oxford University Press; 1992.
4. Starfield B, Cassady C, Nanda J, et al. Consumer experiences and provider perceptions of the quality of primary care: implications for managed care. J Fam Pract 1998;46:216-26.

Measure #18. Physician-Pharmacist Collaboration Instrument (PPCI)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate			
Interpersonal communication		□	
Information transfer		□	
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Physician-Pharmacist Collaboration Instrument (PPCI)

Purpose: To assess physician-pharmacist collaborative relationships across three domains: trustworthiness; role specification; relationship initiation.

Surveys can be directed at physicians and pharmacists respectively: questions are identical with provider title (physician/pharmacist) interchanged depending on the study population.

Format/Data Source: 14-item survey that consists of 3 domains of collaboration:
(1) trustworthiness, (2) role specification, and (3) relationship initiation.

Date: Measure published in 2005.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** 1, 5-8
- **Communicate:**
  - Interpersonal communication:
    - *Across health care teams or settings:* 3, 11
  - Information transfer:
    - *Across health care teams or settings:* 13
- **Teamwork focused on coordination:** 9, 12
- **Medication management:** 7, 8

Development and Testing: Testing of an initial 27-item version was conducted using results from 340 surveys. Principal component analysis was used to assess the structure and uncover underlying dimensions of the initial instrument. Items were evaluated for inclusion or exclusion and subsequently refined into a 14-item instrument. Validity and reliability were established for the 14-item version of the PPCI based on confirmatory factor analysis and Cronbach's alpha scores, respectively. The authors caution that the survey may not reflect interactions for physicians working with more than 1 pharmacist. The 14-item version is preferred over the 26-item version on the basis of brevity and similar psychometric properties.[1] The sensitivity of the instrument was established through a randomized, intervention trial.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The authors developed a theoretical model of physician-pharmacist collaborative working relationships.[3]

Past or Validated Applications:
- **Setting:** Not specific
- **Population:** Physicians and pharmacists
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items were consecutively numbered. The instrument was provided by the corresponding author upon request (A.J. Zillich, personal communication, September 9, 2010).
- This instrument contains 14 items; 10 were mapped.

Sources:

1. Zillich AJ, Doucette WR, Carter BL, et al. Development and initial validation of an instrument to measure physician-pharmacist collaboration from the physician perspective. Value Health 2005;8(1):59-66.
2. Zillich AJ, Milchak JL, Carter BL, et al. Utility of a questionnaire to measure physician/pharmacist collaborative relationships. J Am Pharm Assoc 2006;46:453-58.
3. McDonough R, Doucette W. A conceptual framework for collaborative working relationships between pharmacists and physicians. J Am Pharm Assoc 2001;41:682–92.
4. Zillich AJ, McDonough RP, Carter BL, et al. Influential characteristics of physician/pharmacist collaborative relationships. Ann Pharmacother 2004;38:764-70.

Measure #19. Readiness for the Patient-Centered Medical Home

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			■
Support self-management goals			□
Link to community resources			
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■
Care management			
Medication management			
Health IT-enabled coordination			□

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Readiness for the Patient-Centered Medical Home

Purpose: To measure the prevalence of recommended capabilities for medical home practices.

Format/Data Source: 13-item survey that addresses 13 structural capabilities across four main domains: (1) patient assistance and reminders, (2) culture of quality, (3) enhanced access, and (4) electronic health records.

Date: Measure published in 2008.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Monitor, follow up, and respond to change:** 2-5
- **Support self-management goals:** 1
- **Align resources with patient and population needs:** 10-12
- **Health care home:** 1-13
- **Health IT-enabled coordination:** 13

Development and Testing: The survey is based on evidence and findings from previously published literature, as well as existing surveys of physician group characteristics. It was revised from its original version to improve validity after cognitive testing by physicians was completed.[1]

Link to Outcomes or Health System Characteristics: A survey of 308 adult primary care practices in Massachusetts revealed that larger and network-affiliated practices were more likely than smaller, non-affiliated practices to have implemented recommended medical home components.[1]

Logic Model/Conceptual Framework: National Committee for Quality Assurance (NCQA) Standards for a Patient-Centered Medical Home.[1]

Past or Validated Applications:

- **Setting:** Adult primary care practices in the United States
- **Population:** Physicians and their practices
- **Level of evaluation:** System; Practice

Notes:

- All instrument items are located in the Appendix of the source article.[1]
- This instrument contains 13 items; all 13 were mapped.

Source:

1. Friedberg MW, Safran DG, Coltin KL, et al. Readiness for the patient-centered medical home: Structural capabilities of Massachusetts primary care practices. J Gen Int Med 2008;24(2):162-9.

Measure #20. Family Medicine Medication Use Processes Matrix (MUPM)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate			
Interpersonal communication			
Information transfer		□	
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change		■	
Support self-management goals		□	
Link to community resources			
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		■	
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Family Medicine Medication Use Processes Matrix (MUPM)

Purpose: To measure the perceptions of primary care physicians (family practice) in regard to pharmacists' contributions within the practices.

Format/Data Source: 22-item Family Medicine Medication Use Processes Matrix instrument mailed to family practice physicians at 3 times: (1) 3 months, (2) 1 year, and (3) 19 months after pharmacist integration. There are response sections for 5 different health care professionals: (1) family physician, (2) family practice pharmacist, (3) nurse, (4) receptionist, and (5) community pharmacist.

Date: Measure published in 2008.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 13
  - Information transfer:
    - *Within teams of health care professionals:* 20
    - *Participants not specified:* 17
- **Assess needs and goals:** 4, 9
- **Monitor, follow up, and respond to change:** 9, 11, 12
- **Support self-management goals:** 9, 19
- **Align resources with patient and population needs:** 19
- **Medication management:** 3, 5, 7, 10, 15-18, 20

Development and Testing: The IMPACT Program was used in large scale to develop this 22-item Family Medicine Medication Use Processes Matrix (MUPM). The self-completed questionnaire was pilot tested by 11 pharmacists, nurses, and physicians. Five theoretical groupings were identified: (1) Diagnosis & Prescribing, (2) Monitoring, (3) Administrative/ Documentation, (4) Education, and (5) Medication Review. Good internal consistency and test-retest reliability were demonstrated. Preliminary validation suggested the tool can identify differences in how health professionals view their and others' roles in primary care. Cronbach's alpha coefficient was used to determine internal consistency, test-retest reliability scores were calculated using intra-class coefficients, and all were deemed sufficiently valid.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Development of the MUPM instrument was informed by several frameworks of medication-use processes. The MUPM was developed as part of the Integrating family Medicine and Pharmacy to Advance primary Care Therapeutics (IMPACT) project.[1]

Past or Validated Applications:

- **Setting:** Primary care family practices in the United States
- **Population:** Primary care physicians (within family practices)
- **Level of evaluation:** Health Care Professional(s)

Notes:

- This instrument was provided by the corresponding author upon request (B. Farrell, personal communication, September 13, 2010).
- This instrument contains 23 items; 15 were mapped.

Sources:

1. Farrell B, Pottie K, Woodend K, et al. Developing a tool to measure contributions to medication-related processes in family practice. J Interprof Care 2008;22(1):17-29.
2. Farrell B, Pottie K, Woodend K, et al. Shifts in expectations: Evaluating physicians' perceptions as pharmacists become integrated into family practice. J Interprof Care 2010;24(1):80-9.

Measure #21. Resources and Support for Self-Management (RSSM)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication	◻		
Information transfer	◻		
Facilitate transitions			
Across settings	◻		
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care	◻		
Monitor, follow up, and respond to change	■		
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management	■		
Medication management	◻		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
◻ = 1-2 corresponding measure items

Resources and Support for Self-Management (RSSM)

Purpose: To measure the receipt of self-management support for chronically ill patients.

Format/Data Source: Adapted the 20-item Patient Assessment of Chronic Illness Care (PACIC) survey, adding new items that addressed domains (including followup and support for community resources) and removing others, for a finalized 17-item instrument. The RSSM portion of the survey contains 17 items spanning 5 areas: (1) individualized assessment, (2) collaborative goal setting, (3) enhancing skills, (4) ongoing followup and support, and (5) community resources.

Date: Measure published in 2008.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 10, 15
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 14
- **Facilitate transitions:**
  - Across settings: 9
- **Assess needs and goals:** 1, 2, 4, 5
- **Create a proactive plan of care:** 3, 4
- **Monitor, follow up, and respond to change:** 1, 2, 5, 9-15
- **Support self-management goals:** 1, 6-8, 11
- **Link to community resources:** 11, 16, 17
- **Care management:** 1-15
- **Medication management:** 12, 13

Development and Testing: Two rounds of cognitive testing on 14 participants pilot-tested the RSSM questionnaire. Further testing was performed on a sample of 957 patients with diabetes. Cronbach's alpha coefficients supported construct validity. The RSSM tool exhibited good psychometric properties and was used successfully by respondents of varying education levels.[1]

Link to Outcomes or Health System Characteristics: Patients with diabetes who reported higher RSSM scores also reported better self-management behaviors (more frequently checking blood sugar and feet, greater program participation, better diet and nutrition behaviors, and greater physical activity).[1]

Logic Model/Conceptual Framework: The Chronic Care Model provided the framework for construction of the RSSM. The model identifies 6 elements of a delivery system that lead to improved care for the chronically ill, including: (1) organization of care within the health system,

(2) clinical information systems, (3) decision support, (4) delivery system design, (5) self-management support, and (6) community resources and policies.[1]

Past or Validated Applications:

- **Setting:** United States
- **Population:** Chronically ill patients (modeled for diabetics)
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in Table 2 of the source article.[1]
- This instrument contains 17 items; all 17 were mapped.

Source:

1. McCormack LA, Williams-Piehota PA, Bann CM, et al. Development and validation of an instrument to measure resources for chronic illness self-management: a model using diabetes. Diabetes Educator 2008;34(4):707-18.

Measure #22a. Continuity of Care Practices Survey – Program Level (CCPS-P)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			□
Interpersonal communication			□
Information transfer			■
Facilitate transitions			
Across settings			■
As coordination needs change			□
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			■
Support self-management goals			□
Link to community resources			■
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			■
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Continuity of Care Practices Survey – Program Level (CCPS-P)

Purpose: To evaluate the program-level version of the Continuity of Care Practices Survey (CCPS-P) addressing continuity of care in substance use disorder (SUD) treatment programs.

Format/Data Source: The CCPS-P is a 23-item instrument that addresses 4 continuity of care practice subscales from a program-level perspective. These subscales include: (1) provider continuity, (2) maintain contact, (3) connect to resources, and (4) coordinate care. Responses provided on a Likert scale.

Date: Measure published in 2004.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
        - *Within teams of health care professionals:* 8D, 8E
    - Interpersonal communication:
        - *Within teams of health care professionals:* 8A
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 9.2, 9.3
        - *Within teams of health care professionals:* 8C
- **Facilitate transitions:**
    - Across settings: 4, 5A-6A, 7A-F, 8B, 9.1-9.4,
    - As coordination needs change: 6B
- **Create a proactive plan of care:** 8B
- **Monitor, follow up, and respond to change:** 5A-6B, 8D, 8E
- **Support self-management goals:** 9.1
- **Link to community resources:** 7B-D
- **Care management:** 10A-C, 11

Development and Testing: All Veterans Administration (VA) intensive SUD treatment programs were identified through telephone interviews. Questionnaires were mailed to directors of these programs to obtain data necessary to examine the reliability and discriminant validity of the CCPS-P. Internal consistency reliability was demonstrated via Cronbach's alpha coefficients, which were moderate to high for 117 of the 129 SUD programs on psychometric characteristics. Preliminary evidence of discriminant validity was also demonstrated. Predictive validity was assessed through regression analyses using data from both the program level and the individual level. Internal reliability of the CCPS subscales was supported across inpatient/residential and outpatient SUD programs for both the program and individual levels.[1]

Link to Outcomes or Health System Characteristics: Patients in outpatient, but not inpatient/residential, programs who received more continuity of care, as measured by the CCPS-P and CCPS-I, remained engaged in continuing care for longer periods of time than patients with weaker continuity of care scores.[2] Continuity of care practices have also been shown to influence abstinence from substance abuse when mediated through patients' engagement in continuing care.[3]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Inpatient/residential and outpatient substance use disorder treatment programs in the United States
- **Population:** Veterans with substance use disorders
- **Level of evaluation:** System

Notes:

- Instrument was provided by the corresponding author upon request (J.A. Schaefer, personal communication, September 1, 2010).
- This instrument contains 23 items; all 23 were mapped.
- Further application and testing of the CCPS-P is available.[2,3]

Sources:

1. Schaefer JA, Cronkite R, Ingudomnukul E. Assessing continuity of care practices in substance use disorder treatment programs. J Stud Alcohol 2004;65:513-20.
2. Schaefer JA, Ingudomnukul BA, Harris AHS, et al. Continuity of Care Practices and Substance Use Disorder Patients' Engagement in Continuing Care. Med Care 2005;43(12):1234-41.
3. Schaefer JA, Harris AHS, Cronkite RC, et al. Treatment staff's continuity of care practices, patients' engagement in continuing care, and abstinence following outpatient substance-use disorder treatment. J Stud Alcohol Drugs 2008;69(5):747-56.

Measure #22b. Continuity of Care Practices Survey – Individual Level (CCPS-I)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		□	
Interpersonal communication		□	
Information transfer		■	
Facilitate transitions			
Across settings		■	
As coordination needs change		□	
Assess needs and goals			
Create a proactive plan of care		□	
Monitor, follow up, and respond to change		■	
Support self-management goals		□	
Link to community resources		■	
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management		□	
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Continuity of Care Practices Survey – Individual Level (CCPS-I)

Purpose: To evaluate the individual-level version of the Continuity of Care Practices Survey (CCPS-I) addressing continuity of care in substance use disorder (SUD) treatment programs.

Format/Data Source: The CCPS-I was reformatted for individual patients but addresses the same 4 continuity of care practice subscales: (1) provider continuity, (2) maintain contact, (3) connect to resources, and (4) coordinate care. Responses were provided on a Likert scale.

Date: Measure published in 2004.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 5B
- **Communicate:**
        - *Across health care teams or settings:* 9E
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* 7A
        - *Within teams of health care professionals:* 7G
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 8.2, 8.3
        - *Across health care teams or settings:* 7I
- **Facilitate transitions:**
    - Across settings: 5A, 7A-I, 8.1-8.4, 9D
    - As coordination needs change: 6
- **Create a proactive plan of care:** 7F, 7H
- **Monitor, follow up, and respond to change:** 9A-C, 9E, 9F
- **Support self-management goals:** 8.1
- **Link to community resources:** 7B-E
- **Care management:** 5B

Development and Testing: All Veterans Administration intensive SUD treatment programs were identified through telephone interviews. Questionnaires were mailed to directors of these programs to obtain data necessary to examine the reliability and discriminant validity of the CCPS-P. Internal consistency reliability was demonstrated via Cronbach's alpha coefficients, which were moderate to high for 117 of the 129 SUD programs on psychometric characteristics. Preliminary evidence of discriminant validity was also demonstrated. Predictive validity was assessed through regression analyses using data from both the program level and the individual level. Internal reliability of the CCPS subscales was supported across inpatient/residential and outpatient SUD programs for both the program and individual levels.[1]

Link to Outcomes or Health System Characteristics: Patients in outpatient, but not inpatient/residential, programs who received more continuity of care, as measured by the CCPS-

P and CCPS-I, remained engaged in continuing care for longer periods of time than patients with weaker continuity of care scores.[2] Continuity of care practices have also been shown to influence abstinence from substance abuse when mediated through patients' engagement in continuing care.[3]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Inpatient/residential and outpatient substance use disorder treatment programs in the United States
- **Population:** Veterans with substance use disorders
- **Level of evaluation:** Health Care Professional(s)

Notes:

- Instrument was provided by the corresponding author upon request (J.A. Schaefer, personal communication, September 1, 2010).
- This instrument contains 22 items; all 22 were mapped.
- Further application and testing of the CCPS-I is available.[2,3]

Sources:

1. Schaefer JA, Cronkite R, Ingudomnukul E. Assessing continuity of care practices in substance use disorder treatment programs. J Stud Alcohol 2004;65:513-20.
2. Schaefer JA, Ingudomnukul BA, Harris AHS, et al. Continuity of Care Practices and Substance Use Disorder Patients' Engagement in Continuing Care. Med Care 2005;43(12):1234-41.
3. Schaefer JA, Harris AHS, Cronkite RC, et al. Treatment staff's continuity of care practices, patients' engagement in continuing care, and abstinence following outpatient substance-use disorder treatment. J Stud Alcohol Drugs 2008;69(5):747-56.

Measure #23. Program of All-Inclusive Care for the Elderly (PACE)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		■	
Interpersonal communication			
Information transfer		■	
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals		■	
Create a proactive plan of care		■	
Monitor, follow up, and respond to change		□	
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Program of All-Inclusive Care for the Elderly (PACE)

Purpose: To develop an instrument that will assess interdisciplinary team performance in a nursing home facility.

