

**Improving Care Coordination and Care Management:
Supporting the All-Payer Model Design by Reducing Avoidable
Use of Health Care, Lowering Spending, and Improving Health**

**A Report by the Care Coordination Work Group to the Maryland Health
Services Cost Review Commission**

April 2015

Executive Summary

The Maryland Health Services Cost Review Commission (HSCRC) established a Care Coordination Work Group to offer advice on how hospitals, physicians, and other key stakeholders can work together with government leaders on effective care coordination to support the Maryland All-Payer model. This Work Group held six meetings from November 2014 through March 2015. The major recommendations of the Work Group are as follows:

1. The key challenge is to bring care coordination and chronic care management to scale. Given the large number of individuals and providers involved in care management, it is important to develop shared tools such as reports on high-utilizing patients, risk stratification, care gap analyses, and shared patient care profiles. New investments in this infrastructure will reduce duplication of effort, increase efficiency, and improve health outcomes.
2. The challenge is to create opportunities to cooperate even while healthcare organizations compete in other ways.
3. There is a consensus on an approach of beginning with high-needs patients in the Medicare fee-for-service system and developing care innovations to include shared care plans to reduce avoidable hospitalizations.
4. The approach should capitalize on and support medical home providers in taking advantage of Medicare's new Chronic Care Management fee, which generally offers an additional per-member-per-month sum for providing enhanced services to patients with multiple chronic conditions.
5. A three-step sequence can prove valuable: (1) an effective risk stratification approach to identify people with complex medical needs; (2) the development of health risk assessments to ascertain patients' needs; and (3) the formation of a patient-centric care profiles and plans addressing the medical and social needs of patients.
6. To better serve this population, we recommend a dual-track process of organizing, synthesizing and using existing data, and acquiring new data from the Centers on Medicare & Medicaid Services (CMS).
7. Key ingredients of an effective care coordination strategy include immediate alerts to a patient's medical home and care managers following emergency department visits and hospitalizations; face-to-face interaction between care managers and patients on a regular basis; medication management; data sharing; patient engagement and education; the integration of behavioral and physical health care; integration of staff between hospital and long-term and post-acute facilities focused on reducing avoidable admissions and readmissions; smooth transitions of care, particularly from hospitals to home, post-acute care, and long-term care; incorporating social services into the delivery model; and the use of health information technology to promote data sharing and help providers better serve patients.

8. Engaging trusted community partners (e.g. public health, community-based organizations, and faith-based organizations) can also contribute to success by addressing non-medical factors affecting health and building community interest and support.

Immediate next steps include:

1. Refine data use agreements and enhance data privacy procedures.
2. Build/secure a data infrastructure to facilitate the identification of individuals who would benefit most from care coordination (risk stratification)
3. Encourage patient-centered care through the development of common Care Plan data elements; provide resources to design readily visible patient care profiles.
4. Promote patient engagement with various strategies, including patient ability to view data.
5. Encourage (a) collaboration through avoiding duplication of resources across provider systems, (b) the use of Medicare's new Chronic Care Management payments, and (c) increased integration between physical and mental health and integration of staff and resources across hospitals and long-term and post-acute providers.
9. Connect a wide range of providers, including those in ambulatory and long-term care settings, to the data infrastructure.

Introduction and Background

The State of Maryland is leading a transformative effort to improve care and lower the growth in health care spending. Stated in terms of the “Three Part Aim,” the goal is a health care system that enhances patient care, improves health, and lowers total costs.

Maryland worked closely with the Centers for Medicare & Medicaid Services (CMS) throughout 2013 to design an innovative plan that would make the State a national leader in achieving the Three Part Aim and permit the federal government to continue to participate in the four-decade long all-payer hospital payment system that has proven to be both successful and enduring. The federal government approved Maryland’s new Model Design application, and implementation began in January 2014.

The Model as approved by CMS includes cost savings and quality improvement requirements including:

- All-Payer total hospital per capita annual revenue growth no greater than 3.58%;
- Medicare hospital payment savings of \$330 million over five years relative to the national growth rate;
- Reduce Medicare 30-day unadjusted, all-cause, all-site readmission rate to the corresponding national average over five years;
- An annual aggregate reduction of 6.89% in Potentially Preventable Conditions (PPCs) over five years, which will result in a cumulative reduction of 30% in PPCs over the life of the model.
- Other outcomes and quality indicators to be measured and monitored.

Significant progress has been made in the first phase of implementation of the All-Payer model.

Accomplishments include:

- Hospital revenues are now under global budgets, paving the way for needed care improvements and assuring performance within the limits of the all-payer requirements;
- Key quality payment policy enhancements have been adopted to be consistent with the new Model; and
- Broad groups of stakeholders are engaged in implementation workgroups.

The key challenge is to bring care coordination and chronic care management to scale. Given the large number of individuals and providers involved in care management, it is important to develop shared tools such as reports on high-utilizing patients, risk stratification, care gap analyses, and shared patient care profiles. New investments in this infrastructure will reduce duplication of effort, increase efficiency, and improve health outcomes. The challenge is to create opportunities to cooperate even while healthcare organizations compete in other ways.

There are several aspects of care delivery changes and innovation that will need to occur for the success of the new model. Care coordination and integration, particularly for complex patients with chronic conditions, will need to be enhanced. The purpose of the Care Coordination Work Group is to provide the Health Services Cost Review Commission (HSCRC) and the Department of Health and Mental Hygiene (DHMH) with advice on how hospitals, physicians, and other providers as well as other key stakeholders can work together with government leaders on effective care coordination to support the goals of Maryland's All-Payer model. The main focus of this Work Group is on recommending care coordination strategies and priorities that are timely, scalable, and reflect best practices. There is a consensus on an approach of beginning with high-needs patients in the Medicare fee-for-service system and developing care innovations to include shared care plans to reduce avoidable hospitalizations.

It is critically important to select and prioritize high-need individuals for whom care management has a good potential to improve care and reduce costs. There is consensus to begin by selecting a sub-group of Medicare fee-for service beneficiaries with a goal of reducing recurrent, unnecessary emergency department visits and potentially avoidable hospitalizations. One can use prior acute care utilization to assist in identification but this list must be narrowed to focus on those with mutable factors as well as broadened to include high-risk individuals who do not yet have high use of acute care services but are at high risk for poor outcomes. This can be accomplished through a hybrid approach that incorporates information obtained from a health risk screen or by direct referral from a clinician. Once needs are understood, implement more integrated approaches to improve care, and where indicated use care coordinators to meet patients' needs and intervene rapidly and effectively to address any changes in health status.

The Work Group was charged with developing a timeline for consideration and implementation of top-priority state-wide and/or regional investments in care coordination. These investments include shared infrastructure for data, predictive modeling, information technology, and the necessary work force. While there is a need to move quickly on care coordination for high-needs Medicare patients already experiencing frequent hospitalizations and those with multiple chronic conditions, there is also consensus that ultimate success requires the ability to more effectively address the needs of high-risk patients across the life cycle and in various insurance arrangements, including the uninsured.

Care coordination resources need to be implemented and brought to scale. Yet personnel and the supporting infrastructure are expensive and so must be allocated in a fashion to produce a positive return on investment to enable sustainability.

The Care Coordination Work Group held six meetings. Experts leading care coordination projects both within Maryland and outside of the State presented at these meetings. Representatives from Kaiser Permanente, Frederick Memorial Hospital, Maryland's Coordination Center, Bon Secours Hospital, and the County of San Diego, CA highlighted their promising care coordination program designs with positive results at a special educational session. Dr. Amy Boutwell, Dr. Art Jones, Dr. Joanne Lynn, and Dr. Greg Vachon offered advice based on their experience in medical practice and research. Deborah Gracey provided ongoing advice throughout the project based on her experience in how large purchasers can make prudent investments in cost-effective care management.

The All-Payer Model: The Need for Care Coordination

A key component of the strategy to meet the goals of Maryland's All-Payer Model is improved care management for people with chronic diseases and complex needs.

- ✚ Half of all adults—117 million people—have one or more chronic health conditions.¹
- ✚ One of four adults has two or more chronic health conditions.²
- ✚ Seven of the top ten causes of death in 2010 were chronic diseases.³
- ✚ Chronic medical conditions account for 86% of total health spending, according to the Centers for Disease Control and Prevention⁴ and 14% of Medicare beneficiaries with 6+ chronic conditions account for half of Medicare's total health spending.
- ✚ Among people 65 years of age and older, 43% have three or more chronic illnesses, and 23% have more than five. Chronic medical conditions associated with modifiable risk factors such as smoking, nutrition, weight, and physical activity represent six of the ten costliest medical conditions in the US, with a combined medical expenditure of \$338 billion in 2008.⁵

The US health care delivery system is hampered by fragmented care delivered in silos. Although there are some exceptional examples of excellent care coordination and management, in most cases care is still sought and delivered in a disjointed fashion constrained by fee-for-service reimbursement limited to "billable clinicians." A lack of coordination among primary care providers and specialist physicians, failure to effectively manage transitions of care post-hospital discharge, and the failure to utilize or coordinate services such as home visits result in suboptimal outcomes. Remote monitoring of patients, medication reconciliation and management, nurse hotlines, and electronic support to track patients and enhance clinical decision-making are under-resourced for high-risk patients.

This fragmented delivery system, and the long-standing financial incentives that favor service provision independent of clinical impact, have had serious consequences. The Commonwealth Fund estimates that up to 84,000 fewer people would suffer premature, medically-preventable death each year in the US if we achieved the lower mortality rate of the leading three countries. Further, this report indicates that the Medicare program could save more than \$4.2 billion a year by reducing hospitalizations for preventable conditions.⁶

Maryland's new hospital payment model provides remarkable new incentives for hospitals to work with physicians and community partners to reduce avoidable ED use, hospital admissions, and readmissions.

¹ <http://www.cdc.gov/chronicdisease/overview/>

² Ward BW, Schiller JS, Goodman RA. Multiple chronic conditions among US adults: a 2012 update. *Prev Chronic Dis.* 2014;11:130389.

³ Centers for Disease Control and Prevention. Chronic Diseases: The leading causes of death and disability in the United States. <http://www.cdc.gov/chronicdisease/overview/>

⁴ <http://www.cdc.gov/chronicdisease/>

⁵ Soni, A. 2011. "Top 10 most costly conditions among men and women, 2008: estimates for the U.S. civilian, non-institutionalized adult population, age 18 and older." Statistical Brief # 331. Washington, DC. HHS.

⁶ The Commonwealth Fund. The Commission on a High-Performing Health System, Why Not the Best? Results from the National Scorecard on U.S. Health System Performance. 2011.

Now the challenge is to develop new approaches to care delivery and management to achieve such reductions in avoidable care in high-cost settings.