Format/Data Source: Self-administered, mailed surveys in several languages were implemented along with telephone support for survey-related questions. Responses were based on a 5-point Likert scale for all items in Section 1.

Date: Measure published in 2009.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
        - *Within teams of health care professionals:* 1A7, 1A10, 1C8
        - *Across health care teams or settings:* 1C7
    - Information transfer:
        - *Within teams of health care professionals:* 1B12
        - *Across health care teams or settings:*1B13
        - *Participants not specified:* 1B15, 1C2
- **Assess needs and goals:** 1C8, 1D1, 1D5
- **Create a proactive plan of care:** 1A10, 1B10, 1C6, 1C8
- **Monitor, follow up, and respond to change:** 1C2
- **Teamwork focused on coordination:** 1C4, 1D7

Development and Testing: Instrument items were adapted from a previously validated PACE instrument, which was pilot tested via 3 approaches: (1) questions were reviewed by an education specialist and a specialist in English-as-a-second-language to confirm appropriateness; (2) an expert panel provided feedback, and (3) the instrument was pilot tested among 84 aides in either a PACE program or a nursing home. All domains demonstrate reliability, and regression analyses determined sufficient construct validity. Cronbach's alpha coefficients supported internal consistency reliability. Face validity was supported by the previous testing of the instrument, and content validity was determined by examining the relevance of the survey questions.[1,2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: PACE stems from an adaptation of the model developed by Shortell and Rousseau to assess nurse-physician collaborative relationships within intensive care settings.[2]

Past or Validated Applications:
- **Setting:** Nursing home or residential facility in the United States
- **Population:** Elderly patients
- **Level of evaluation:** System

Notes:
- Instrument was provided by the corresponding author upon request (H. Temkin-Greener, personal communication, September 1, 2010).
- This instrument contains 86 items. Only Section 1 was mapped, which contains 46 items; 14 of which were mapped.

Sources:

1. Temkin-Greener H, Zheng N, Katz P, et al. Measuring work environment and performance in nursing homes. Med Care 2009;47(4):482-91.
2. Temkin-Greener H, Gross D, Kunitz SJ, et al. Measuring interdisciplinary team performance in a long-term care setting. Med Care 2004;42(5):472-81.
3. Temkin-Greener H, Cai S, Katz P, et al. Daily practice teams in nursing homes: Evidence from New York State. Gerontologist 2009;49(1):68-80.

Measure #24. Measure of Processes of Care (MPOC-28)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
Interpersonal communication			
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change	□		
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	□		
Support self-management goals	■		
Link to community resources	□		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	■		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Measure of Processes of Care (MPOC-28)

Purpose: To evaluate the quality of care during the habilitation process specific to children and adolescents.

Format/Data Source: Measurement of Processes of Care (MPOC) modified to MPOC-28 in a written survey (questionnaire). The 28-item questionnaire addresses the same 5 areas as the MPOC-20: (1) enabling and partnership, (2) general information, (3) specific information, (4) coordinated care and comprehensive care, and (5) respectful and supportive care. Habilitation is here described as, "a multifaceted service in which contributions are based on learning and experience from different areas, woven together in a complex network. Habilitation services are aimed at children with disabilities themselves, their families and at the network of people around the children. A fundamental factor in family-centered habilitation is that the interests of the child and family should guide the process both in assessing needs and in planning and carrying out the programme."[1]

Date: Measure published in 2002.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
    - *Between health care professional(s) and patient/family:* 18, 19, 24
    - *Across health care teams or settings:* 28
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 6, 8, 9, 20
- **Facilitate transitions:**
  - As coordination needs change: 26
- **Assess needs and goals:** 2-4, 6, 19
- **Create a proactive plan of care:** 10, 22
- **Monitor, follow up, and respond to change:** 5, 26
- **Support self-management goals:** 12-15, 27
- **Link to community resources:** 11, 15
- **Teamwork focused on coordination:** 22, 25, 28

Development and Testing: This instrument was developed and tested in a previous article in reference to a longer version of the instrument, MPOC-56. Construct validity and significance were demonstrated and questions were grouped via five factors: (1) enabling and partnership, (2) general information, (3) specific information, (4) coordinated and comprehensive care, and (5) respectful and supportive care. Differences were compared, applied, and addressed concerning scales between MPOCs. Test-retest reliability with Cronbach's alpha coefficients, intra-class correlation coefficients, and construct validation were all successfully demonstrated. Internal consistency was confirmed in pilot testing and beyond, while validity was supported by factor analysis.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Primary care settings in Sweden
- **Population:** Children with disabilities
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in Appendix 1 of the source article.[1]
- This instrument contains 28 items; 22 were mapped.
- 2 other versions are available: (1) MPOC-56 and (2) MPOC-20.[3] Testing information on the MPOC-56 is also provided by King.[2]

Sources:

1. Granat T, Lagander B, Borjesson MC. Parental participation in the habilitation process: Evaluation from a user perspective. Child Care Health Dev 2002;28(6):459-67.
2. King SM, Rosenbaum PL, King GA. Parents' perceptions of care giving: development and validation of a measure of processes. Dev Med Child Neurol 1996;38:757-72.
3. McMaster University Measure of Processes of Care (MPOC) Web site. Available at: http://www.canchild.ca/en/measures/mpoc56_mpoc20.asp. Accessed: 20 September 2010.

Measure #25. Care Evaluation Scale for End-of-Life Care (CES)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Care Evaluation Scale for End-of-Life Care (CES)

Purpose: To develop an instrument that measures the perceptions of palliative and/or end-of-life care from the perspective of the bereaved family.

Format/Data Source: 28-item questionnaire mailed to bereaved families who had a patient in palliative, end-of-life care. 10 subscales cover: (1) physical care by physicians, (2) physical care by nurses, (3) psycho-existential care, (4) help with decisionmaking for patients, (5) help with decisionmaking for family, (6) environment, (7) family burden, (8) cost, (9) availability, and (10) coordination and consistency. Responses were structured on a 6-point Likert scale.

Date: Measure was published in 2004.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
    - *Between health care professional(s) and patient/family:*10, 11, 13-15
- **Assess needs and goals:** 9, 12, 28
- **Monitor, follow up, and respond to change:** 28
- **Support self-management goals:** 12
- **Teamwork focused on coordination:** 26, 27

Development and Testing: The CES instrument, originally 67 items, was pilot tested and revised to 28 items. Questions were developed from the Sat-Fam-IPC scale and revised after pilot testing and after receipt of written survey comments. Instrument originally in Japanese and translated through a double back-translation to English. It successfully measures aspects of palliative care and areas for improvement through demonstration of a valid Cronbach's alpha coefficient of 0.98 and an intra-class correlation coefficient in the test-retest examination of 0.57. Confirmatory factor analysis was examined and supported construct validity. Convergent and discriminant validity were calculated through correlation coefficients between the CES subscale scores and the perceived experience, yielding satisfactory results. Pearson's correlation coefficients between subscale scores established social desirability of the CES.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** End-of-life palliative care in Japan (70 certified facilities)
- **Population:** Families of patients with palliative or end-of-life care
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in the Appendix of the source article.[1]
- This instrument contains 28 items; 12 were mapped.

Source:

1. Morita T, Hirai K, Sakaguchi Y, et al. Measuring the quality of structure and process in end-of-life care from the bereaved family perspective. J Pain Symptom Manage 2004;27(6):492-501.

Measure #26. Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
Interpersonal communication			
Information transfer	□		
Facilitate transitions			
Across settings	□		
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Oncology Patients’ Perceptions of the Quality of Nursing Care Scale (OPPQNCS)

Purpose: To develop and test the Oncology Patients’ Perceptions of the Quality of Nursing Care Scale (OPPQNCS).

Format/Data Source: 112 initial items within 8 subscales were developed with 59 items achieving content validity from an expert panel review and 41 items comprising the long version. The 8 subscales included: (1) professional knowledge (8 items), (2) continuity (1 item), (3) attentiveness (10 items), (4) coordination (9 items), (5) partnership (8 items), (6) individualization (9 items), (7) rapport (3 items), and (8) caring (11 items). Response provided on 4 – 6 point Likert scales.

Date: Measure published in 2003.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 36, 40
- **Communicate:**
        - *Between health care professional(s) and patient/family:* 5, 25, 40
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 34
- **Facilitate transitions:**
    - Across settings: 38
- **Assess needs and goals:** 17, 26, 33, 35
- **Monitor, follow up, and respond to change:** 14
- **Support self-management goals:** 11, 34

Development and Testing: Content validity achieved through an expert panel review. Construct validity examined using exploratory factor analysis, and internal consistency reliability determined using Cronbach’s alpha coefficient. All 41 items of the long version were analyzed using PCA and promax rotation, and 40 items met all criteria. Internal consistency reliability and convergent validity were assessed for each scale. Cronbach’s alpha coefficients ranged from 0.82 – 0.97. Pearson product-moment correlation coefficients demonstrate strong, positive correlations as well.[2] Further testing information is available.[1]

Link to Outcomes or Health System Characteristics: One study concludes that patients who receive greater patient-centered nursing interventions are far more likely to exhibit desired health outcomes, which contribute to quality of life.[3]

Logic Model/Conceptual Framework: The Quality Health Outcomes Model (QHOM) framed the development of several studies surrounding interventions and outcomes linked to the OPPQNCS.[3]

Past or Validated Applications:

- **Setting:** Oncology (inpatient) departments in the United States
- **Population:** Patients with cancer
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located online.[4]
- This instrument contains 41 items; 13 were mapped.
- An OPPQNCS short version (18-items) is also available online.[4]

Sources:

1. Radwin LE, Alster K, Rubin KM. Development and testing of the oncology patients' perceptions of the quality of nursing care scale. Oncol Nurs Forum 2003;30(2):283-90.
2. Suhonen R, Schmidt LA, Radwin LE. Measuring individualized nursing care: Assessment of reliability and validity of three scales. J Adv Nurs 2007;59(1):77-85.
3. Radwin LE, Cabral HJ, Wilkes G. Relationships between patient-centered cancer nursing interventions and desired health outcomes in the context of the health care system. Res Nurs Health 2009;32:4-17.
4. Massachusetts General Hospital Patient Care Services Web site. Available at: http://www2.massgeneral.org/pcs/the_institute_for_patient_care/ym/Tools/OPPQNCS.asp. Accessed: 16 September 2010.

Measure #27. Care Coordination Services in Pediatric Practices

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer		□	
Facilitate transitions			
Across settings		□	
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources		□	
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management		■	
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Care Coordination Services in Pediatric Practices

Purpose: To assess the frequency at which pediatricians implement care coordination services in the treatment of children with special health care needs.

Format/Data Source: 8-item, self-administered, mailed survey adapted from the 1998 Medical Home Best Practices Survey developed by the Institute for Child Health Policy. Care coordination services inquired about within the survey included: (1) integrating a child's medical care plans with the care plans developed by other providers or organizations, (2) discussing a family's potential needs for non-medical services, (3) scheduling extra time for an office visit when seeing a child with special needs, (4) contacting the school about a child's health and education needs as part of care coordination, (5) meeting with the hospital discharge planning team to assist in a child's transition to the community, and (6) scheduling time with the family to discuss the results of a visit to a specialist.

Date: Measure published in 2004.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 6
- **Facilitate transitions:**
  - Across settings: 5, 7
- **Assess needs and goals:** 3, 8
- **Create a proactive plan of care:** 4
- **Link to community resources:** 3, 8
- **Teamwork focused on coordination:** 2, 3
- **Care management:** 2-5, 7

Development and Testing: This survey, adapted from the 1998 Medical Home Best Practices Survey developed by the Institute for Child Health Policy, was pilot tested prior to use.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Pediatric hospital or clinic settings
- **Population:** Children with special health care needs
- **Level of evaluation:** Health Care Professional(s)

Notes:

- Instrument items located in Table 1 of the source article.[1]
- This instrument contains 8 items; 7 were mapped.

Source:

1. Gupta VB, O'Connor KG, Quezada-Gomez C. Care coordination services in pediatric practices. Pediatrics 2004;113(5):1517-21.

Measure #28. Collaboration and Satisfaction About Care Decisions (CSACD)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication		□	
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		■	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Collaboration and Satisfaction About Care Decisions (CSACD)

Purpose: To validate an instrument developed from an earlier Decision About Transfer (DAT) instrument that measures collaboration and satisfaction about decisionmaking in patient care.

Format/Data Source: 9-item questionnaire administered to health care professionals (physicians and nurses) while they actively provide care. Using a 7-point Likert scale the instrument addresses the degree of collaboration between physicians and nurses during the decisionmaking process.

Date: Measure published in 1994.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Communicate:**
  - Interpersonal communication:
    - *Within teams of health care professionals:* 2
- **Teamwork focused on coordination:** 1-7

Development and Testing: The previously-constructed Decision About Transfer (DAT) instrument conferred criterion-related validity, but reliability could not be calculated for a single question, sparking development of the Collaboration and Satisfaction About Care Decisions (CSACD). The CSACD was developed to contain 7 questions addressing collaboration, 6 critical questions and 1 global. Content validity for collaboration questions of this instrument was supported by a prior literature review,[2] nurse and physician experts, and potential subjects. After expert review, the instrument was pilot tested via mailed surveys with focus on transfer decisions. Criterion-related validity and construct validity were supported. Internal consistency of the 6 critical-attribute collaboration items was supported with a Cronbach's alpha coefficient of 0.93.[1]

Link to Outcomes or Health System Characteristics: Questionnaire responses correlate to patient outcomes concerning length of stay, mortality and morbidity as well as provider outcomes regarding job satisfaction and retention of ICU nurses.[1]

Logic Model/Conceptual Framework: A previously-developed conceptual of collaboration.[2]

Past or Validated Applications:
- **Setting:** Intensive care units in the United States
- **Population:** Health care professional(s) (ICU physicians and nurses). The CSACD was developed to study ICU transfer decisions and outcomes in an ICU, but it could be used in non-ICU settings or to refer to other patient care decisions as well.[1]
- **Level of evaluation:** Health Care Professional(s)

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in Table 1 of the source article were consecutively numbered.[1]
- This instrument contains 9 items; 7 were mapped.

Sources:

1. Baggs JG. Development of an instrument to measure collaboration and satisfaction about care decisions. J Adv Nurs 1994;20: 176-82.
2. Thomas K. Conflict and conflict management. In: MD Dunnette, ed. Handbook of industrial and organizational psychology. Chicago: Rand McNally College Publishing Company; 1976. p. 889-935.
3. Dougherty MB, Larson E. A review of instruments measuring nurse-physician collaboration. J Nurs Adm 2005;35(5):244-53.

Measure #29. Follow-Up Care Delivery

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
Interpersonal communication			
Information transfer	□		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	■		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Follow-Up Care Delivery

Purpose: To assess followup care delivery for cancer patients in association with physician specialty.

Format/Data Source: A 16-item, cross-sectional survey covering 4 domains: (1) physician communication, (2) care coordination, (3) nursing care, and (4) interactions with office staff.

Date: Measure published in 2009.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
        - *Between health care professional(s) and patient/family:* 1, 2, 4-6, 10
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 9
        - *Across health care teams or settings:* 11
- **Monitor, follow up, and respond to change:** 1-16
- **Support self-management goals:** 4, 9
- **Teamwork focused on coordination:** 12

Development and Testing: The survey was predominantly a compilation of items from previously validated instruments regarding patient experiences with care. All items underwent cognitive and pilot testing prior to implementation. Bivariate associations, chi-squared tests, and multivariable logistic regression models were performed to test associations of specialty with care coordination, nursing care, quality of care, and more.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Oncology practices in the United States
- **Population:** Colorectal cancer survivors
- **Level of evaluation:** Health Care Professional(s)

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in Appendix 1 of the source article were consecutively numbered.[1]
- This instrument contains 16 items; all 16 were mapped.

Source:

1. Haggstrom DA, Arora NK, Helft P, et al. Follow-up care delivery among colorectal cancer survivors most often seen by primary and subspecialty care physicians. J Gen Int Med 2009;24(2):472-79.

Measure #30. Family Satisfaction in the Intensive Care Unit (FS-ICU 24)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	■		
Interpersonal communication			
Information transfer	□		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Family Satisfaction in the Intensive Care Unit (FS-ICU 24)

Purpose: To discern areas for improvement from evaluation of family satisfaction in intensive care units.

Format/Data Source: The FS-ICU 24 questionnaire was administered upon explanatory conversation and consent to participate. Including demographics, 33 items spanned 3 domains: (1) overall satisfaction, (2) satisfaction with care, and (3) information/decisionmaking. Questions were answered via 5-point Likert scale and converted to numerical values on a scale of 0-100. Summary measures (range 0-100) were calculated for FS-ICU$_{total}$ summary score (higher scores imply greater satisfaction) and on 2 subscales: FS-ICU$_{care}$ and FS-ICU$_{dm}$ for information/ decisionmaking.