The Maryland Context

In order to put the need for care coordination resources and infrastructure in a Maryland context, HSCRC and DHMH staff prepared a patient-centered analysis of hospital utilization and costs in Maryland and utilized chronic condition summaries for Maryland Medicare beneficiaries that were prepared by CMS.

We aggregated de-identified hospital utilization and costs on a patient-centered basis using HSCRC hospital discharge abstract data for CY 2012 that contained inpatient and emergency room services. We used the CRISP unique ID to combine records for each patient across hospitals. This allows us to conduct patient-centered analysis with de-identified data that protects patient privacy. We used the Agency for Healthcare Research and Quality's Clinical Classification Software (CCS) to collapse diagnoses reported in the data into more clinically meaningful categories that could be used to describe the conditions reported for each patient. This data set was used to estimate the number and types of patients with high use of hospital services who might benefit from care coordination and management.

We also used data from Medicare's Chronic Condition warehouse to estimate the number of Medicare beneficiaries with multiple chronic conditions who might benefit from enhanced primary care under Medicare's CCM program.

For purposes of the analysis, we defined high-needs patients based on their use of inpatient hospital services. The following table provides summary statistics for those patients who had three or more hospital admissions. There were 40,601 patients with three or more admissions. Two-thirds of these high-utilizers were Medicare patients, including patients who were eligible for both Medicare and Medicaid. The average hospital cost per patient was approximately \$70,000. For Medicare, these approximately 27,000 high-utilizing patients comprise about 3% of the 830,000 Medicare beneficiaries in Maryland in 2012, and about one-third of the included Medicare hospital charges. Based on this and other analyses that have been prepared, we estimate that 3% to 5% of Medicare beneficiaries could potentially benefit from more intense care planning and care coordination activities.

Patients with Three or More Admissions in Maryland (CY 2012)

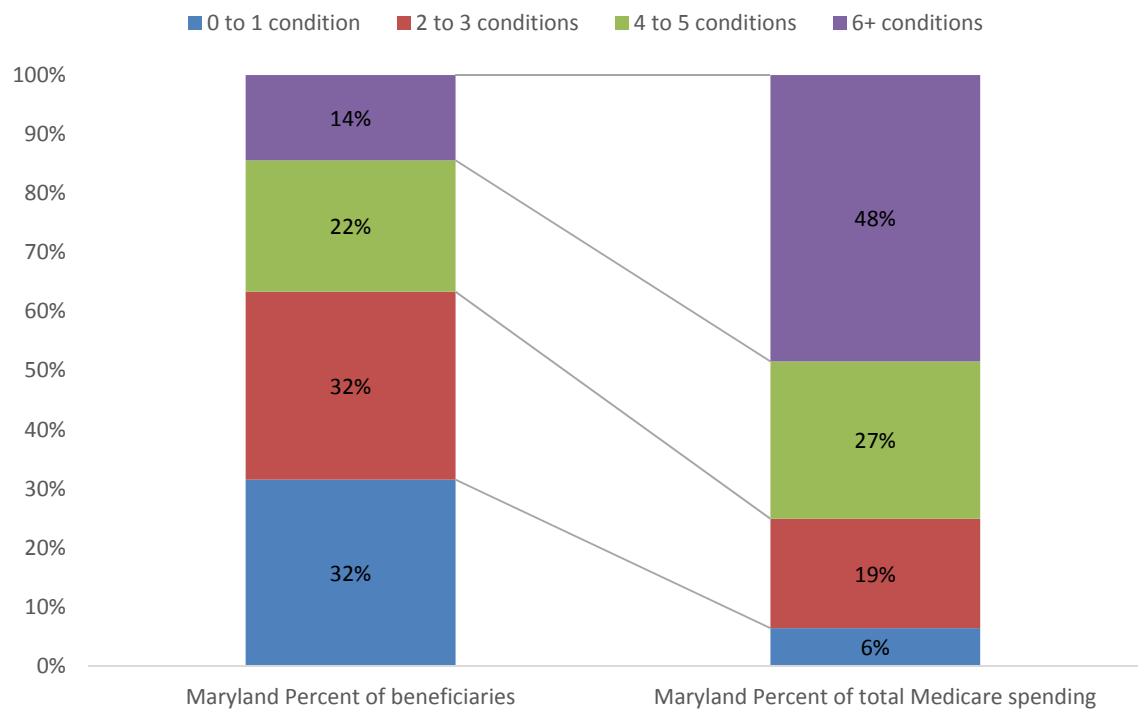
Payer Group	# of Patients	% of Patients	Total Charges	% of Charges
Medicaid, Other, Self Pay	13,731	34%	\$ 1.03 billion	35%
Medicare	20,592	51%	\$ 1.42 billion	49%
Dual Eligible	6,278	15%	\$.46 billion	16%

Source: CY12 HSCRC Discharge Data. Includes Inpatient and ER Charges, excludes Obstetrics.

Relative to Medicare's Chronic Care Management (CCM) fee, explained in more detail below, patients with two or more chronic conditions are able to enroll in the program. This represents more than 60% of all Medicare patients. In order to focus attention on those patients most likely to benefit from this program, we focused on the two highest categories of patients with multiple chronic conditions--those with 4 to 5 conditions and those with 6+ conditions. Those with 6+ conditions include approximately 14% of Medicare beneficiaries and account for 48% of Medicare's expenditures. Those with 4 to 5 conditions include an additional 22% of Medicare beneficiaries and represent approximately 27% of Medicare spending. Together, they comprise approximately 36% of beneficiaries and 75% of Medicare spending (see Chart below).