Date: Measure published in 2009.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
    - *Between health care professional(s) and patient/family:* 16, 21-25
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 26
- **Assess needs and goals:** 11, 12, 20
- **Teamwork focused on coordination:** 13

Development and Testing: An initial version of the questionnaire was tested in ICUs in Canada and was shown to be reliable (correlation coefficient = 0.85) and valid (both content and construct validity). It was able to discriminate between good and poor ratings of ICU quality.[2,3]

Link to Outcomes or Health System Characteristics: Little evidence is available addressing links between family satisfaction with quality of critical care for their loved ones and family outcomes, such as burden and stress.[4]

Logic Model/Conceptual Framework: Improved family outcome is based on a conceptual framework presented for palliative care.[4]

Past or Validated Applications:

- **Setting:** Intensive Care Units; used in German-speaking Switzerland and Canada; translations are available for use in other countries (see notes below).
- **Population:** ICU-patients’ next of kin
- **Level of evaluation:** Department (ICU)

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found online were consecutively numbered.[5] The last 3 items were free response and were not mapped.
- This instrument contains 24 items; 11 were mapped.
- For the most updated information, please refer to the Web site.[5]
- An alternate version, the original FS-ICU 34, is available online in Portuguese, French, Chinese, English, German, Hebrew, Spanish, and Swiss French. Further developmental information is available.[3]
- The FS-ICU 24 is also available online in French, English, German, Greek, Portuguese, Spanish, Swedish, and Swiss French.[3] Modifications of both forms are provided online for step-down units as well as a chronic respiratory ward.[3]

Sources:

1. Stricker KH, Kimberger O, Schmidlin K, et al. Family satisfaction in the intensive care unit: What makes the difference? Int Care Med 2009;35:2051-59
2. Kryworuchko J, Heyland DK. Using family satisfaction data to improve the processes of care in ICU. Int Care Med 2009;35:2015-7.
3. Heyland DK, Tranmer JE. Measuring family satisfaction with care in the intensive care unit: The development of a questionnaire and preliminary results. J Crit Care 2001;16(4):142-9.
4. Rothen HU, Stricker KH, Heyland DK. Family satisfaction with critical care: Measurements and messages. Curr Opin Crit Care 2010;16:1-9.
5. CARENET. Canadian Researchers at the End of Life Network. Family Satisfaction Survey Web site. Available at: http://www.thecarenet.ca/index.php?option=com_content&view=article&id=135&Itemid=91 Accessed: 16 September 2010.
6. Stricker KH, Niemann S, Bugnon S, et al. Family Satisfaction in the Intensive Care Unit: Cross-cultural adaptation of a questionnaire. J Crit Care 2007; 22:204-11.
7. Wall RJ, Engelberg RA, Downey L, et al. Refinement, scoring, and validation of the Family Satisfaction in the Intensive Care Unit (FS-ICU) survey. Crit Care Med 2007;35(1):271-79.

Measure #31. Korean Primary Care Assessment Tool (KPCAT)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	◻		
Interpersonal communication			
Information transfer	■		
Facilitate transitions			
Across settings	◻		
As coordination needs change			
Assess needs and goals	◻		
Create a proactive plan of care			
Monitor, follow up, and respond to change	◻		
Support self-management goals	◻		
Link to community resources	◻		
Align resources with patient and population needs	◻		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
◻ = 1-2 corresponding measure items

Korean Primary Care Assessment Tool (KPCAT)

Purpose: To develop and measure performance in Korean primary care practices.

Format/Data Source: 26-item instrument consisting of 4 multi-item scales and 1 composite scale with 21 items designed to measure performance within Korean primary care practices based upon 4 domains: (1) comprehensiveness, (2) coordination function, (3) personalized care, and (4) family/community orientation. Responses provided on a 5-point Likert scale.

Date: Measure published in 2009.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
        - *Between health care professional(s) and patient/family:* 15, 17
    - Information transfer:
        - *Between health care professional(s) and patient/family:*18, 21
        - *Across health care teams or settings:* 16
- **Facilitate transitions:**
    - Across settings: 15
- **Assess needs and goals:** 6, 21
- **Monitor, follow up, and respond to change:** 16
- **Support self-management goals:** 7, 9
- **Link to community resources:** 25
- **Align resources with patient and population needs:** 13

Development and Testing: The Korean Primary Care Assessment Tool (KPCAT) was pilot tested regarding content validity on 3 distinct groups of skilled experts in primary care. Three domains (comprehensiveness excluded) demonstrated sufficiently high reliability alpha coefficients. Each item-scale correlation surpassed required minimum values. Further validation was demonstrated in a recent study of 9 South Korean primary care clinics, forthcoming in the International Journal for Quality in Health Care (J.H. Lee, personal communication, September 12, 2010).

Link to Outcomes or Health System Characteristics: None described in source identified.

Logic Model/Conceptual Framework: This is an adaptation of the original PCAT measures, which were based on a framework described by Starfield, 1992. For further information on the framework and development of the PCAT, please see Measure #17.

Past or Validated Applications:

- **Setting:** Primary care in Korea
- **Population:** Primary care patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Table 2 of the source article were consecutively numbered.[1]
- This instrument contains 26 items; 10 were mapped.

Source:

1. Lee JH, Choi YJ, Sung NJ, et al. Development of the Korean primary care assessment tool: Measuring user experience: Tests of data quality and measurement performance. Int J Quality Health Care 2009;21(2):103-11.

Measure #32. Primary Care Multimorbidity Hassles for Veterans With Chronic Illnesses

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate	■		
Interpersonal communication			
Information transfer	■		
Facilitate transitions			
Across settings	□		
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Primary Care Multimorbidity Hassles for Veterans With Chronic Illnesses

Purpose: To evaluate primary care physicians as well as the health care system for veterans with chronic illnesses.

Format/Data Source: 16-item questionnaire that addresses 4 main attributes of primary care: (1) accumulated knowledge of the patient by the clinician, (2) coordination of care, (3) communication, and (4) preference for first contact with their primary care clinician. Responses were provided on a 4-point Likert scale. The items address health care hassles, defined as, "'troubles' or 'bothers' that patients experience during their encounters with the health care system."[1]

Date: Measure published in 2005.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 13
- **Communicate:**
    - *Within teams of health care professionals:* 15
    - *Across health care teams or settings:* 9, 10
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 1-3, 5, 7, 11, 13
- **Facilitate transitions:**
  - Across settings: 7
- **Assess needs and goals:** 2, 3
- **Monitor, follow up, and respond to change:** 13
- **Support self-management goals:** 5, 13
- **Medication management:** 3-6

Development and Testing: 16-item survey created through Dillman's Total Design Methodology. Original 26-item survey was pilot tested; items failing to improve item validity were removed. Several questions were added after a focus group session. Good internal consistency demonstrated (Cronbach's alpha coefficient of 0.94), and construct validity was determined with a principal component factor analysis (PCA) with a promax rotation. The previously validated Components of Primary Care Instrument (CPCI) was also included within the survey. Additional information was collected on demographic characteristics.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Primary care practices in the United States
- **Population:** Veterans with chronic illnesses
- **Level of evaluation:** Health Care Professional(s); System

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Table 3 of the source article were consecutively numbered.[1]
- This instrument contains 16 items; 12 were mapped.
- Further data analysis on a recent study in over 4,000 Veterans Administration primary care patients is forthcoming (M.L. Parchman, personal communication, September 10, 2010).

Source:

1. Parchman ML, Hitchcock, Noël P, et al. Primary care attributes, health care system hassles, and chronic illness. Med Care 2005;43(11):1123-29.

Measure #33. Primary Care Satisfaction Survey for Women (PCSSW)

CARE COORDINATION MEASURES MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources	□		
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Primary Care Satisfaction Survey for Women (PCSSW)

Purpose: To assess patient (female) satisfaction with primary care.

Format/Data Source: 29-item, self-administered or telephone-conducted survey, both before and after a primary care visit. Two categories were established: (1) items pertaining to a specific visit and (2) items pertaining to overall health care at the site during the past 12 months. Responses were based on a 5-point Likert scale (excellent-to-poor range) and summed for a total score.

Date: Measure published in 2004.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
    - *Between health care professional(s) and patient/family:* 11i, 11k
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 11h, 11j, 11o
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 12h, 12i
    - *Participants not specified:* 11m
- **Assess needs and goals:** 11o, 12d
- **Monitor, follow up, and respond to change:** 11e
- **Support self-management goals:** 12a, 12c
- **Link to community resources:** 12e

Development and Testing: A focus group determined women's expectations and preferences in primary care, which assisted in the formation of survey items. Additional cognitive testing led to item revision. Each scale within the PCCSW had high internal consistency reliability with Cronbach's alpha coefficient of 0.96. Convergent validity was supported by correlations with the MOS Visit Satisfaction Scale and CAHPS. Discriminant validity and predictive validity were demonstrated through regression analysis.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Primary care clinics in the United States
- **Population:** Females over 18 years of age
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in Table 2 of the source article.[1]
- This instrument contains 29 items; 13 were mapped.

Sources:

1. Scholle SH, Weisman CS, Anderson RT, et al. The development and validation of the Primary Care Satisfaction Survey for Women. Womens Health Issues 2004;14:35-50.
2. Scholle SH, Weisman CS, Anderson R, et al. Women's satisfaction with primary care: A new measurement effort from the PHS National Centers of Excellence in Women's Health. Womens Health Issues 2000;10(1):1-9.
3. Anderson, RT, Weisman CS, Camacho F, et al. Women's satisfaction with their on-going primary health care services: A consideration of visit-specific and period assessments. Health Serv Res 2007;42(2):663-81.

Measure #34. Personal Health Records (PHR)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			□
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			□
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			■

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Personal Health Records (PHR)

Purpose: To evaluate and discern areas for improvement in the patient-centeredness of personal health records (PHR).

Format/Data Source: The framework for evaluation (based on patient-centeredness) includes: (1) respect for patient values, preferences, and expressed needs; (2) information and education; (3) access to care; (4) emotional support to relieve fear and anxiety; (5) involvement of family and friends; (6) continuity and secure transition between health care providers; (7) physical comfort; and (8) coordination of care. For the purpose of this measure, personal health records (PHR) are defined as, "software applications that patients can use to communicate with their clinician, to enter their own health data, and to access information from their medical record and other sources."[1]

Date: Measure published in 2009.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
        - *Between health care professional(s) and patient/family:* 9, 10
    - Information transfer:
        - *Participants not specified:* 5
- **Support self-management goals:** 1, 5
- **Health IT-enabled coordination:** 1-10

Development and Testing: Literature reviews and personal communications initially identified areas to address within PHR. In-depth, semi-structured interviews were conducted in a variety of PHR settings to develop the10-item instrument discussing personal health records. Post-interview respondent validation demonstrated sufficient accuracy. When evidence was available for patient preferences, it was compared to existing PHR policies to propose a best practice model.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: Patient-centeredness was assessed against a framework of care defined within Format/Data Source. A patient-centered policy model was developed with the ideas of patient empowerment and full control of the personal health record.[1]

Past or Validated Applications:

- **Setting:** Institutions with personal health records in the United States
- **Population:** Patients with access to a personal health record
- **Level of evaluation:** System

Notes:

- All instrument items are located in Table 1 of the source article.[1]
- This instrument contains 10 items; all 10 were mapped.

Source:

1. Reti SR, Feldman HJ, Ross SE, et al. Improving personal health records for patient-centered care. JAMIA 2010;17:192-5.

Measure #35. Picker Patient Experience(PPE-15)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication	■		
Information transfer	□		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals	■		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Picker Patient Experience (PPE-15)

Purpose: To develop and test an instrument to measure inpatient care experiences from the patient perspective.

Format/Data Source: A 15-item survey implemented in 5 countries. Items are grouped into 8 dimensions on the basis of face validity: (1) information and education, (2) coordination of care, (3) physical comfort, (4) emotional support, (5) respect for patient preferences, (6) involvement of family and friends, (7) continuity and transition, and (8) overall impression.

Date: Measure published in 2002.[1]

Perspective: Patient/Family

Measure Item Mapping:
- **Communicate:**
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 1-4, 8, 11
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 12, 13
- **Assess needs and goals:** 4, 8
- **Support self-management goals:** 6, 9, 14, 15
- **Teamwork focused on coordination:** 3
- **Medication management:** 13, 14

Development and Testing: Items were developed from the Picker adult inpatient questionnaire, and were required to address 4 criteria: (1) patient applicability, (2) high correlation of items, (3) high internal consistency reliability levels, and (4) total item correlations exceeding the recommended 0.3 value. Development included expert consultation, a systematic literature review, organization of patient focus groups, and in-depth interviews to confirm salience in health care encounters. Evidence indicates that the Picker Patient Experience Questionnaire (PPE-15) has high levels of internal consistency reliability. Cronbach's alpha coefficient exceeded the recommended value of 0.7, and Spearman correlations (item-total correlations) were acceptable, except for 1 item, which fell below accepted values in Sweden and the United States.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:
- **Setting:** Inpatient (hospital) within 5 countries (Germany, Sweden, Switzerland, the United Kingdom, and the United States)
- **Population:** Acute care inpatients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in the Appendix of the source article.[1]
- This instrument contains 15 items; 12 were mapped.

Sources:

1. Jenkinson C, Coulter A, Bruster S. The Picker Patient Experience Questionnaire: Development and validation using data from in-patient surveys in five countries. Int J Qual Health Care 2002;14(5):353-58.
2. Cleary PD, Edgman-Levitan S, Walker JD, et al. Using patient reports to improve medical care: A preliminary report from 10 hospitals. Qual Manage Health Care 1993;2(1):31-8.

Measure #36. Physician Office Quality of Care Monitor (QCM)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication	□		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Physician Office Quality of Care Monitor (QCM)

Purpose: To accurately measure patient perceptions of care quality in the physician's office.

Format/Data Source: 56-item, mailed survey addressing 4 main dimensions of patient satisfaction: (1) evaluation of medical care in geographical areas, (2) beliefs about physician behavior, (3) reasons for postponing physician visits, and (4) attitudes toward the physician and medical care. The QCM identified 7 distinct scales of physician office care, which include: (1) Physician Care, (2) Nursing Care, (3) Front Office Services, (4) Accessibility, (5) Billing, (6) Testing Services, and (7) Facility Characteristics.

Date: Measure published in 1996.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 36
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 18, 21, 35
- **Monitor, follow up, and respond to change:** 30, 32
- **Support self-management goals:** 31
- **Teamwork focused on coordination:** 33
- **Medication management:** 30, 43

Development and Testing: After reviewing the literature and published questionnaires, items included in the Physician Office Quality of Care Monitor (QCM) were refined based on patient interviews as well as pilot testing via post-visit mailed surveys. The QCM demonstrated strong construct validity through a Promax oblique rotation, and factor analysis yielded sufficient predictive validity. Internal consistency of the scales supported reliability through Cronbach's alpha coefficients, which exceeded respective correlations and met the guidelines.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Primary care in the United States
- **Population:** Primary care patients
- **Level of evaluation:** System

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in the Appendix of the source article were consecutively numbered.[1]
- This instrument contains 53 forced-choice items; 9 were mapped.

Source:

1. Seibert JH, Strohmeyer JM, Carey RG. Evaluating the physician office visit: In pursuit of a valid and reliable measure of quality improvement efforts. J Ambul Care Manage 1996;19(1):17-37.

Measure #37. Patient Perceptions of Care (PPOC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	■		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings	□		
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change	■		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Patient Perceptions of Care (PPOC)

Purpose: To measure and determine Veterans Administration (VA) patients' perceptions of care in community-based outpatient clinics (CBOCs).

Format/Data Source: Mailed, self-administered, 40-item, cross-sectional survey addressing 8 multi-item scales: (1) access and timeliness of care, (2) patient education/information, (3) patient preferences, (4) emotional support, (5) coordination of care (overall), (6) coordination of care (visit), (7) courtesy, and (8) specialty provider access. The Picker-Commonwealth approach was used to measure of patient perceptions of care.