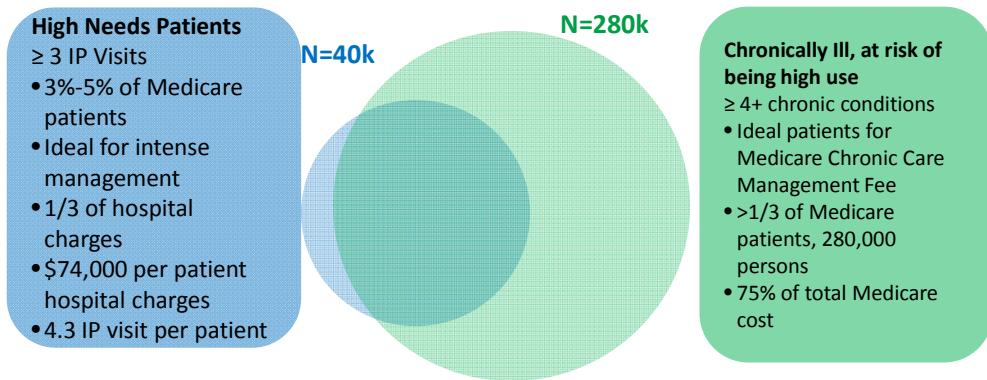
Translating this back to Maryland, 35% of Medicare beneficiaries totals approximately 280,000 individuals who could benefit from this program and also generate the most extensive reductions in avoidable hospital utilization. If all 280,000 patients were enrolled in the CCM program, this would generate nearly \$140 million in revenues from Medicare that could be used to help manage the chronic illness of these patients. This is a major opportunity for alignment of interests of primary care and other community providers with those of hospitals in providing improved chronic care and care planning and management. It is also a major financial opportunity to create sustainability and alignment for primary care and other community providers.

Distribution of Medicare Beneficiaries by Number of Chronic Conditions & Total Medicare Spending, in Maryland (2012)



The chart below summarizes this analysis. While this analysis can be refined, it provides a basis for discussion regarding the scope of infrastructure and support that will be needed to bring care coordination and chronic care management to scale for the benefit of Marylanders, beginning with Medicare patients.

Who to Manage—High Needs and Chronically Ill Medicare Patients (280k of ~800k Medicare patients in Maryland)



- Two-thirds of highest need patients are Medicare (HSCRC discharge data and CRISP EID)
- About one-fourth dually eligible for Medicare and Medicaid
- Nearly 2/3 of Medicare patients have 2+ chronic condit

Analysis excludes maternity cases and hospital OP services except ER and observation

Care Coordination: A foundational activity

Care coordination and management can reduce avoidable hospital use, leading to better health outcomes and lower total spending. A three-step sequence can prove valuable: (1) an effective risk stratification approach to identify people with complex medical needs; (2) the development of health risk assessments to ascertain patients' needs; and (3) the formation of a patient-centric care profiles and plans addressing the medical and social needs of patients.

Care coordination and management holds the potential to avoid hospital use by reducing the likelihood and severity of deterioration and complications of chronic conditions by reducing modifiable risks, integrating care across the spectrum of providers, responding rapidly to changes in patients' conditions, and improving patient self-management and following treatment plans. We need to engage hospitals, physicians, and other providers, as well as payers, in an effort to provide care management at the local level, through regional cooperatives, or through a statewide care management program. CRISP can enable and support the healthcare community in Maryland and our region to appropriately and securely share data in order to facilitate care, reduce costs, and improve health outcomes.⁷

Risk stratification

Risk stratification is a systematic process of selecting patients who are at high risk for poor outcomes and high utilization, and for whom a particular care management program is equipped to mitigate the likelihood of that occurrence. It helps to match individuals to the appropriate type and intensity of care

⁷ David Horrocks. Presentation of CRISP Care Management Report. February 2015.

management resources. This involves prioritizing care coordination resources to patients most at risk.⁸ Having an algorithm to stratify patients according to risk is a key to the success of any population health management initiative.⁹

Health risk assessments

Health risk assessments (HRAs) are a collection of health-related data a medical provider can use to evaluate the health status and health risks of an individual. HRAs complement historical claims data to identify chronic diseases, injury risks, modifiable risk factors, and changing health needs. They reveal health behaviors and risk factors such as smoking, a lack of physical activities, and poor nutritional habits for which the medical provider can offer tailored feedback to reduce the potential inevitability of the diseases to which the risk factors are related.¹⁰

Section 4103 (b) of the Affordable Care Act states that for Medicare patients an HRA should be completed before or as a part of an annual wellness visit with a health professional who may be a physician, medical practitioner, health educator, dietician, or a team of medical professionals.

Core care coordination and management activities

There is frequently a lack of communication, consultation, and coordination when an individual has more than one medical provider, even when the primary care provider makes a direct referral to a specialist, therapist, social worker, or other professional. The broader the care team, the more this becomes a potential problem. Inadequate care coordination increases the likelihood of unnecessary duplication of services, medication errors, and other avoidable poor patient outcomes.

Important data to share include problem lists, prescription fill data, lab values, immunization records, and other information not typically available from claims data. This information can be shared after connecting records of ambulatory practices and other providers to a broader data infrastructure. The data will also facilitate dynamic risk-level modification as clinical status changes.

New Medicare Payments for Chronic Care Management

Effective January 1, 2015, Medicare made the most significant change ever to primary care payment when it introduced a non-visit-based payment for chronic care management (CCM). This change has the potential to align efforts of by providing a vehicle to better align primary care efforts and hospitals around the opportunity to improve chronic care and to reduce hospitalizations.¹¹

⁸ http://www.njafp.org/sites/ethos.njafp.org/files/risk_strat_peskin_distribution_final.pdf

⁹ <https://www.healthcatalyst.com/understanding-risk-stratification-comorbidities>

¹⁰ Paula Staley, Paul Strange, and Chelsey Richards. Centers for Disease Control and Prevention.

¹¹ CMS adopted a CPT code (99490), which is defined as “Chronic care management services, at least 20 minutes of clinical staff time directed by a physician or other qualified health care professional, per calendar month, with the following required elements: two or more chronic conditions expected to last 12 months, or until the death of the patient; chronic conditions place the patient at significant risk of death, acute exacerbation/decompensation, or functional decline; comprehensive care plan established, implemented, revised, or monitored.” For the first quarter of 2015, the national average monthly reimbursement was projected to be \$40.39. A provider cannot bill

CCM payments are a breakthrough in permitting Medicare to pay for non-face-to-face care management services such as medication reconciliation, coordination among providers, arrangements for social services, and remote patient monitoring.¹² Arranging for such services requires physicians' time as well as the time of office staff, administrative costs, and technology outlays. Prior to this new CMS billing code and payment system for care management, medical practices would have to absorb these costs without any reimbursement.

The new CCM payments create helpful incentives for physicians to coordinate with other medical providers and organizations providing complementary social services, fostering a more holistic and comprehensive approach to meeting patients' needs. CCM will provide more continuity of care for patients with complex needs and ongoing chronic conditions who might otherwise go from one episode of ED use and/or hospital admission to another, with little care management in between a series of complications.

Behavioral health integration

Despite a long history of treating physical health conditions separately from behavioral health, the two are inextricably linked. Many medical visits are for issues with a behavioral health component. A high proportion of adults with behavioral health conditions have one or more physical health issues. Having a chronic condition is a risk factor for having a behavioral health condition, and vice versa. Depression and anxiety in particular are common in primary care settings but are frequently inadequately identified and treated, making it more difficult to manage physical health conditions.

Patients with severe mental illness live from 10-20 years less than an otherwise matched cohort who do not have these conditions. This finding reported in June 2014 by researchers at Oxford University is based on 20 major studies covering 1.7 million people and 250,000 deaths.¹³

Our mental health system is crisis oriented, with resources concentrated heavily in institutions while shortages abound in community-based care. Patients with mental illness frequently touch not only the medical care system, but also the criminal justice system, the school system, and housing authorities. Yet, there is frequently scant coordination across these systems.

While physical and behavioral health care are intertwined, behavioral health is frequently walled off from the rest of the medical system. Co-locating services, behavioral health homes, PCPs screening for signs of mental illness, and behavioral health professionals recognizing the impact of their treatment on physical health with appropriate referrals are approaches to breaking down the silos.

for CCM until the provider has secured the patient's consent. (Pershing Yoakley and Associates [PYA]. "Providing and Billing Medicare for Chronic Care Management." Updated March 2015.)

¹² PYA., *supra*. p. 2.

¹³ Edward Cheney, Guy M. Goodwin, and Seena Fazel. Risks of all-cause and suicide mortality in mental disorders: a meta-review. *World Psychiatry* June 2014. Vol. 13, Issue 2:153-160.

Incorporation of social services into the delivery model

Successful care coordination must transcend the boundaries that separate the medical care system and our system of social supports and services. We have a sophisticated medical system capable of diagnosing and treating illness, improving quality of life and prolonging life expectancy. Yet, with an aging population, and socio-economic disparities, many of the needs of our high-risk population cannot be adequately addressed by a strict medical model.

For the elderly, particularly the “old-old” (e.g. people 85 years of age and older), these needs include fall risks, an unsafe home environment, a lack of transportation, social isolation, and inadequate nutrition. A recent study, for example, determined that social isolation is associated with earlier mortality among older people.¹⁴ The homeless population is at-risk for serious health problems, including worse outcomes for chronic diseases. Others live in “food deserts,” and have poor nutrition. About one of three Americans is obese, constituting one of the nation’s most serious health problems. Substance use and violence contribute to potentially avoidable visits to hospital emergency departments. Smoking, though decreasing, is highly dangerous to health.

Addressing these serious risk factors should be part of effective care plans. Effective interventions can include adult day care, meals-on-wheels, home inspections to identify and remove dangerous situations in the home, nutrition improvement programs, and transportation assistance.

An important challenge is to identify people who have not yet hit the acute care setting on a repeat basis but are at high risk of doing so. This group has diverse needs and circumstances. It includes people with multiple chronic illnesses who have not yet experienced serious complications from them but are vulnerable. Patients with diabetes, asthma, and hypertension, for example, may not have yet experienced diabetic shock, severe pulmonary complications, or a stroke, but are at risk of these serious events.

A homeless person may be struggling with drug and alcohol addiction, depression, hunger and malnutrition and perhaps undiagnosed heart disease. Hennepin Health in Minneapolis runs a pilot program for about 10,000 poor adults, mostly men, many homeless and a high incidence of substance abuse. A number of those participating once worked, are experiencing long-term unemployment, and would like to work again.¹⁵ Hennepin County got its Social Services department involved and workers helped people get phones and mailboxes, and take care of unpaid utility bills that could lead to insulin spoiling in non-functioning refrigerators and losing heating. A location for inebriated people to get sober instead of going to the ER has been started. The hospital, Hennepin County Medical Center, is paid a

¹⁴ Andrew Steptoe, Apna Shankar, Panayotes Demakakos, and Jane Wardle. Social isolation, loneliness, and all-cause mortality in older men and women. *Proceedings of the National Academy of Sciences*. 2014. Vol. 110, No. 15:5797-5801.