Date: Measure published in 2002.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 13, 14, 28-31, 34
- **Communicate:**
        - *Between health care professional(s) and patient/family:* 8, 9, 15, 16, 20, 30, 31
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* 18, 19, 27
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 10-12, 14, 30, 31, 39, 40
        - *Across health care teams or settings:* 26
        - *Participants not specified:* 24, 25
- **Facilitate transitions:**
    - Across settings: 33
- **Assess needs and goals:** 14, 15, 17,
- **Create a proactive plan of care:** 28
- **Monitor, follow up, and respond to change:** 26, 32, 33
- **Support self-management goals:** 17, 28
- **Medication management:** 11, 12

Development and Testing: This measure is based on components of the 1998 VA National Outpatient Customer Satisfaction Survey, conducted by the VA National Performance Data Resource Center.[1] Similar items have been used in the Veterans Satisfaction Survey.[2]

Link to Outcomes or Health System Characteristics: Delivery of care through VA Community-based Outpatient Clinics (CBOCs) was associated with small, but significant improvements in the number of reported problems with care, as measured through the PPOC, over delivery at VA medical centers, even when controlling for patient health status.[1] Two domains of patient-centered care measured in the PPOC—communication between patients and providers and continuity of care—were also associated with better compliance rates for 12 recommended preventive care services at VA facilities.[2]

Logic Model/Conceptual Framework: The measures of patient perceptions of care included in the PPOC are based on the Picker-Commonwealth approach.[1]

Past or Validated Applications:

- **Setting:** Veterans Affairs Health System in the United States
- **Population:** Veterans
- **Level of evaluation:** System

Notes:

- For simplification purposes, in order to properly reference specific items within this profile, all instrument items found in Appendix A of the source article were consecutively numbered.[1]
- This instrument contains 40 items; 26 were mapped.
- Both the 1998 VA National Outpatient Customer Satisfaction Survey, conducted by the VA National Performance Data Resource Center, and the 1999 Veterans Satisfaction Survey (VSS) contained nearly identical items addressing patient-centered care. Only the portions of the VA surveys that address patient-centered care, and which were reported in the sources listed in this profile, are described here as the Patient Perceptions of Care Survey.[1,2]

Sources:

1. Borowsky SJ, Nelson DB, Fortney JC, et al. VA Community-Based Outpatient Clinics: Performance measures based on patient perceptions of care. Med Care 2002;40(7):578-86.
2. Flach SD, McCoy KD, Vaughn TE, et al. Does patient-centered care improve provision of preventive services? J Gen Int Med 2004;19:1019-26.

Measure #38a. PREPARED Survey – Patient Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	□		
Interpersonal communication			
Information transfer	■		
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care	□		
Monitor, follow up, and respond to change			
Support self-management goals	■		
Link to community resources	■		
Align resources with patient and population needs	■		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

PREPARED Survey – Patient Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the patient perspective.

Format/Data Source: 49-item questionnaire covering 4 key domains: (1) information exchange (community services and equipment), (2) medication management, (3) preparation for coping after discharge, and (4) control of discharge circumstances.

Date: Measure released in 1998.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
        - *Between health care professional(s) and patient/family:* 2.4
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 2.1, 2.2, 2.5-2.7, 3.3
- **Facilitate transitions:**
    - Across settings: 3.1-3.3
- **Assess needs and goals:** 5.5
- **Create a proactive plan of care:** 2.3
- **Support self-management goals:** 2.7, 3.2, 3.3, 5.2, 6.2
- **Link to community resources:** 2.6, 3.1, 5.5
- **Align resources with patient and population needs:** 2.6, 3.1, 5.5
- **Medication management:** 2.1-2.3, 2.5

Development and Testing: Initial instrument developed based on extensive interviews with hospital staff, patients, and patient carers. The draft instrument was then reviewed by an expert panel of health professionals, a questionnaire layout designer, discharge planning staff, a health economist, and a qualitative researcher to further test for face and content validity. The instrument was then pilot tested, and factor analysis was conducted on patient and carer responses to the process questions. The validity of the instrument was established by comparing responses with interview data and by correlating the process and outcome domains. Divergent validity of the instrument was established by comparing responses to MOS SF-36, a measure of physical and mental health scores.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Acute care hospitals in Australia

- **Population:** Patients over the age of 65 who have recently been discharged from medical or surgical wards of acute care hospitals to an independent living arrangement.
- **Level of evaluation:** Hospital

Notes:

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.[1]
- This instrument contains 49 items; 13 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp. Accessed: 21 September 2010
2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. Int J Qual Health Care 2001;13(2):109-16.
3. Grimmer KA, Moss JR, Gill TK. Discharge planning quality from the carer perspective. Qual Life Res 2000;9:1005-13.

Measure #38b. PREPARED Survey – Carer Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication	□		
Information transfer	■		
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals	□		
Link to community resources	□		
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

PREPARED Survey – Carer Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the carer perspective.

Format/Data Source: 43-item questionnaire covering 4 key domains: (1) information exchange (community services and equipment), (2) medication management, (3) preparation for coping after discharge, and (4) control of discharge circumstances.

Date: Measure released in 1998.[1]

Perspective: Patient/Family

Measure Item Mapping:
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 3.3
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 2.1-2.5, 3.4
- **Facilitate transitions:**
  - Across settings: 3.1-3.3
- **Assess needs and goals:** 5.5
- **Support self-management goals:** 2.5, 3.2
- **Link to community resources:** 2.4, 3.1
- **Align resources with patient and population needs:** 2.4, 3.1
- **Medication management:** 2.1, 2.2

Development and Testing: Initial instrument developed based on extensive interviews with hospital staff, patients, and patient carers. The draft instrument was then reviewed by an expert panel of health professionals, a questionnaire layout designer, discharge planning staff, a health economist, and a qualitative researcher to further test for face and content validity. The instrument was then pilot tested, and factor analysis was conducted on patient and carer responses to the process questions. The validity of the instrument was established by comparing responses with interview data and by correlating the process and outcome domains. Divergent validity of the instrument was established by comparing responses to MOS SF-36, a measure of physical and mental health scores.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:
- **Setting:** Acute care hospitals in Australia
- **Population:** Patients over the age of 65 who have recently been discharged from medical or surgical wards of acute care hospitals to an independent living arrangement.
- **Level of evaluation:** Hospital

Notes:

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.[1]
- This instrument contains 43 items; 10 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp. Accessed: 21 September 2010.
2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. Int J Qual Health Care 2001;13(2):109-16.
3. Grimmer KA, Moss JR, Gill TK. Discharge planning quality from the carer perspective. Qual Life Res 2000;9:1005-13.

Measure #38c. PREPARED Survey – Residential Care Staff Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate			
Interpersonal communication			
Information transfer		■	
Facilitate transitions			
Across settings		□	
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

PREPARED Survey – Residential Care Staff Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the residential care staff perspective.

Format/Data Source: 14-item questionnaire.

Date: Measure released in 1998.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** 2
- **Communicate:**
  - Information transfer:
    - *Across health care teams or settings:* 1, 3, 4, 6
- **Facilitate transitions:**
  - Across settings: 7, 8
- **Medication management:** 4

Development and Testing: No testing described in sources identified. However, testing information is available for related measures.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:
- **Setting:** Acute care hospitals in Australia
- **Population:** Patients over the age of 65 who have recently been discharged from medical or surgical wards of acute care hospitals to an independent living arrangement.
- **Level of evaluation:** Hospital

Notes:
- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.[1]
- This instrument contains 14 items; 7 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp. Accessed: 21 September 2010

2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. Int J Qual Health Care 2001;13(2):109-16.

Measure #38d. PREPARED Survey – Community Service Provider Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate			
Interpersonal communication			
Information transfer		■	
Facilitate transitions			
Across settings		■	
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals		□	
Link to community resources			
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

PREPARED Survey – Community Service Provider Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the community service provider perspective.

Format/Data Source: 30-item questionnaire

Date: Measure released in 1998.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** 4a
- **Communicate:**
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 4b
    - *Across health care teams or settings:* 1, 6, 7a, 8c, 10, 12a
- **Facilitate transitions:**
  - Across settings: 2, 5a, 5b, 9, 15
- **Assess needs and goals:** 2, 9
- **Support self-management goals:** 16a
- **Align resources with patient and population needs:** 7c, 8b

Development and Testing: No testing described in sources identified. However, testing information is available for related measures.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:
- **Setting:** Acute care hospitals in Australia
- **Population:** Patients over the age of 65 who have recently been discharged from medical or surgical wards of acute care hospitals to an independent living arrangement.
- **Level of evaluation:** Hospital

Notes:
- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.[1]
- This instrument contains 30 items; 16 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp. Accessed: 21 September 2010
2. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. Int J Qual Health Care 2001;13(2):109-16.

Measure #38e. PREPARED Survey – Medical Practitioner Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		□	
Interpersonal communication			
Information transfer		■	
Facilitate transitions			
Across settings		□	
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals		□	
Link to community resources		□	
Align resources with patient and population needs		□	
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

PREPARED Survey – Medical Practitioner Version

Purpose: To gather information on the quality of process and outcomes of discharge planning activities undertaken in the acute hospital setting from the medical practitioner perspective.

Format/Data Source: 19-item questionnaire

Date: Measure released in 1998.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:
- **Establish accountability or negotiate responsibility:** 5
- **Communicate:**
        - *Across health care teams or settings:* 11
    - Information transfer:
        - *Across health care teams or settings:* 1-4, 6, 8-9
- **Facilitate transitions:**
    - Across settings: 7, 15
- **Assess needs and goals:** 7, 10
- **Create a proactive plan of care:** 15
- **Support self-management goals:** 15
- **Link to community resources:** 12
- **Align resources with patient and population needs:** 12
- **Medication management:** 11

Development and Testing: The measure was developed through a process that included a literature review, focus groups, and pilot surveys. A small group of general medical practitioners in Adelaide and Sydney were given the draft measure and asked to comment on layout, item wording, and question intent. Minor revisions were made based on the feedback received.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:
- **Setting:** Acute care hospitals in Australia
- **Population:** Patients over the age of 65 who have recently been discharged from medical or surgical wards of acute care hospitals to an independent living arrangement.
- **Level of evaluation:** Hospital

Notes:
- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and

(6) American Medical Practitioner Version. All of the Australian instruments can be found online.[1]

- This instrument contains 19 items; 13 were mapped.

Sources:

1. International Centre for Allied Health Evidence (iCAHE) Web site. Available at: http://www.unisa.edu.au/cahe/Resources/DCP/Information.asp. Accessed: 21 September 2010
2. Graumlich JF, Grimmer-Somers K, Aldag JC. Discharge planning scale: Community physicians' perspective. J Hosp Med 2008;3(6):455-64.
3. Grimmer K, Moss J. The development, validity and application of a new instrument to assess the quality of discharge planning activities from the community perspective. Int J Qual Health Care 2001;13(2):109-16.

Measure #38f. PREPARED Survey – Modified Medical Practitioner Version

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate		□	
Interpersonal communication			
Information transfer		■	
Facilitate transitions			
Across settings		□	
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care		□	
Monitor, follow up, and respond to change			
Support self-management goals		□	
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management		□	
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

PREPARED Survey – Modified Medical Practitioner Version

Purpose: To measure qualities of hospital discharge from the outpatient physician perspective.

Format/Data Source: 8-item questionnaire covering 2 key domains: (1) timeliness of communication and (2) adequacy of discharge plan/transmission.

Date: Measure published in 2008.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Communicate:**
        - *Across health care teams or settings:* 7
    - Information transfer:
        - *Across health care teams or settings:* 1-3, 5, 6
- **Facilitate transitions:**
    - Across settings: 4, 8
- **Assess needs and goals:** 4
- **Create a proactive plan of care:** 8
- **Support self-management goals:** 8
- **Medication management:** 6, 7

Development and Testing: Items were selected from the PREPARED Medical Practitioner survey. All items with nominal response categories that lacked graded or ordinal characteristics were excluded. Additionally, one item that had proven to have large proportions of missing responses because respondents checked "not applicable" in past studies was also excluded. Scale analysis was conducted on a total of 8 items after item reduction was completed. The 8-item scale proved to be internally consistent with a Cronbach's alpha of 0.86. Principal component analysis identified 2 components (timeliness of communication and adequacy of discharge plan/transmission). Construct validity of the measure was also verified.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Acute care hospitals in the United States
- **Population:** Adult inpatients who were discharged to home
- **Level of evaluation:** Hospital

Notes:

- All instrument items are located in Table 2 of the source article.[1]

- The PREPARED instrument is available in 6 versions: (1) Australian Patient Version, (2) Australian Carer Version, (3) Australian Residential Care Staff Version, (4) Australian Community Service Provider Version, (5) Australian Medical Practitioner Version, and (6) American Medical Practitioner Version. All of the Australian instruments can be found online.[2]
- This instrument contains 8 items; all 8 were mapped.

Source:

1. Graumlich JF, Grimmer-Somers K, Aldag JC. Discharge planning scale: Community physicians' perspective. J Hosp Med 2008; 3(6): 455-464.

Measure #39. Health Tracking Household Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication	□		
Information transfer	□		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Health Tracking Household Survey

Purpose: To assess whether continuity of care and referral source are associated with better coordination of care from the patient perspective.

Format/Data Source: 3-item telephone survey focusing on 3 major aspects of coordination: (1) whether the primary care physician is informed of care the patient received from an outside specialist, (2) whether the primary care physician discussed with the patient what happened at the most recent visit to the specialist, and (3) whether different doctors caring for a patient's chronic condition work well together to coordinate that care.

Date: Measure administered nationally in 2007.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* 2
    - Information transfer:
        - *Across health care teams or settings:* 1
- **Monitor, follow up, and respond to change:** 1,2
- **Teamwork focused on coordination:** 3

Development and Testing: Coordination measures were adapted from validated surveys and underwent cognitive interview testing to ensure that respondents understood and felt capable of answering the items.[1]

Link to Outcomes or Health System Characteristics: Higher ratings of care coordination were associated with (1) continuity of visits with the same primary care physician and (2) primary care physician as the referral source.[1]

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Primary and specialty care
- **Population:** Adult patients with a usual primary care physician and a visit to a physician specialist in the previous 12 months
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in Figure 1 of the source article.[1]
- This instrument contains 3 items; all 3 were mapped.
- This instrument was developed by The Center for Studying Health System Change (HSC). Information on the broader 2007 survey can be found online.[2]

Sources:

1. O'Malley AS, Cunningham PJ. Patient experiences with coordination of care: the benefit of continuity and primary care physician as referral source. J Gen Int Med 2008;24(2):170-77.
2. Health System Change (HSC) Web Site. Available at: http://www.hschange.org/CONTENT/1091/. Accessed: 20 September 2010.

Measure #40. Adapted Picker Institute Cancer Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate			
Interpersonal communication	□		
Information transfer	■		
Facilitate transitions			
Across settings	■		
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care	■		
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination	□		
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Adapted Picker Institute Cancer Survey

Purpose: To assess patients' experiences with cancer care, health-related quality of life, comorbid illnesses, and sociodemographic characteristics.

Format/Data Source: 34-item telephone interview covering 7 different question domains: (1) coordination of care, (2) confidence in providers, (3) treatment information, (4) health information, (5) access to cancer care, (6) psychosocial care, and (7) symptom control.

Date: Measure published in 2005.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1,5
- **Communicate:**
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 9,13
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 1,6,7,14-23
    - *Across health care teams or settings:* 2-4
- **Facilitate transitions:**
  - Across settings: 16, 24-26
- **Assess needs and goals:** 13,15
- **Create a proactive plan of care:** 7,28,29
- **Monitor, follow up, and respond to change:** 3
- **Support self-management goals:** 23
- **Teamwork focused on coordination:** 8

Development and Testing: Questions were obtained from a survey designed by the Picker Institute and were adapted for a telephone interview. The instrument was pilot tested on a sample of 50 patients. Principal factor analysis was conducted to group questions into 6 different domains of care. All domains had moderate to high internal consistency (Cronbach's alpha ranged from 0.55 to 0.82).[1]

Link to Outcomes or Health System Characteristics: Worse physical, functional, and disease-specific well-being as measured by the Trials Outcomes Index were found to be associated with higher adjusted problem scores for coordination of care, confidence in providers, and health information.[1]

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** United States

- **Population:** Adult colorectal cancer patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in the Appendix of the source article were consecutively numbered.[1]
- This instrument contains 34 items; 25 were mapped.

Source:

1. Ayanian JZ, Zaslavsky AM, Guadagnoli E, et al. Patients’ perceptions of quality of care for colorectal cancer by race, ethnicity, and language. J Clin Oncol 2005;23(27):6576-86.

Measure #41. Ambulatory Care Experiences Survey (ACES)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	■		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals	□		
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Ambulatory Care Experiences Survey (ACES)

Purpose: To measure patient experiences with individual primary care physicians and their practices.

Format/Data Source: 34-item survey that covers two broad domains: (1) quality of physician-patient interactions and (2) organizational features of care.

Date: Measure developed in 2002.[1]

Perspective: Patient/Family

Measure Item Mapping:
- **Communicate:**
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 6, 7, 10, 19
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 9, 11, 15, 22
    - *Across health care teams or settings:* 21
    - *Participants not specified:* 12, 20, 26
- **Assess needs and goals:** 13, 14, 16
- **Monitor, follow up, and respond to change:** 22
- **Support self-management goals:** 11, 17

Development and Testing: ACES demonstrated high internal consistency reliability with a Cronbach's alpha >0.70. Physician-level reliability was also established with a sample size of 45 patients per physician.[2]

Link to Outcomes or Health System Characteristics: ACES has been used in several published studies that report its associations with important outcomes of care and organizational factors. A list of these publications may be found online.[1]

Logic Model/Conceptual Framework: The Institute of Medicine definition of primary care was utilized as the measure's underlying conceptual model for measurement.[2]

Past or Validated Applications:
- **Setting:** Primary care practices in the United States
- **Population:** Adult patients from commercial health plans and Medicaid
- **Level of evaluation:** Health Care Professional(s); Practice

Notes:
- Instrument was provided by the authors upon request (A. Li, personal communication, September 9, 2010). The 2005 version was mapped for this profile.

- This instrument contains 34 items; 16 were mapped.
- The ACES survey is administered in Massachusetts every two years and annually in California as part of the California Cooperative Healthcare Reporting Initiative.

Sources:

1. Tufts Medical Center: Institute for Clinical Research and Health Policy Studies Web site. Available at: http://160.109.101.132/icrhps/resprog/thi/aces_publist.asp Accessed: 21 September 2010.
2. Safran DG, Karp M, Coltin K, et al. Measuring patients' experiences with individual primary care physicians. J Gen Int Med 2006;21(1):13-21.

Measure #42. Patient Perception of Continuity Instrument (PC)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	□		
Communicate			
Interpersonal communication	■		
Information transfer	□		
Facilitate transitions			
Across settings	□		
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	□		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Patient Perception of Continuity Instrument (PC)

Purpose: To measure longitudinal care using patient perceptions.

Format/Data Source: Mailed questionnaire consisting of 23 statements describing various aspects of an ongoing patient-physician longitudinal relationship. Questions cover two main factors: (1) structure of health care delivery (11 items) and (2) interpersonal relationship between physician and patients (12 items).

Date: Measure published in 1988.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 2H, 2K
- **Communicate:**
  - Interpersonal communication:
    - *Between health care professional(s) and patient/family:* 2B, 2C, 2E, 2G
  - Information transfer:
    - *Across health care teams or settings:* 1B, 1G
- **Facilitate transitions:**
  - Across settings: 2J, 2M
- **Assess needs and goals:** 1H
- **Medication management:** 1D

Development and Testing: Face validity of the 23 statements included in the questionnaire was established by a comprehensive review conducted by a group of board-certified family physicians. The Cronbach's alpha was calculated at 0.86, indicating a high degree of internal consistency. A principal component factor analysis was conducted and revealed two main factors (structure of health care delivery and interpersonal relationship between physician and patients).[1,2]

Link to Outcomes or Health System Characteristics: There was no correlation between the PC measure and the calculated Usual Provider Continuity (UPC) and Continuity of Care (COC) values, two commonly used quantitative definitions of provider continuity. Patient perception of continuity, as measured by the PC instrument, was strongly and significantly associated with patient satisfaction, but was not associated with costs.[1]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Private group family practices in the United States
- **Population:** Private group family practice adult patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located online.[2]
- This instrument contains 23 items; 12 were mapped.

Sources:

1. Chao J. Continuity of care: Incorporating patient perceptions. Fam Med 1988;20:333-337.
2. Toolkit of Instruments to Measure End-of-Life Care (TIME) Web site. Available at: http://www.chcr.brown.edu/pcoc/CONTIN.HTM#Chao%20scale. Accessed: 13 September 2010.

Measure #43. Jefferson Survey of Attitudes Toward Physician-Nurse Collaboration

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		■	
Communicate		□	
Interpersonal communication		□	
Information transfer			
Facilitate transitions			
Across settings		□	
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Jefferson Survey of Attitudes Toward Physician-Nurse Collaboration

Purpose: To evaluate the effectiveness of programs developed to foster physician-nurse collaboration and to study group differences on attitudes toward inter-personal collaboration.

Format/Data Source: 15-item survey that addresses 5 areas of physician-nurse interaction: (1) authority, (2) autonomy, (3) responsibility for patient monitoring, (4) collaborative decisionmaking, and (5) role expectations.

Date: Measure published in 1999.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 4, 13-15
- **Communicate:**
        - *Within teams of health care professionals:* 6
    - Interpersonal communication:
        - *Within teams of health care professionals:* 11
- **Facilitate transitions:**
    - Across settings: 6
- **Assess needs and goals:** 8
- **Teamwork focused on coordination:** 1

Development and Testing: Survey items were first developed based on a review of the literature. Construct validity of survey established by the consistency of the extracted factor structure of the survey. The alpha reliability estimates of the scale for medical and nursing students were 0.84 and 0.85.[1] Reliability coefficients were also high when testing was conducted in different countries (0.70 for nurses in Israel and Italy and 0.86 for physicians Mexico).[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** United States, Israel, Italy, Mexico
- **Population:** Nursing and medical students
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items located in Table 1 of the source article.[1]
- This instrument contains 15 items; 9 were mapped.
- This instrument is a modified version of the original Jefferson Survey of Attitudes Toward Physician-Nurse Collaboration.[3]

Sources:

1. Hojat M, Fields SK, Veloski J, et al. Psychometric properties of an attitude scale measuring physician-nurse collaboration. Eval Health Prof 1999;22:208-20.
2. Hojat M, Gonnella JS, Nasca TJ, et al. Comparisons of American, Israeli, Italian, and Mexican physicians and nurses on the total and factor scores of the Jefferson Scale of Attitudes toward Physician-Nurse Collaborative Relationships. Philadelphia: Thomas Jefferson University, Center for Research in Medical Education and Health Care; 2002. CRMEHC Faculty Papers.
3. Hojat M, Herman MW. Developing an instrument to measure attitudes toward nurses: Preliminary psychometric findings. Psychol Rep 1985;56:571-79.
4. Ward J, Schaal M, Sullivan J, et al. The Jefferson Scale of Attitudes toward Physician-Nurse Collaboration: A study with undergraduate nursing students. J Interprof Care 2008;22(4):375-86.

Measure #44. Clinical Microsystem Assessment Tool (CMAT)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			■
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			□
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			□
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			□
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			□

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Clinical Microsystem Assessment Tool (CMAT)

Purpose: To allow an organization to compare its characteristics to those considered key to successful integration.

Format/Data Source: 10-item questionnaire covering the 10 success characteristics related to high performance: (1) leadership, (2) organizational support, (3) staff focus, (4) education and training, (5) interdependence, (6) patient focus, (7) community and market focus, (8) performance results, (9) process improvement, and (10) information and information technology.

Date: Measure developed in 2001.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
  - Information transfer:
    - *Between health care professional(s) and patient/family:* 10A
    - *Within teams of health care professionals:* 2, 10B
- **Assess needs and goals:** 6
- **Monitor, follow up, and respond to change:** 9
- **Link to community resources:** 7
- **Teamwork focused on coordination:** 5
- **Health IT-enabled coordination:** 10C

Development and Testing: Developed through a systematic analysis of 20 high-performing clinical microsystems in North America. The 2006 version has been field tested and utilized in the Neonatal Intensive Care Unit (NICU) setting. (N. Huber, personal communication, September 11, 2010).

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The following definition of microsystems in health care was utilized: "A clinical microsystem is a small group of people who work together on a regular basis to provide care to discrete subpopulations of patients. It has clinical and business aims, linked processes, and a shared information environment, and it produces performance outcomes. Microsystems evolve over time and are often embedded in larger organizations. They are complex adaptive systems, and as such they must do the primary work associated with core aims, meet the needs of internal staff, and maintain themselves over time as clinical units."[1]The concept of the clinical microsystem is also being used by the Institute of Medicine's *Crossing the Quality Chasm Report*, The Institute for Healthcare Improvement's (IHI) Idealized Design of Clinical Office Practice program, and the IHI's Pursuing Perfection program.

Past or Validated Applications:

- **Setting:** Clinical microsystems in North America

- **Population:** Clinical microsystems
- **Level of evaluation:** System

Notes:

- All instrument items located online.[1,2]
- For those interested, the 2006 version of the CMAT includes additional leadership diagnostic survey questions and open ended questions for each of the 10 success characteristics.
- This instrument contains 12 items; 8 were mapped.

Sources:

1. Institute for Healthcare Improvement (IHI) Web site. Available at: http://www.ihi.org/IHI/Topics/Improvement/ImprovementMethods/Tools/ClinicalMicrosystemAssessmentTool.htm Accessed: 13 September 2010.
2. California Department of Healthcare Services Web site. Available at: http://www.dhcs.ca.gov/provgovpart/initiatives/nqi/Documents/MSAssessmentFinal.pdf Accessed: 13 September 2010.
3. Nelson EC, Batalden PB, Huber TP, et al. Microsystems in health care: Part 1. Learning form high-performing front-line clinical units. Jt Comm J Qual Improv 2002;28(9):472-93.
4. Armitage GD, Suter ES, Oelke ND, et al. Health systems integration: State of the evidence. Int J Integr Care 2009;19:1-11.

Measure #45. Components of Primary Care Index (CPCI)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals	□		
Create a proactive plan of care			
Monitor, follow up, and respond to change	□		
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	□		
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Components of Primary Care Index (CPCI)

Purpose: To measure the major components of primary care from the perspective of the patient.

Format/Data Source: 19-item survey to be completed by the patient immediately following a visit with a physician. The survey covers 7 components of primary care: (1) comprehensiveness of care, (2) accumulated knowledge, (3) interpersonal communication, (4) coordination of care, (5) first-contact care, (6) continuity of care, and (7) longitudinality.

Date: Measure published in 1997.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 1, 14, 19
- **Communicate:**
        - *Across health care teams or settings:* 11
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* 6, 5, 8
    - Information transfer:
        - *Between health care professional(s) and patient/family:* 7
        - *Across health care teams or settings:* 2, 10, 12
- **Assess needs and goals:** 4
- **Monitor, follow up, and respond to change:** 12, 13
- **Health care home:** 18

Development and Testing: A panel of experts consisting of practicing physicians, a health services researcher-biostatistician, a psychometrician-biostatiscian, a sociologist, and a nurse administrator evaluated the content validity of the instrument. Revisions to the survey items were based on the panel's discussion and comments. The instrument was pilot tested with a sample of 43 patients from 3 different sites. Factor analysis was conducted and demonstrated good internal consistency reliabilities of 4 factors. The Cronbach's alpha for each factor was: patient preferences for their regular physician (0.74), interpersonal communication (0.68), accumulated knowledge of patient (0.75), and coordination of care (0.79). The validity of the instrument was established by demonstrating that CPCI scale scores are associated with 3 satisfaction measures consistent with theoretically derived hypotheses about the primary care concepts measured.[1]

Link to Outcomes or Health System Characteristics: Adjusted linear regressions demonstrated that higher CPCI care coordination scale scores were highly associated with increased continuity of care as measured by the Continuity of Care Index (COC).[2] Higher CPCI scale scores for primary care communication and coordination of care were associated with lower patient hassle scores as measured by a 16-item health care systems hassles scale.[3] CPCI scale scores for interpersonal communication and coordination of care were shown to be significantly associated with the delivery of preventive screening services.[4] In a population of women veteran patients, CPCI scores were higher for coordination if their provider offered gynecologic services or enrolled patients in a women's clinic.[5]

Logic Model/Conceptual Framework: Survey questions were modeled based on the 1994 Institute of Medicine (IOM) definition of primary care as well as the core elements of the 1978 IOM components of access, continuity, coordination, interpersonal communication, and comprehensive care.

Past or Validated Applications:

- **Setting:** Primary care in the United States
- **Population:** Primary care clinic patients, Veterans Administration (VA) patients with multiple chronic illnesses,[3] female VA patients[5]
- **Level of evaluation:** Health Care Professional(s)

Notes:

- All instrument items are located in Table 2 of the source article.[1]
- This instrument contains 19 items; 14 were mapped.

Sources:

1. Flocke SA. Measuring attributes of primary care: Development of a new instrument. J Fam Pract 1997;45(1):64-75.
2. Christakis DA, Wright JA, Zimmerman FJ, et al. Continuity of care is associated with well-coordinated care. Ambul Pediatr 2003;3(2):82-86.
3. Parchman ML, Noel PH, Lee S. Primary care attributes, health care system hassles, and chronic illness. Med Care 2005;43(11):1123-8.
4. Flocke SA, Stange KC, Zyzanski SJ. The association of attributes of primary care with the delivery of clinical preventive services. Med Care 1998;36(8):AS21-30.
5. Bean-Mayberry BA, Change CH, McNeil MA, et al. Ensuring high-quality primary care for women: Predictors of success. Womens Health Issues 2006;16:22-9.

Measure #46. Relational Coordination Survey

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility		□	
Communicate		■	
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals		□	
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination		□	
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Relational Coordination Survey

Purpose: To determine the impact of relational coordination on quality of care by measuring dimensions of communication and relationships among health care providers and testing their impact on performance.

Format/Data Source: 7-item survey consisting of 4 communication dimensions (frequent, timely, accurate, problem solving) and 3 relationship dimensions (shared goals, shared knowledge, mutual respect).

Date: Measure published in 2000.[1]

Perspective: Health Care Professional(s)

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** 5, 6
- **Communicate:**
    - *Across health care teams or settings:* 1-3
- **Assess needs and goals:** 7
- **Teamwork focused on coordination:** 4, 7

Development and Testing: The Cronbach's alphas for the individual dimensions of relational coordination ranged from 0.717 to 0.840, and the overall index of relational coordination had a Cronbach's alpha of 0.849.[1]

Link to Outcomes or Health System Characteristics: Higher levels of relational coordination among care providers was significantly associated with improved quality of care (measured by a quality-of-care index developed from 25 questionnaire items from the Service Quality Questionnaire pertaining to the patient's acute-care experience). Postoperative freedom from pain associated with the overall index of relational coordination. Frequency of communication, shared goals, shared knowledge, and mutual respect were significantly associated with patient freedom from pain.[1]

Logic Model/Conceptual Framework: This instrument is based on the concept of relational coordination which is defined as, "coordination that is carried out by front-line workers with an awareness of their relationship to the overall work process and to other participants in that process."[2] Health care settings characterized by high levels of uncertainty, interdependence, and time constraints can utilize relational coordination to improve quality and efficiency of performance by improving the exchange of information relevant to the care of a given patient.

Past or Validated Applications:

- **Setting:** Orthopedic departments of U.S. hospitals
- **Population:** Health care professionals with clinical or administrative responsibilities for patients undergoing total joint arthroplasty
- **Level of evaluation:** Hospital

Notes:

- All instrument items are located online.[3]
- This instrument contains 7 items; all 7 were mapped.
- The Measure Item Mapping portion of the profile refers to the question items found in the Relational Coordination Survey for Patient Care. For those interested in either the Short Form Relational Coordination Survey for Nursing Homes or the Relational Coordination Survey for Patient Care, by Individual Patient, both can be found online.[2]

Sources:

1. Gittell JH, Fairfield KM, Bierbaum B, et al. Impact of relational coordination on quality of care, postoperative pain and functioning, and length of stay. Med Care 2000;38(8):807-19.
2. Gittell JH. Organizing work to support relational coordination. Int J Hum Resour Man 2000;11(3):517-39.
3. Relational Coordination Web site. Available at: http://www.jodyhoffergittell.info/content/rc.html. Accessed: 13 September 2010.

Measure #47. Fragmentation of Care Index (FCI)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			■*
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items
*The use of a filled square for this measure indicates that it is a composite measure

Fragmentation of Care Index (FCI)

Purpose: To determine whether referrals to specialists for outpatient screening for coexisting conditions were offset by the potentially deleterious effects of care fragmentation.

Format/Data Source: The FCI is calculated using an equation that utilizes data on: (1) the total number of visits, (2) the total number of clinics visited, and (3) the total number of visits to a specific clinic being examined. The FCI can range from 0 (all visits were made to the same clinic) to 1 (all visits took place at a different clinic).

Date: Measure published in 2010.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Health Care Home:** composite measure

Development and Testing: Development of the FCI was based on the previously validated Continuity of Care Index described by Bice and Boxerman.[2]

Link to Outcomes or Health System Characteristics: Univariate analysis revealed a significant association between the FCI and the number of emergency department (ED) visits. The number of ED visits increased as the FCI increased (incidence rate ratio of 1.18; 95% CI 1.12-1.25).[1]

Logic Model/Conceptual Framework: None described in the sources identified.

Past or Validated Applications:

- **Setting:** Primary care group practices within a large public urban provider (MetroHealth System, Ohio, US).
- **Population:** Adult patients with diabetes and chronic kidney disease
- **Level of evaluation:** Outpatient clinics

Notes:

- Formula located in the Methods section of the source article.[1]

Sources:

1. Liu CW, Einstadter D, Cebul RD. Care fragmentation and emergency department use among complex patients with diabetes. Am J Manage Care 2010;16(6):413-20.
2. Bice TW, Boxerman SB. A quantitative measure of continuity of care. Med Care 1977;15(4):347-9.

Measure #48. After-Death Bereaved Family Member Interview

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility	■		
Communicate	□		
Interpersonal communication	■		
Information transfer	■		
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management	■		
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

After-Death Bereaved Family Member Interview

Purpose: To assess the quality of end-of-life care from the perspective of the family of individuals who have died in a hospice, hospital, or nursing home setting.

Format/Data Source: Structured interview protocol consisting of 53 questions covering 7 different domains of care: (1) physical comfort and emotional support, (2) inform and promote shared decisionmaking, (3) encourage advanced care planning, (4) focus on individual, (5) attend to the emotional and spiritual needs of the family, (6) provide coordination of care, and (7) support the self-efficacy of the family.