¹⁵ <http://www.hennepin.us/healthcare>

fixed amount per patient and can keep the savings if the help outside the medical model keeps the enrollees from using the hospital (an incentive in sync with the All-Payer Model Design).¹⁶

Health information technology can support care planning and coordination

HIT can facilitate communication between patients and clinicians, and provide information support to clinicians in real time as they are seeing patients. Functional interoperability with seamless integration in workflows is essential for broad use. This will make clinically relevant information available to hospitals, physicians, and other providers at the point of care.

A system that provides this information sharing can reduce prescribing errors, facilitate medication management, and ensure that treating providers have timely lab data, imaging results, allergy information, past medical and surgical history, and up-to-date patient problem lists. Procedures need to be developed to secure patient consent for the sharing of data for the purposes of care coordination.

Well planned transitions of care following hospital discharge

An important aspect of the fragmented care system described earlier is poorly managed transitions in care. Transitions occur among providers across the full continuum of care.

Hospital discharge presents one of the biggest threats to patients if not properly handled. Nearly one of five Medicare patients discharged from a hospital is readmitted in the 30 days following discharge. Maryland's rate of readmissions for Medicare patients is among the highest in the nation. Evidence-based care transition approaches can reduce readmissions. However, more comprehensive and integrated approaches, especially for high-needs patients, will need to be undertaken to improve success and make reductions of readmissions more sustainable.

Medicare pays for short-term skilled nursing and therapy services for patients recovering from acute illness, typically following a hospitalization provided by home health agencies, skilled nursing facilities, inpatient rehabilitation hospitals, and long-term care hospitals. In 2012, Medicare spending for these services totaled \$62 billion.¹⁷ Under the current All-Payer Model, Maryland hospitals are at risk for high readmissions. This provides an incentive for them to discharge patients to the most cost-effective, clinically appropriate setting.

Hospital discharge planning should start well before discharge, and should include educating patients to recognize early symptom of clinical deterioration, dietary instruction, medication management, referral to social services, and promoting self-management. The patient's plan of care for this episode of illness should be comprehensive and user-friendly. Timely home visits by nurses, nurse practitioners, or other providers can be an integral part of many care plans.

Another element of improving care transitions is for provider teams to follow patients across sites of care. When a patient is discharged to a skilled nursing facility, for example, the patient's primary care

¹⁶ Sabrina Tavernise. "Health Care Systems Try to Cut Costs by Aiding the Poor and Troubled." New York Times, March 22, 2015. http://www.nytimes.com/2015/03/23/health/taming-health-costs-by-keeping-high-maintenance-patients-out-of-the-hospital.html?emc=eta1&_r=0

¹⁷ Robert Mechanic. *N Engl J Med* 2014; 370:692-694. February 20, 2014.

physician and if possible specialist physicians treating the patient could either visit the patient in the new site, or at least be in steady contact with physicians and nurses who are treating the patient in the post-acute setting. In this way, providers who are very familiar with the patients' array of problems and full medical history can help ensure that the post-acute care experience is not completely isolated from earlier diagnosis and treatment.

Another element of continuity of care occurs when a patient leaves such post-acute care facilities and goes home. Some will need physical and occupational therapy. Home visits by medical professionals, social workers, or others can help educate the patient about medication adherence, fall risks, danger signals requiring immediate action, and the availability of a range of social services such as meals-on-wheels and adult day care.

Ingredients of successful care coordination approaches

A number of key ingredients of successful care coordination approaches emerge from research, demonstrations, and practice.

First, all patients should have a medical home, and specialist physicians and other providers should coordinate their work with each other and with that medical home. Immediate alerts should be sent to the patient's medical home when the patient goes to an emergency department and/or gets admitted to a hospital. The results of diagnostic tests such as imaging and lab work should also be reported promptly to the medical home independent of who ordered them. Embedding care coordinators in primary care practices with access to patients' electronic medical records has also emerged as an important element of successful care management strategies.

It is vital for hospitals and physicians to coordinate closely with post-acute and long-term care providers. Care coordinators should manage these transitions of care. Dedicated hospital contacts should be available 24 hours a day for long-term care and post-acute facility partners.

Care plans and care coordination

The patient (and other caregivers as appropriate) should participate along with physicians in creating a care plan designed to address the immediate problem he or she is facing. Patient education and engagement is important to the success of these care plans. The care coordinator should be responsible for helping carry out this care plan and have face-to-face interaction with the patient on a regular basis, supplemented by telephonic contacts.

The care coordinators should have direct interaction and develop a strong rapport with their patients' physicians through in-person contact with the physicians' offices or clinics. Care coordinators should act as a communications hub across the patient's providers, and between patients and their providers. Care managers should interact directly with patients during their hospital stays and physician office visits, be culturally competent, and have access to a pharmacist who can assist with medication management.

Care transitions

Smooth care transitions are very important, particularly from hospitals to post-acute and long-term care settings. Staff members such as a post-acute nurse liaison should be integrated between hospitals and

long-term and post-acute facilities, to reduce readmissions. Engaging trusted community partners (e.g. community-based organizations, faith-based organizations) can also contribute to success by addressing non-medical health factors and building community interest and support.