Date: Measure released in 2000.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Establish accountability or negotiate responsibility:** C2, C2a, D6, D7
- **Communicate:**
        - *Between health care professional(s) and patient/family:* D15a, F1
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* C1, C1a, C1b
    - Information transfer:
        - *Between health care professional(s) and patient/family:* C1c, C1d, D26, D26a, D27, D27a, D28, D28a, E1
        - *Across health care teams or settings:* D18
- **Medication management:** D12, D12a, D15, D25, D28, D28a

Development and Testing: The instrument has been tested for all three settings (hospice, hospital, and nursing home) and it proved to be both reliable and valid.[1] Cronbach's alpha exceeded 0.70 for all domains with more than 4 items except for the Coordination of Care domain. For test-retest reliability, the Kappa and intra-class correlation statistics revealed evidence of stability of the reported responses.[2]

Link to Outcomes or Health System Characteristics: For each proposed score, bereaved family members of decedents who were under hospice care reported fewer problems, a higher rating of care, and improved self-efficacy.[2]

Logic Model/Conceptual Framework: The instrument is based on a conceptual model of patient focused, family-centered medical care. The model was developed based on results from a qualitative literature review of expert guidelines and from focus groups with bereaved family members across different settings of care.[2]

Past or Validated Applications:

- **Setting:** Hospice, hospital, or nursing home
- **Population:** Bereaved family members
- **Level of evaluation:** Hospice; Hospital; Nursing home

Notes:

- All instrument items are available online.[1]
- This instrument has 3 versions (hospice, hospital, and nursing home). All questions are nearly identical except for minor wording changes related to the setting. The hospice version has one additional question (D29b) not found in the other versions, and thus has a total of 54 questions.
- This instrument contains 53 items; 25 were mapped.

Sources:

1. Toolkit to measure end-of-life care (TIME): After-Death Bereaved Family Interview. Available at: http://www.chcr.brown.edu/pcoc/linkstoinstrumhtm.htm. Accessed: 7 October 2010.
2. Teno JM, Clarridge B, Case V, et al. Validation of toolkit After-Death Bereaved Family Member Interview. J Pain Symptom Manage 2001;22(3):752-8.
3. Toolkit of instruments to measure end-of-life care (TIME): After-Death Bereaved Family Member Interview. Providence, RI: Brown University; Copyright 1998-2004,

Measure #49. Schizophrenia Quality Indicators for Integrated Care

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer	□		□
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			□
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			□
Link to community resources			
Align resources with patient and population needs			□
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			□
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Schizophrenia Quality Indicators for Integrated Care

Purpose: To develop a set of quality indicators for schizophrenia care to be used for continuous quality monitoring.

Format/Data Source: 12 structural and 22 quality indicators from a variety of source data (administrative data, additional provider data, patient survey).

Date: Measure published in 2010.[1]

Perspective: System Representative(s); 1 item from Patient/Family perspective

Measure Item Mapping:

- **Communicate:**
    - Information transfer:
        - *Between health care professional(s) and patient/family:* Q18
        - *Across health care teams or settings:* S5
- **Facilitate transitions:**
    - Across settings: S5
- **Assess needs and goals:** Q12
- **Create a proactive plan of care:** Q15
- **Monitor, follow up, and respond to change:** Q4
- **Support self-management goals:** Q19
- **Align resources with patient and population needs:** S12
- **Care management:** Q13

Development and Testing: A systematic literature search was conducted to identify potentially relevant validated quality indicators. Two investigators independently selected all relevant quality indicators, and all were described based on the framework by Hermann and Palmer.[2] The final selection of indicators was conducted by a panel of stakeholders consisting of psychiatric experts, representatives of a service user, and a family advocacy organization. None of the selected indicators was validated in experimental studies, but evidence and validation base played only a subordinate role for indicator prioritization by stakeholders.[1]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: Hermann and Palmer framework used to describe identified indicators.[2]

Past or Validated Applications:

- **Setting:** German health care system
- **Population:** Patients with schizophrenia
- **Level of evaluation:** Varies by indicator

Notes:

- All instrument items are located in Tables 2 and 3 of the source article.[1]
- This instrument contains 34 items; 8 were mapped.

Sources:

1. Weinmann S, Roick C, Martin L, et al. Development of a set of schizophrenia quality indicators for integrated care. Epidemiol Psichiatr Soc 2010;19(1):52-62.
2. Hermann RC, Palmer H, Leff S, et al. Achieving consensus across diverse stakeholders on quality measures for mental health care. Med Care 2004;42:1246-53.

Measure #50. Degree of Clinical Integration Measures

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			■

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Degree of Clinical Integration Measures

Purpose: To measure functional integration, which is defined as the extent to which patient care services are coordinated across various functions, activities, and operating units of a system.

Format/Data Source: 17 measures used to assess 6 dimensions of clinical integration: (1) clinical protocol development, (2) medical records uniformity and accessibility, (3) clinical outcomes data collection and utilization, (4) clinical programming and planning efforts, (5) shared clinical support services, and (6) shared clinical services lines.

Date: Measures published in 1994.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
  - Information transfer:
    - *Across health care teams or settings:* 8,9
- **Facilitate transitions:**
  - Across settings: 16,17
- **Health IT-enabled coordination:** 3-7

Development and Testing: Measures were developed based on a literature review, interaction with the study research advisory group committee, and site visits.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: Builds on the work of models and frameworks of vertically integrated health systems.[1]

Past or Validated Applications:

- **Setting:** Health systems in the United States
- **Population:** 9 health systems that took part in the Health Systems Integration Study (HSIS)—Baylor Healthcare System, EHS health Care, Fairview Hospital and Health Care Services, Franciscan Health System, Henry Ford Health System, Sharp HealthCare, Sisters of Providence, Sutter Health, and UniHealth America
- **Level of evaluation:** System

Notes:

- The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Table 3 of the source article were consecutively numbered.[1]
- This instrument contains 17 items; 9 were mapped.

Source:

1. Devers KJ, Shortell SM, Gillies RR, et al. Implementing organized delivery systems: An integration scorecard. Health Care Manage Rev 1994;19(3):7-20.

Measure #51. National Survey for Children's Health (NSCH)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate	□		
Interpersonal communication	□		
Information transfer	□		
Facilitate transitions			
Across settings	□		
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs	□		
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home	■		
Care management	□		
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

National Survey for Children's Health (NSCH)

Purpose: To collect a broad range of information about children's health and well-being in order to allow for comparisons among States as well as nationally.

Format/Data Source: Telephone interview comprised of 11 sections: (1) initial demographics, (2) health and functional status, (3) health insurance coverage, (4) health care access and utilization, (5) medical home, (6) early childhood, (7) middle childhood and adolescence, (8) family functioning, (9) parental health, (10) neighborhood and community characteristics, and (11) additional demographics. The section most relevant to care coordination is Section 5 – Medical Home, which consists of 4 subdomains: (1) referrals; (2) care coordination; (3) provider communication; and (4) compassionate, culturally effective, family centered care.

Date: Measure administered nationally in 2003 and 2007.[1]

Perspective: Patient/Family

Measure Item Mapping:

- **Communicate:**
        - *Across health care teams or settings:* K5Q30, K5Q31, K5Q32
    - Interpersonal communication:
        - *Between health care professional(s) and patient/family:* K5Q41
    - Information transfer:
        - *Between health care professional(s) and patient/family:* K5Q43
- **Facilitate transitions:**
    - Across settings: K5Q10, K5Q11
- **Align resources with patient and population needs:** K5Q42**,** 8K5Q45, K5Q46
- **Health care home:** K5Q10, K5Q11, K5Q20-22, K5Q30-32, K5Q40-46
- **Care management:** K5Q20, K5Q22

Development and Testing: The survey's framework, intended goals, and content was designed by a National Expert Panel consisting of State and Federal policymakers, health services researchers, survey design experts, parents, and health care practitioners. A subset of this group formed the Technical Expert Panel that met multiple times to discuss the development and testing of specific questionnaire items. A majority of the questions included in the survey were taken directly from previously validated surveys including: the National Health Interview Survey (NHIS), the national Survey of Children with Special Health Care Needs, the Consumer Assessment of Health Plans Survey (CAHPS), the National Survey of America's Families, the Promoting Healthy Development Survey, and the Living With Illness Survey. All questionnaire items were also reviewed by outside experts and the user community prior to final inclusion. A pretest of the survey instrument was conducted with approximately 1000 interviews.[2]

Link to Outcomes or Health System Characteristics: The NSCH survey questions and data have been used in several published studies. A list of these publications may be found online.[1]

Logic Model/Conceptual Framework: The Medical Home Section of the survey was based largely on the American Academy of Pediatrics medical home model of primary pediatric care, which defines medical home care as accessible, continuous, comprehensive, family-centered, compassionate, culturally effective, and coordinated with specialized services.[2]

Past or Validated Applications:

- **Setting:** United States
- **Population:** Pediatric patients
- **Level of evaluation:** Health Care Professional(s)

Notes:

- The NSCH consists of 11 sections, but only the section relevant to care coordination (Section 5 – Medical Home) was mapped for this profile. The full-length NSCH as well as a Spanish version can be found online.[1]
- The Measure Item Mapping portion of the profile refers to the question items found in the 2007 version of the NSCH. For those interested in the 2003 version of the NSCH, it can be found online.[1]
- The mapped section of the measure contains 15 items; all 15 were mapped.
- The 2003 and 2007 national and State data are publicly available for download online.[1]

Sources:

1. National Survey of Children’s Health Web site. Available at: http://www.nschdata.org/content/Default.aspx. Accessed: 20 September 2010
2. Blumberg SJ, Foster EB, Frasier AM, et al. Design and operation of the National Survey of Children’s Health, 2007. Vital Health Stat 1. (forthcoming)
3. van Dyck P, Kogan MD, Heppel D, et al. The National Survey of Children’s Health: A new data resource. Matern Child Hlth J 2004;8(3):183-8.

Measure #52. Mental Health Professional HIV/AIDS Point Prevalence and Treatment Experiences Survey Part II

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			■
Information transfer			■
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			■
Align resources with patient and population needs			■
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			■
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Mental Health Professional HIV/AIDS Point Prevalence and Treatment Experiences Survey Part II

Purpose: To assess multiple aspects of system integration within the mental health facility, and system integration between mental health, primary care, and case management for the HIV-infected patient.

Format/Data Source: Mailed questionnaire with questions divided into 4 categories: (1) mental health system integration with primary care physicians, (2) mental health system integration with care coordination sites, (3) mental health system integration with other mental health centers, and (4) internal integration of HIV care into the mental health system itself.

Date: Measure published in 2001.[1]

Perspective: System Representative(s)

Measure Item Mapping:

- **Communicate:**
  - Interpersonal communication:
    - *Across health care teams or settings:* 2, 4, 5, 7, 8, 10
  - Information transfer:
    - *Across health care teams or settings:* 1, 6, 11
- **Create a proactive plan of care:** 3
- **Link to community resources:** 9, 10, 23, 27, 28
- **Align resources with patient and population needs:** 15-17, 24, 25, 29, 30
- **Teamwork focused on coordination:** 3, 12-14, 18-22, 26, 31-33

Development and Testing: Panel convened at the Indiana State Department of Health—composed of experts from the fields of medicine, public health, community mental health, medical sociology, and psychology—developed the survey instrument. Internal consistency reliability analysis was conducted. The Cronbach’s alpha coefficient results for each category were: specific indicators of mental health systems integration with primary care physicians (0.80), global assessment of mental health system integration with primary care physicians (0.75), specific indicators of mental health system integration with HIV care coordination sites (0.90), global assessment of mental health system integration with HIV care coordination sites (0.74), global assessment of mental health system integration with other mental health agencies (0.57), global assessment of mental health system integration of HIV care into the mental health system (0.61).[1]

Link to Outcomes or Health System Characteristics: System integration was not significantly associated with mental health service provider turnover rates.[1]

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications:

- **Setting:** Mental health centers in the United States
- **Population:** Individuals with HIV/AIDS
- **Level of evaluation:** Practice

Notes:

The original measure did not have individual items numbered. In order to properly reference specific items within this profile, all instrument items found in Tables 2 and 3 of the source article were consecutively numbered.[1] This instrument contains 34 items; 33 were mapped.

Source:

1. Lemmon R, Shuff M. Effects of mental health centre staff turnover on HIV/AIDS service delivery integration. AIDS Care 2001;13(5):651-61.

Measure #53. Cardiac Rehabilitation Patient Referral from an Inpatient Setting

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Cardiac Rehabilitation Patient Referral from an Inpatient Setting

Purpose: To measure the percentage of patients hospitalized with a primary diagnosis of an acute myocardial infarction (MI) or chronic stable angina (CSA), or who during hospitalization have undergone coronary artery bypass graft (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery, or cardiac transplantation who are referred to an early outpatient cardiac rehabilitation/secondary prevention (CR) program.[1]

Format/Data Source: This process measure requires administrative claims data and/or data collected from the medical record. Data from clinical registries may also be used, if available (e.g., National Cardiovascular Data Registry, ACTION-Get With the Guidelines Inpatient Registry).[1]

Date: Measure released in 2007[2] and updated in 2010.[1]

Perspective: System Representative(s).

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Communicate**
    - Information transfer
        - *Between health care professional(s) and patient/family*
        - *Across health care teams or settings*

Development and Testing: : The Cardiac Rehabilitation/Secondary Prevention Performance Measure Writing Committee reviewed a list of 39 elements from practice guidelines and evaluated their potential use as performance measures according to the ACC/AHA Task Force on Performance Measures guidelines. They selected those that were most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible for inclusion.[2] The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[3]

Link to Outcomes or Health System Characteristics: The measure is based on clinical guidelines with the highest level of evidence, including links to clinical outcomes.[2]

Logic Model/Conceptual Framework: The measure is based on clinical guidelines.[2]

Past or Validated Applications:

- **Setting:** Inpatient facility
- **Population:** All hospitalized patients with a primary diagnosis of an MI or CSA and patients who have undergone CABG surgery, PCI, cardiac valve surgery, or cardiac transplantation
- **Level of evaluation:** Healthcare professional(s), facility, or system

Notes:

- Detailed measure specifications are included in the AACVPR/AACF/AHA 2010 Update report.[1]
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. Thomas RJ, King M, Lui K, et al. AACVPR/ACC/AHA 2010 update: performance measures on cardiac rehabilitation for referral to cardiac rehabilitation/secondary prevention services: a report of the American Association of Cardiovascular and Pulmonary Rehabilitation and the American College of Cardiology Foundation/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Clinical Performance Measures for Cardiac Rehabilitation). J Am Coll Cardiol 2010;56:1159–67. Also published in Circulation 2010;122:1342-50. Also published in J Cardiopulm Rehabil 2010;30:279-88.
2. Thomas RJ, King M, Lui K, et al. AACVPR/AAC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Am Coll Cardiol 2007;50:1400-33. Also published in Circulation 2007;116:1611-42. Also published in J Cardiopulm Rehabil 2007;27:260-90.
3. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #54. Cardiac Rehabilitation Patient Referral from an Outpatient Setting

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Cardiac Rehabilitation Patient Referral from an Outpatient Setting

Purpose: To measure the percentage of patients evaluated in an outpatient setting who within the past 12 months have experienced an acute myocardial infarction (MI), coronary artery bypass graft (CABG) surgery, a percutaneous coronary intervention (PCI), cardiac valve surgery, or cardiac transplantation, or who have chronic stable angina (CSA) and have not already participated in an early outpatient cardiac rehabilitation/secondary prevention (CR) program for the qualifying event/diagnosis, who are referred to such a program.[1]

Format/Data Source: This process measure requires administrative claims data and/or data collected from the medical record. Data from clinical registries may also be used, if available (e.g., National Cardiovascular Data Registry, ACTION-Get With the Guidelines Inpatient Registry).[1]

Date: Measure released in 2007[2] and updated in 2010.[1]

Perspective: System Representative(s).

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Communicate**
  - Information transfer
    - *Between health care professional(s) and patient/family*
    - *Across health care teams or settings*
- **Monitor, follow-up, and respond to change**

Development and Testing: The Cardiac Rehabilitation/Secondary Prevention Performance Measure Writing Committee reviewed a list of 39 elements from practice guidelines and evaluated their potential use as performance measures according to the ACC/AHA Task Force on Performance Measures guidelines. They selected those that were most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible for inclusion.[2] The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[3]

Link to Outcomes or Health System Characteristics: The measure is based on clinical guidelines with the highest level of evidence, including links to clinical outcomes.[2]

Logic Model/Conceptual Framework: The measure is based on clinical guidelines.[2]

Past or Validated Applications:

- **Setting:** Outpatient facility
- **Population:** All patients who have experienced MI, CABG surgery, a PCI, cardiac valve surgery, or cardiac transplantation and patients with chronic CSA with the past 12 months
- **Level of evaluation:** Healthcare professional(s), facility, or system

Notes:

- Detailed measure specifications are included in the AACVPR/AACF/AHA 2010 Update report.[1]
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. Thomas RJ, King M, Lui K, et al. AACVPR/ACC/AHA 2010 update: performance measures on cardiac rehabilitation for referral to cardiac rehabilitation/secondary prevention services: a report of the American Association of Cardiovascular and Pulmonary Rehabilitation and the American College of Cardiology Foundation/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Clinical Performance Measures for Cardiac Rehabilitation). J Am Coll Cardiol 2010;56:1159–67. Also published in Circulation 2010;122:1342-50. Also published in J Cardiopulm Rehabil 2010;30:279-88.
2. Thomas RJ, King M, Lui K, et al. AACVPR/AAC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Am Coll Cardiol 2007;50:1400-33. Also published in Circulation 2007;116:1611-42. Also published in J Cardiopulm Rehabil 2007;27:260-90.
3. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #55. Patients with a Transient Ischemic Event ER Visit That Had a Follow Up Office Visit

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Patients with a Transient Ischemic Event ER Visit That Had a Follow Up Office Visit

Purpose: To measure the percent of patients with an emergency department visit for a transient ischemic event who had a follow-up outpatient encounter within 14 days.[1]

Format/Data Source: Electronic claims data.

Date: Included in NQF preferred practices and performance measures set, released in September 2010.[1]

Perspective: System Representative(s)

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Facilitate transitions**
    - Across settings
- **Monitor, follow up and respond to change**

Development and Testing: This measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[1]

Link to Outcomes or Health System Characteristics: None described in the source identified.

Logic Model/Conceptual Framework: None described in the source identified.

Past or Validated Applications: None described in the source identified.

- **Setting:** Emergency departments in the United States
- **Population:** Patients with transient ischemic events
- **Level of evaluation:** System

Notes:

- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas,* we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Source:

1. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #56. Biopsy Follow Up

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Biopsy Follow Up

Purpose: To measure the percentage of patients who are undergoing a biopsy whose biopsy results have been reviewed by the biopsying physician and communicated to the primary care physician and the patient, denoted by entering said physicians' initials into a log, as well as by documentation in the patient chart.[1]

Format/Data Source: Review of medical chart

Date: Included in NQF preferred practices and performance measures set, released in September 2010.[1]

Perspective: System Representative(s)

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Communicate**
  - Information transfer
    - *Between health care professional(s) and patient/family*
    - *Across health care teams or settings*

Development and Testing: This measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[1]

Link to Outcomes or Health System Characteristics: None described in source identified.

Logic Model/Conceptual Framework: None described in source identified.

Past or Validated Applications: None described in source identified.

- **Setting:** Not specified
- **Population:** Patients undergoing biopsy
- **Level of evaluation:** System

Notes:

- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Source:

1. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #57. Reconciled Medication List Received by Discharged Patients

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Reconciled Medication List Received by Discharged Patients

Purpose: To measure the percentage of patients, regardless of age, discharged from an inpatient facility to home or any other site of care, or their caregiver(s), who received a reconciled medication list at the time of discharge including, at a minimum, medications in the specified categories.[1]

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.[1]

Date: Measure released in 2009.[1]

Perspective: System Representative(s).

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
    - Information transfer
        - *Between health care professional(s) and patient/family*
- **Facilitate transitions**
    - Across settings
- **Medication Management**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[2]

Link to Outcomes or Health System Characteristics: In a Swedish study, the risk of negative clinical outcomes due to medication errors was significantly reduced for elderly individuals who were given comprehensive and structured information on medications at the time discharge. In another study, 14% of older patients that experienced a medication discrepancy were readmitted within 30 days of initial discharge, compared to only 6% among those patients without a medication discrepancy.[1]

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards, Medication Systems Guidelines from the Institute for Healthcare Improvement, and recommendations from Institute for Healthcare Improvement, a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.[1]

Past or Validated Applications:

- **Setting:** Inpatient facility in the United States
- **Population:** All patients discharged from an inpatient facility

- **Level of evaluation:** System

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.[1]
- This measure is intended for use in conjunction with two other PCPI measures (Measure #58, Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care); and Measure #59, Timely Transmission of Transition Record) as part of a bundled set. Each measure in the bundled set is intended to be scored separately.[1]
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #58. Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges)

Purpose: To measure the percentage of patients, regardless of age, discharged from an inpatient facility to home or any other site of care, or their caregiver(s), who received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the specified elements.[1]

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.[1]

Date: Measure released in 2009.[1]

Perspective: System Representative(s)

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
  - Information transfer
    - *Between health care professional(s) and patient/family*
- **Facilitate Transitions**
  - Across settings
- **Create a proactive plan of care**
- **Monitor, follow up, and respond to change**
- **Medication Management**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[2]

Link to Outcomes or Health System Characteristics: One study showed that compared to patients receiving usual care, patients who received detailed instructions, medication review and help scheduling follow-up care at the time of discharge had 30% fewer readmissions and visits to the emergency department.[1]

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards and a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.[1]

Past or Validated Applications:

- **Setting:** Inpatient facility in the Unites States
- **Population:** All patients being discharged from an inpatient facility

- **Level of evaluation:** System

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.[1]
- This measure is intended for use in conjunction with two other PCPI measures (Measure #57, Reconciled Medication List Received by Discharged Patients; and Measure #59, Timely Transmission of Transition Record – Inpatients Discharged) as part of a bundled set. Each measure in the bundled set is intended to be scored separately.[1]
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #59. Timely Transmission of Transition Record

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Timely Transmission of Transition Record

Purpose: To measure the percentage of patients, regardless of age, discharged from an inpatient facility to home or any other site of care, for whom a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge.[1]

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.[1]

Date: Measure released in 2009.[1]

Perspective: System Representative(s)

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
    - Information transfer
        - *Across health care teams or settings*
- **Facilitate Transitions**
    - Across settings
- **Create a proactive plan of care**
- **Monitor, follow up, and respond to change**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[2]

Link to Outcomes or Health System Characteristics: One study demonstrated a decreased risk of readmission when information on the index hospitalization is available during post-discharge physician visits.[1]

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards and a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.[1]

Past or Validated Applications:

- **Setting:** Inpatient facility in the United States
- **Population:** All patients being discharged from an inpatient setting
- **Level of evaluation:** System

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.[1]
- This measure is intended for use in conjunction with two other PCPI measures (Measure #57 Reconciled Medication List Received by Discharged Patients; and Measure #58, Transition Record with Specified Elements Received by Discharged Patients – Inpatient Discharges) as part of a bundled set. Each measure in the bundled set is intended to be scored separately.[1]
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #60. Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges)

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			□
Communicate			
Interpersonal communication			
Information transfer			□
Facilitate transitions			
Across settings			□
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			□
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			□
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges)

Purpose: To measure the percentage of patients, regardless of age, discharged from the emergency department (ED) to ambulatory care or home health care, or their caregiver(s), who received a transition record at the time of ED discharge including, at a minimum, all of the specified elements.[1]

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.[1]

Date: Measure released in 2009.[1]

Perspective: System Representative(s)

Measure Item Mapping:
This measure maps to the following domains: There are no individual measure items to map.

- **Establish accountability or negotiate responsibility**
- **Communicate**
  - Information transfer
    - *Between health care professional(s) and patient/family*
- **Facilitate Transitions**
  - Across settings
- **Create a proactive plan of care**
- **Monitor, follow up, and respond to change**
- **Medication Management**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: This measure incorporates elements from The Joint Commission's 2009 Hospital Accreditation Standards and a 2008 consensus policy statement from the American College of Physicians, the Society of General Internal Medicine, the Society of Hospital Medicine, the American Geriatrics Society, The American College of Emergency Physicians and the Society of Academic Emergency Medicine.[1]

Past or Validated Applications:

- **Setting:** Emergency departments in the United States
- **Population:** All patients being discharged from an emergency department (ED)
- **Level of evaluation:** System

Notes:

- Detailed measure specifications are included in the Physician Consortium for Performance Improvement (PCPI) report.[1]
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Board of Internal Medicine Foundation, American College of Physicians, Society of Hospital Medicine, Physician Consortium for Performance Improvement. Care Transitions Performance Measurement Set (Phase I: Inpatient discharges and emergency department discharges). Chicago, IL: American Medical Association; 2009.
2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Measure #61. Melanoma Continuity of Care—Recall System

CARE COORDINATION MEASURE MAPPING TABLE

	MEASUREMENT PERSPECTIVE		
	Patient/Family	*Health Care Professional(s)*	*System Representative(s)*
CARE COORDINATION ACTIVITIES			
Establish accountability or negotiate responsibility			
Communicate			
Interpersonal communication			
Information transfer			
Facilitate transitions			
Across settings			
As coordination needs change			
Assess needs and goals			
Create a proactive plan of care			
Monitor, follow up, and respond to change			□
Support self-management goals			
Link to community resources			
Align resources with patient and population needs			
BROAD APPROACHES POTENTIALLY RELATED TO CARE COORDINATION			
Teamwork focused on coordination			
Health care home			
Care management			
Medication management			
Health IT-enabled coordination			

Legend:
■ = ≥ 3 corresponding measure items
□ = 1-2 corresponding measure items

Melanoma Continuity of Care—Recall System

Purpose: To measure the percentage of patients, regardless of age, with a current diagnosis of melanoma or a history of melanoma whose information was entered, at least once within a 12 month period, into a recall system that includes: a target date for the next complete physical skin exam and a process to follow up with patients who either did not make an appointment within the specified timeframe or who missed a scheduled appointment.[1]

Format/Data Source: This process measure requires administrative claims data and data collected from the medical record.[1]

Date: Measure released in 2007[1]

Perspective: System Representative(s)

Measure Item Mapping:
This measure maps to the following domains. There are no individual measure items to map.

- **Monitor, follow-up, and respond to change**

Development and Testing: The measure was endorsed by NQF as part of their preferred practices and performance measures for measuring and reporting care coordination, released in September 2010.[2]

Link to Outcomes or Health System Characteristics: None described in the sources identified.

Logic Model/Conceptual Framework: The measure is based on clinical guidelines from both the National Comprehensive Cancer Network (NCCN) and the British National Institute for Health and Clinical Excellence (NICE).[1]

Past or Validated Applications:

- **Setting:** Not specified
- **Population:** All patients with a current diagnosis of melanoma or a history of melanoma
- **Level of evaluation:** System

Notes:

- Detailed measure specifications are included in the American Academy of Dermatology/Physician Consortium for Performance Improvement/National Committee for Quality Assurance Melanoma II Physician Performance Measurement Set.[1]
- Because the NQF-endorsed preferred practices and performance measures for measuring and reporting care coordination were released shortly before completion of the *Atlas*, we were not able to contact the measure developers about any on-going measure development or testing. Additional information may become available in the future.

Sources:

1. American Academy of Dermatology, Physician Consortium for Performance Improvement, National Committee for Quality Assurance. Melanoma II Physician Performance

Measurement Set. Chicago, IL, and Washington, DC: American Medical Association and National Committee for Quality Assurance; 2007.

2. National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Appendix I. Measure Mapping Strategy

Measure Mapping Procedures

Before beginning the mapping process, the research team developed domain definitions and the Measure Mapping Table (see Table 4).

To begin the mapping process, all measures included in the *Atlas* were reviewed by one of two reviewers. Reviewers read through each measure, keeping in mind the specific components of care coordination that the measure addresses. Using the measure mapping table and the domain definitions, the reviewers identified the specific domains that correspond to the components of care coordination that each instrument measures. Reviewers also determined the perspective of measurement. When questions arose about appropriate mapping, the reviewers discussed and ultimately agreed upon a perspective and set of domains corresponding to each measure.

To assess inter-rater reliability of the measure mapping, reviewers selected at random 6 measures (approximately 10 percent of the total included in the *Atlas*) from among 31 measures that were planned for inclusion within the *Atlas* at the time the reliability testing was performed. The 19 measures included in an earlier draft *Atlas* were not considered for reliability testing because their mapping was discussed during development of the draft. The reviewers also did not consider reliability testing on those measures for which a final decision had not yet been made about whether it would be included in the *Atlas*, or measures that were missing key information (such as the measure instrument) at the time of reliability testing. Three measures were selected randomly from among those mapped by reviewer 1 (n=9 measures total) and three were selected randomly from among those mapped by reviewer 2 (n=22). Reliability was assessed before any discussion among the reviewers regarding the selected measures.

Across the 6 measures, there were 169 individual measure items (e.g., survey questions). Agreement about whether a specific item mapped to any domain was 86 percent (146/169), with a kappa of 0.694 ($p<0.001$). Conventionally, a kappa >0.67 is considered sufficient for drawing some conclusions. Therefore, we believe that the observed kappa of 0.69 is sufficient for the purposes of the measure mapping, which is intended to facilitate identification of relevant measures.

We also assessed reliability of mapping to the 3 perspectives: patient/family, health care professional(s), and system representative(s). Across 6 measures and 3 perspectives, there were 18 possible perspective mappings. (Each measure may be mapped to multiple perspectives). Reviewers agreed on all but one combination, resulting in 94 percent agreement. We did not calculate a kappa statistic because it is not an appropriate statistic when more than one mapping is possible for each measure.

Reliability of mapping to the framework domains was also assessed. To assess agreement of domain mapping across measurement items, only items that were mapped by both reviewers (n=101) were considered. Subdomains (e.g., Interpersonal Communication and Information Transfer) were considered as distinct domains for the purposes of reliability assessment.

Domain mapping agreement was examined in two ways. First, we examined agreement by domain. That is, what proportion of the 101 measure items did both reviewers agree should be mapped to each domain? Agreement in mapping to domains was good, ranging from 80 percent (Communicate) to 100 percent (Facilitate Transitions as Coordination Needs Change; Health Care Home; Health IT-Enabled Coordination).

Reliability of domain mapping was also assessed by comparing mapping across measure items. That is, how similar were each reviewer's mappings for each item? For this comparison, the denominator was calculated by multiplying the total number of items mapped (n=101) by the total number of possible mappings (17 domains). Agreement was excellent. The reviewers agreed on 1604/1717 possible mappings, or 93 percent. As was the case for the perspective reliability assessment, a kappa statistic was not calculated because it is not an appropriate statistic when more than one mapping is possible for each measure.

Examples of Measure Item Mappings

The following list provides sample items (and their measure source) that were mapped to each care coordination domain on the measure mapping table. Copies of the measure instruments will be added to Appendix IV: Care Coordination Measures, currently under development. Appendix IV will be updated regularly.

Establish Accountability or Negotiate Responsibility

- *I clarify whether the nurse or I will have the responsibility for discussing different kinds of information with the patient.* [Measure #7b, item 10 (CPS)]
- *How often were you confused about the roles of different providers?* [Measure #6. item 9 (CPCQ)]

Communicate*

- Across health care teams or settings – *How effective is one-to-one communication between ICU staff and members of other units?* [Measure #12a. item VIIB.f (ICU Nurse-Physician Questionnaire)]

Interpersonal Communication

- Between health care professional(s) and patients/family – *How often does your service provider talk with you about your future care?* [Measure #6, item 27 (CPCQ)]
- Within teams of healthcare professionals – *I discuss areas of agreement and disagreement with nurses in an effort to develop mutually agreeable health goals.* [Measure #7b, item 5 (CPS)]

Information Transfer

- Across health care teams or settings – *Medical record transfer: IF a person age 75 or older is transferred between emergency rooms or between acute care facilities, THEN the medical record at the receiving facility should include medical records from the transferring facility, or should acknowledge transfer of such medical records.* [Measure #2, item 11 (ACOVE-2 Quality Indicators)]
- Within teams of health care professionals – *It is often necessary for me to go back and check the accuracy of information I have received from nurses in this unit.* [Measure #12b, item I-4 (ICU Nurse-Physician Questionnaire)]

*Note: When the mode of communication was not clear, measures and measure items were mapped to the less specific *Communicate* domain rather than to either of the subdomains (*Interpersonal Communication* and *Information Transfer*).

Facilitate Transitions†

Across Settings

- *Did your primary care provider (PCP) or someone working with your PCP help you make the appointment for that visit (referred to specialist)?* [Measure #17a, item E9 (Primary Care Assessment Tool-Child Edition (PCAT-CE))]

As Coordination Needs Change

- *In preparation for transition (to adulthood), does your provider have a process to share information with the adult care provider including: transition plans, medical records, key health issues, and current family and youth roles in managing care?* [Measure #11a, item 4.2E (FCCSAT-Family Version)]

†Note: We were able to map all measures related to transitions to one or the other of the subdomains specifying transition type (*Facilitate Transitions Across Settings* and *Facilitate Transitions as Coordination Needs Change*). Therefore, no measures or measure items were mapped to the less specific Facilitate Transitions domain.