Care management costs

Care management costs should be controlled to the extent possible, through such strategies as ensuring that staff work at the top of their training, and incorporating the services of non-RN and non-LSW staff for patients with less complicated conditions. At least a portion of care management fees can be placed “at risk,” depending on the achievement of improved outcomes.

In order to achieve a positive return on investment, care coordination resources should be focused on the highest-risk individuals.

There are many examples of promising programs illustrating these key ingredients.¹⁸ Many of these ingredients of success will be easier to achieve in integrated care networks. Thus, delivery system reform can be supportive of care coordination.

Data Acquisition and Use

Success for Maryland will require hospitals, community-based providers, long-term care facilities, and post-acute care providers to work together to effectively coordinate patient care, reducing the need for hospitalizations. Data sharing and data analytics are foundational requirements for this effective care coordination.

To that end, the Care Coordination work group looked comprehensively at data sources, uses, and processes, and developed opportunities for Maryland to invest in care coordination. The Work Group identified opportunities at the state, regional, and local level, as well as associated implementation strategies, including addressing data privacy and participation choice. For example, the Work Group concluded that building a secure data infrastructure to facilitate the identification of individuals who would benefit from care coordination and developing Health Risk Assessments and Care Profiles for such patients would best be undertaken on a statewide basis. In similar fashion, the Work Group also felt that standardizing elements in hospital discharge summaries and facilitating care integration between hospitals and post-acute care and long-term care would best be done at a statewide level, as would a campaign to encourage individuals to participate in care plans and an effort to connect community providers to CRISP.

¹⁸ A stand-out demonstration with excellent results has been conducted in Southeast Pennsylvania by Health Quality Partners. This program relies heavily on home visits to targeted high-needs Medicare patients, focusing on patients with congestive heart failure, coronary artery disease, or chronic obstructive pulmonary disease, and who had at least one hospitalization in the year prior to enrollment. The high-risk group comprised 14% of HQP's enrollees. These high-risk enrollees experienced 39% fewer hospitalizations than corresponding control group enrollees in a study conducted by Mathematica. After including care management costs, the net monthly expenditures for HQP's treatment group were \$397 lower than those for the matched control group, a statistically significant net Medicare savings. (Jennifer Schore, Deborah Peikes, Greg Peterson, Angela Gerolamo, and Randall Brown. Fourth Report to Congress on the Evaluation of the Medicare Coordinated Care Demonstration. Mathematica 6555-440. March 2011).

Activities such as developing processes to avoid duplication of resources across provider systems and facilitating somatic and behavioral health integration would best be led at the regional and local levels.

Table 1, extracted from the full table shown in Appendix A, outlines the Work Group recommendations:

Table 1: Recommended Investments in Care Coordination (including non-data investments)

Activity
A. Build/secure a data infrastructure to facilitate identification of individuals who would benefit from care coordination. High-level goal: To secure, organize, synthesize, and share data that will support care coordination.
1. Top priority: Develop procedures and policies to secure patient consent for the sharing of data for purposes of care coordination.
2. Top Priority: Combine existing data sources for the purpose of identifying individuals who would benefit from care coordination.
3. Top Priority: Secure new data sources. Specifically, request the use of Medicare patient-level data for the purpose of identifying individuals who would benefit from care coordination and chronic care management.
4. Engage CRISP to contract with a qualified vendor to store, clean, and normalize the Medicare data and other Medicare related data sets Maryland may be able to obtain.
5. Use data to identify individuals who would benefit from care coordination and chronic care management; use alert mechanisms to connect these patients to the physicians and hospitals who care for them (e.g. alerts to PCPs when their patients are in the ED or admitted to the hospital).
B. Encourage patient-centered care. High-level goal: Identify standard elements of care profiles that can be shared; propose future standards for the creation of Individualized Care Profiles.
1. Top priority: Provide resources for an effort to design patient care profiles; make these profiles readily visible: In sum, care profiles should be “doable and viewable.” Standardize elements needed in care profiles; assess extent to which these profiles are being used.
2. Standardize health risk assessment elements
3. Standardize elements in discharge summaries to aid transitions to long-term and post-acute care (LTPAC) providers as well as home-based settings.
4. Develop approach to identify patients with care plans through CRISP, together with identification of care managers and providers. Set up process for learning, monitoring, and managing the system to determine the effectiveness of this effort over time, and make needed adjustments.
C. Encourage patient engagement.
1. Lead a state-level campaign to encourage individuals to 1) participate in care plans and 2) complete and share medical orders for life sustaining treatment.
2. Educate patients about care coordination resources and opportunities.
D. Encourage collaboration.
1. Top priority: Facilitate physical and behavioral health integration.
2. Top Priority: Facilitate care integration between hospitals and long-term care/ post-acute services
3. Facilitate collaborative relationships among providers, patient advocates, public health agencies, faith-based initiatives and others with a particular focus on resource planning, resource coordination, and training.
4. Develop processes to avoid duplication of resources across provider systems, including coordination of resources for health risk assessments.
5. Support practice transformation through technical assistance and dissemination of information on best practices.
6. Top priority: Create standard gain sharing and pay for performance programs.
7. Encourage providers to take advantage of new Medicare Chronic Care Management payments

Activity
E. Connect providers.
1. Call on CRISP to connect community-based providers to CRISP.
2. Call on CRISP to connect long-term and post- acute providers (LTPAC) to CRISP. Develop approaches to meet needs of LTPAC.
3. Purchase/develop applications to facilitate interoperability among providers' EMRs to make clinically relevant information available to providers
4. Coordinate the effort to use Medicare data with initiatives to use EMR data, information on high-needs patients in Medicaid and private plans for population health and outcomes measurement.