Assess Needs and Goals

- *Before I left the hospital, the staff and I agreed about clear health goals for me and how these would be reached. (Y/N)* [Measure #9b, item 1 *(*CTM-15)]

Create a Proactive Plan of Care

- *When I left the hospital, I had a readable and easily understood written plan that described how all of my health care needs were going to be met.* [Measure #9b, item 1 (CTM-15)]

Monitor, Follow Up, and Respond to Change

- *In the past 3 months, how often have service providers responded appropriately to changes in your needs?* [Measure #6, item 10 (CPCQ)]
- *Diagnostic test followup: IF the outpatient medical record documents that a diagnostic test was ordered for a person age 75 or older, THEN the medical record at the followup visit should document 1 of the following: result of the test, test was not needed or reason why it will not be performed, test is still pending.* [Measure #2, item 6 (ACOVE-2 Quality Indicators)]
- *Does your partnership with your provider change over time as your experiences, knowledge, and skills change?* [Measure #11a, item 1.8 (FCCSAT-Family Version)

Support Self-Management Goals

- *When I left the hospital, I clearly understood the warning signs and symptoms I should watch for to monitor my health. (Y/N)* [Measure #9b, item 6 (CTM-15)]
- *In the past 3 months, how often did someone on your diabetes care team teach you how to take care of your diabetes?* [Measure #21, item 7 (RSSM)]

Link to Community Resources

- *Linking patients to outside resources: 1) is not done systematically; 2) is limited to a list of identified community resources in an accessible format; 3) is accomplished through a designated staff person or resource responsible for ensuring providers and patients make maximum use of community resources; or 4) is accomplished through active coordination between the health system, community service agencies, and patients.* [Measure #1, item 7 (ACIC)]

Align Resources With Patient and Population Needs

- *Do you and your staff: Offer trained interpretation (foreign language or sign)?* [Measure #11b, item 13.1C *(*FCCSAT-Provider Version)]
- *Is your facility able to change health care services or programs in response to specific health problems in the communities?* [Measure #17c, item J4 (PCAT-FE)]

Teamwork Focused on Coordination

- *When problems arise regarding the care of ____ patients, do care providers in these groups work with you to solve the problem?* [Measure #46, item 4 (RCS)]
- *Overall, our unit functions very well together as a team.* [Measure #12a, item V.9 (ICU Nurse-Physician Questionnaire)]

Health Care Home

- *Is there a doctor or place that you usually take your child if s/he is sick or you need advice about his/her health?* [Measure #17b, item A1 (PCAT-AE)]

Care Management

- *Does anyone help you or coordinate [CHILD'S NAME]'s care among the different doctors or services [he/she] uses? (asked for children who used more than two services)* [Measure #51, item K5Q20 (NSCH)]

Medication Management

- *The pharmacist and I negotiate to come to an agreement on our activities in managing drug therapy. (Y/N)* [Measure #18, item 7 (PPCI)]

Health IT-Enabled Coordination

- *What is the policy timeframe for clinicians to respond to patient PHR emails?*[14] [Measure #34, item 10 (PHR)]

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[14] PHR = Personal Health Record

Appendix II. Identifying Measures

Main Indicator Sources

1. *Literature Search.* A measure-specific care coordination search was conducted to identify published literature related to the development, validation, and testing of measures of care coordination. The search strategy is outlined below.
2. *Care Coordination EPC Report.* As part of a previously published care coordination report ("Closing the Quality Gap: A Critical Appraisal of Quality Improvement Strategies"; Volume 7: Care Coordination), background research and a systematic review identified care coordination indicators in published studies.
3. *Panelist Calls.* A series of panel calls were held in order to obtain information regarding additional measures of care coordination and ongoing research and development in the field. Panel participants had backgrounds ranging from research and evaluation in care coordination to clinical practice. For a list of panel participants, please see Appendix III: Advisory Group Participants.
4. *NQF Draft Report.* NQF evaluated a list of 77 candidate measures and recommended a set of preferred practices across five domains of care coordination: 1) health care home, 2) proactive care plan, 3) communication, 4) information systems, and 5) transitions. The final report was released in October, 2010, shortly before completion of the *Atlas*.[15]

Literature Review Search Strategy

The final measure search was performed on July 13, 2010, using the following strategy:

> **[** ("(("healthcare " or "healthcare " or care) adj3 (coordinat* or "co-ordinat*" or integrat*)).tw.") **AND** ("(rated or rating or indicator* or measure* or valid* or reliab* or outcome* or model* or scale* or subscale* or questionnaire*).tw. or methods.fs. or exp Questionnaires/") **] NOT [** ("exp geographic locations/ not exp united states/") **]**

The search was limited to English language publications. Details of the search strategy development are included in the box below.

In addition, publications by known key researchers involved in care coordination measurement were also searched. Bibliographies of particularly relevant included references were also reviewed for any further sources of information.

We compared our search strategy to RAND's ACOVE-3 search strategy post-hoc, and we found no additional terms, phrases, or combinations that were not captured in the strategy outline above.

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[15] National Quality Forum. Preferred practices and performance measures for measuring and reporting care coordination: a consensus report. Washington, DC: National Quality Forum; 2010.

Details of Search Strategy Development

With the help of a research librarian, a literature search was conducted using Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1950 to Present. Several sets of search terms were used in combination to net articles describing care coordination measures and measurement strategies. Search sets 1–7 (shown below) represent the concept of ‘care coordination’. Search sets 8–10 represent the concept of ‘measures’. Search sets 11 and 12 represent the concept of ‘outpatient’ and ‘medical home’. Search set 13 represents any citation indexed with a non-United States country subject heading and is used with the Boolean operator “NOT” to narrow the size of other search sets. Search set 14 is a high-precision title search using only the most relevant terms to “catch” obviously relevant citations the other searches might have missed.

Searches using combinations of the above sets were conducted. Searches were checked for article inclusion compared to a list of 10 highly relevant articles. The most effective search strategy was chosen based on inclusion rate and the total number of search results. The team determined that the final search strategy should yield no more than 4000 results, while simultaneously including as many of the 10 “test articles” as possible. The final search strategy used was: ((7 and 10) not 13) and eng.la. A search of the database through April 5, 2010, using this search set yielded 3306 publications and included 8 of the 10 test articles. The measure search was updated on July 13, 2010, to capture any additional measures indexed in MEDLINE after the original search. The updated search yielded 8 new measures from among 142 new publications.

Search Sets:
Search Set 1: “exp "Continuity of Patient Care"/” *(10856 results)*
Search Set 2: “exp *"Continuity of Patient Care"/” *(5213 results)*
Search Set 3: “disease management.de” *(6824 results)*
Search Set 4: “exp case management/ or "case manager*".mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]” *(7613 results)*
Search Set 5: “patient centered care.de.” *(6153 results)*
Search Set 6: “exp Delivery of Healthcare , Integrated/” *(6135 results)*
Search Set 7: “(("healthcare " or "healthcare " or care) adj3 (coordinat* or "co-ordinat*" or integrat*)).tw.” *(8073 results)*
Search Set 8: “exp "Outcome and Process Assessment (Healthcare)"/ or exp Quality Indicators, Healthcare / or exp treatment outcome/ or exp quality of healthcare /” *(3711934 results)*
Search Set 9: “exp "Outcome and Process Assessment (Healthcare)"/ or exp Quality Indicators, Healthcare /” *(484437 results)*
Search Set 10: “(rated or rating or indicator* or measure* or valid* or reliab* or outcome* or model* or scale* or subscale* or questionnaire*).tw. or methods.fs. or exp Questionnaires/” *(4889524 results)*
Search Set 11: “exp ambulatory care/ or outpatient.mp. or ambulatory.mp. or (visit* adj3 (clinic or clinics)).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]” *(156296 results)*
Search Set 12: “("medical home" or pcmh).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]” *(532 results)*
Search Set 13: “exp geographic locations/ not exp united states/” *(1661486 results)*

Search Set 14: "((measure* or valid* or reliab* or outcome* or model* or scale* or subscale* or method* or questionnaire* or rated or rating or quality or indicator*) and ((coordinat* or "co-ordinat*" or integrat*) and (care or healthcare or "health-care"))).ti." *(553 results)*

10 Relevant Articles:

1. Antonelli RC, Stille CJ, Antonelli DM. Care coordination for children and youth with special healthcare needs: A descriptive, multi-site study of activities, personnel costs and outcomes. Pediatrics 2008;122:e209-16.
2. Rittenhouse DR, Casalino LP, Gillies RR, et al. Measuring the medical home infrastructure in large medical groups. Health Aff 2008;1246-58.
3. McGuiness C, Sibthorpe B. Development and initial validation of a measure of coordination of healthcare. Int J Qual Health care 2003;15(4):309-18.
4. Coleman EA, Eilertsen TB, Magid DJ, et al. The association between care coordination and emergency department use in older managed care enrollees. Int J Integr Care 2002;2:e03.
5. Cooley WC, McAllister JW, Sherrieb K, et al. The medical home index: Development and validation of a new practice-level measure of implementation of the medical home. Ambul Pediatr 2003;3:173–80.
6. Zillich AJ, Doucette WR, Carter BL, et al. Development and initial validation of an instrument to measure physician-pharmacist collaboration from the physician perspective. Value Health 2005;8(1):59–66.
7. Malouin RA, Starfield B, Sepulveda MJ. Evaluating the tools used to assess the medical home. Manage Care 2009 18(6): 44–8.
8. Coleman EA, Smith JD, Frank JC, et al. Development and testing of a measure designed to assess the quality of care transitions. Int J Integr Care 2002;2:e02.
9. Bethell CD, Read D, Brockwood K. Using existing population-based data sets to measure the American Academy of Pediatrics definition of the medical home for all children and children with special healthcare. Needs 2004;113:1229-537.
10. Peikes D, Chen A, Schore J, et al. Effects of care coordination on hospitalization, quality of care, and healthcare expenditures among Medicare beneficiaries. JAMA 2009;301(6):603-18.

Measure Selection

Measures for inclusion in the *Atlas* were identified in two steps. First, a list of potential measures was compiled from the search strategies outlined above, which yielded a total of 3448 unique measure sources. Measure sources were included if they featured any relation to measurement or evaluation of care coordination or of any of the care coordination domains included within our measurement framework, with an emphasis on specific instruments or measures. Although the ambulatory setting is the focus of this project, we did not exclude sources discussing measurement of care coordination in nonambulatory settings. Validity, testing, or feasibility of measures were not considered during this review phase.

A single reviewer compiled the potential measures list after reviewing titles and abstracts of all search results. A second reviewer provided input on measure sources for which inclusion was unclear and a decision was made through discussion.

Based on this preliminary review, 149 potential measure sources were identified to consider for inclusion in the *Atlas*. It is important to note that in some cases multiple sources related to a single measure, and in other cases a single source discussed multiple measures.

In the second step, we reviewed the full text of all articles on the potential measure list and made decisions about whether they should be included within the *Atlas*. Measures were excluded if, in the opinion of the reviewer, they did not meet all of the following criteria:

1. **Clear relevance to care coordination or at least one of the care coordination measurement framework domains.** Measures that did not include at least one instrument item that mapped to at least one framework domain were not included. Measures that contained only 1 or 2 minimally relevant items within a large instrument unrelated to care coordination were also excluded.
2. **A clearly defined and reproducible measure yielding quantitative data.** Examples of evaluations that did not meet this criterion were interview guides, focus group reports, or free-response questionnaires yielding textual data that required content analysis; quality improvement guides designed to walk users through a process of self-evaluation without yielding measurable data; and evaluations of specific programs or interventions tailored to the subject of study in such a way as to make use in any other situation very difficult without major modification.
3. **Information available demonstrating some valid measurement properties or that the measure was developed in association with a logic model that has evidence of causal linkages between the activities measured and outcomes desired.** Measures that underwent testing and were shown to have poor validity or reliability were not included in the *Atlas*.

In many cases, additional sources were consulted to address the testing criteria. When the decision about whether to include a measure seemed unclear, the primary reviewer consulted with additional team members and a decision was made through discussion.

Of the 149 potential measure sources identified, 70 were excluded. Of these, 31 were excluded due to lack of relevance (criterion 1); 34 were excluded because they were not a clearly defined, quantitative measure (criterion 2); and 38 were excluded due to unknown or poor validation or testing (criterion 3). Thirty-five potential measure sources met more than one exclusion criteria. In addition, 7 measures sources were excluded because we could not identify information necessary to assess suitability for inclusion in the *Atlas*. Our attempts to obtain the missing information from the developers of these measures were unsuccessful at the time of publication. A further 18 measure sources were not unique; that is, multiple sources pertained to a single measure. These sources were used to create the profiles but did not themselves contribute a unique measure.

In all, we include 61 measures in the *Atlas*, which are detailed in 78 profiles. The number of profiles is greater than the number of measures because for measures with multiple versions, we created separate profiles for versions with substantially different question items. In instances where the only difference between versions was a minor wording change to reflect a different population, setting, or year, we created just one profile to represent all versions.

Limitations

Although we attempted to identify as many potential measures of care coordination as possible through our various search strategies, we relied primarily on published instruments available in the public domain. Instruments not published in journals were identified chiefly through suggestions from our review panels. This method omits an unknown number of potential measures that were not published in the literature, not identified by our search terms, or were not recommended for review by our advisory panels. When a potential measure of care coordination was reported in the literature without including the measure instrument, we contacted the article author to request a copy of it. We were also limited in our ability to provide information on the feasibility and cost of using measures by what was reported in the literature; few studies describe these aspects of measurement.

Appendix III. Advisory Group Participants

GROUP 1 – Focus on Candidate Measures/Measure Gaps (Stakeholder/Informant Panel)

Karen Adams, Ph.D. Vice President of National Priorities, National Quality Forum

Anne-Marie Audet, M.D., MSc. Vice President, Quality Improvement and Efficiency, The Commonwealth Fund

Helen Burstin M.D., M.P.H. Senior Vice President, Performance Measurement, National Quality Forum

Eric Coleman, M.D., M.P.H. Professor of Medicine, Division of Healthcare Policy and Research & Geriatric Medicine, University of Colorado, Denver

Jinnet Fowles, Ph.D. Senior Vice President, Park Nicollet Institute

Sarah Scholle, M.P.H., Dr.P.H. Assistant Vice President for Research, National Committee for Quality Assurance

Sara Singer, Ph.D., M.B.A. Assistant Professor of Healthcare Management and Policy, Harvard School of Public Health

Vincenza Snow, M.D., F.A.C.P. Director, Clinical Programs and Quality of Care, American College of Physicians

Scott Stumbo, M.A. Senior Research Associate, Child and Adolescent Health Measurement Initiative, Oregon Health and Science University

Jonathan Weiner, Dr.P.H. Director, PhD Program in Health Services Research and Policy; Deputy Director, Health Services R&D Center ; Faculty Member and Executive Committee Member, Division of Health Sciences Informatics, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health

Daniel Wolfson, M.H.S.A. Executive Vice President and Chief Operating Officer, American Board of Internal Medicine Foundation

GROUP 2 – Focus on Evaluation *Atlas* Design (Expert Panel)

Melissa Affronti, Ph.D., L.M.S.W. Senior Program Associate, Evaluation and Services Research. Coordinated Care Services, Inc. Adjunct Instructor, The College at Brockport GRC-MSW Program

Richard Antonelli, M.D., M.S. Medical Director, Children's Hospital Integrated Care Organization (CHICO) and Associate/ Interim Medical Director for Quality, Physicians' Organization, Children's Hospital Boston/Harvard Medical School

Carol Cain, Ph.D. Director, Clinical Integration, The Permanente Federation

Susan Edgman-Levitan, **P.A.** Executive Director, John D. Stoeckle Center for Primary Care Innovation, Massachusetts General Hospital; Founding President, Picker Institute

Mark Friedberg, M.D., M.P.P. Associate Natural Scientist, RAND Corporation

Adele Gorges. Director, Western New York Care Coordination Program, c/o Coordinated Care Services, Inc.

Tom Jewell, Ph.D. Adjunct Assistant Professor of Psychiatry, University of Rochester Medical Center. Director, Evaluation and Services Research, Coordinated Care Services, Inc.

Sally Kraft, M.D., M.P.H. Medical Director for Care and Quality Innovations, University of Wisconsin Medical Foundation

Gerri Lamb, Ph.D., R.N., F.A.A.N. Associate Professor, Research Support, Arizona State College of Nursing and Health Innovation

Denise Love, M.B.A., R.N. Executive Director, National Association of Health Data Organizations

Dana Safran, Sc.D. Senior Vice President for Performance Measurement and Improvement, Healthcare Services Division, Blue Cross Blue Shield of Massachusetts; Associate Professor of Medicine, Tufts University School of Medicine

Shoshana Sofaer, Dr.P.H. Professor; Robert P. Luciano Chair of Healthcare Policy, Baruch College, City University of New York School of Public Affairs

Bert Vrijhoef, Ph.D. Director, Department of Integrated Care, Maastricht University Medical Centre; Professor, Chronic Care, Tilburg University

Eric Weil, M.D. Unit Chief, Adult Medicine Practice, Revere Health Care Center

Daniel Wolfson, M.H.S.A. Executive Vice President and Chief Operating Officer, American Board of Internal Medicine Foundation

Appendix IV. Care Coordination Measure Instruments

Appendix IV, currently under development, will contain copies of the individual measure instruments included in the *Care Coordination Measures Atlas* as well as contact information for the measure developer, when available. Appendix IV will be updated as needed.

Continue to check this site for availability of the Appendix.