Data Acquisition and Analysis

Establishing the data infrastructure necessary to support Maryland's efforts is a significant undertaking. The Work Group thought these efforts would be best pursued through statewide efforts that could be brought to scale efficiently. While data and technology infrastructure are essential parts of Maryland's strategy, they are not sufficient to achieve the goals of the new model. Regional and local planning efforts will be needed to identify how to collaborate on data sharing, workforce and other efforts. Colorado's Regional Care Collaborative Organization (RCCO) and San Diego's Care Transitions Partnership are examples of this type of regional collaboration to transform the health care delivery system, smooth transitions of care, reduce spending, and improve performance.

A Two-Track Approach

Maryland policymakers, hospitals and other providers are focused on first implementing strategies to coordinate the care of higher-risk patients in the Medicare fee-for-service population. Effective care coordination will require collaboration among hospitals, health systems, independent providers, and community-based organizations. Most Medicare high- utilizers are using multiple hospitals, multiple doctors and many prescriptions. In most instances a single hospital will not have a comprehensive understanding of a patient's prior utilization, medical conditions, and opportunities to improve care through targeted care coordination initiatives. Consequently, access to meaningful, actionable data is one important tool to achieve effective care coordination. In order to obtain the necessary data, a two-track approach that uses data to inform and support care coordination is advisable.

1. Capitalize on Existing Data Sources

First, *existing data sources* could be used to identify patients with the most complex medical needs that are already frequent hospital utilizers. This would include data currently available through CRISP, such as real time Hospital Administrative, Discharge, and Transfer (ADT) data, hospital inpatient and outpatient data available on a monthly basis through the HSCRC abstract, and other clinical data available through CRISP. The new use of existing data requires a thorough understanding and modification of data use agreements and privacy policies. Additionally, other sources of data should be evaluated for possible use in these efforts, including: pharmacy data obtained from pharmacy benefit managers (PBMs), Outcome and Assessment Information Set (OASIS) data on home care, Minimum Data Set (MDS) records on nursing home care, and other information sources. It is also important to use clinical data such as

prescribed medications, medication lists, problem lists, lab values, and immunization records. *This work could begin immediately, and CRISP could take the lead in this effort.* (Indeed, CRISP has started this work and is exchanging ideas with innovative HIEs in other parts of the country.)

2. Request Medicare Data from CMS

Moving down a parallel track, *Maryland should take steps as soon as possible to acquire Medicare claims data under its existing CMMI grant.* The federal government's agreement with Maryland recognizes that providers will need access to patient-level Medicare data to implement strategies to meet the goals of the All Payer agreement. Specifically, claims data will be helpful in attributing patients, refining risk models and reporting, particularly to inform gain sharing.

In order to obtain this data, initial efforts should focus on working with the CMMI Demonstration Project Manager to request an amendment that includes care coordination as a part of the demonstration. Once the demonstration is amended to include care coordination, Maryland's existing Data Use Agreement (DUA) will allow the State to obtain the requested data. According to Maryland's All Payer Model Agreement:

*"CMS is willing to accept data requests from the State or its agents for **data necessary to achieve the purposes of the Model**. Such data could include de-identified (by patient or by provider) data or individually identifiable health information such as claims level data. All such requests for individually-identifiable health information must clearly state the HIPAA basis¹⁹ for requested disclosure. CMS will make best efforts to approve, deny or request additional information within 30 calendar days of receipt. Appropriate privacy and security protections will be required for any data disclosed under this Model."*

The next step is to create a detailed request to CMS for Medicare data to support care coordination that will include:

- Description of the purpose of the data (purpose is defined by demonstration agreement)
- Specific data, data files and timing requested
- Description of how the data will be used and shared for the purpose of care coordination
- Description of privacy and security protections that will be in place

The Maryland Hospital Association can coordinate with hospitals to make a special request to CMS, in concert with the State, for access to Medicare data to support care coordination and chronic care management. The demonstration contract is between CMS and the collective State of Maryland, which includes the Governor, the Department of Health and Mental Hygiene, and the Health Services Cost Review Commission ("HSCRC"). However, the hospitals are also bound to the demonstration project through state law, which means that providers need to fully support and comply with the acquisition and use of the data. The State should obtain any necessary legal advice from its Demonstration project manager as it moves through the process.

¹⁹ Care coordination is a valid HIPAA basis for individually-identifiable health data.

Finally, we need to identify and hire a vendor or vendors to:

- a) Manipulate and link Medicare, CRISP, clinical and other data for the purpose of attribution, risk stratification, care plans and analysis for continuous improvement
- b) Act as the central repository of this data
- c) Have the capability to push meaningful, actionable data to the provider community
- d) Maintain privacy and security protections

In order to select the ideal vendor(s) able to manipulate, link, and provide meaningful, actionable data to the provider community, the CRISP board of directors needs to establish an expert committee to address technical questions and select vendors. Working through the CRISP structure will also ensure coordination between Medicare data analytics and use of existing data sources.

Although other types of tools are also needed for care coordination, the focus of this recommendation involves obtaining data following this dual-track approach. *The two complementary efforts will give the delivery system in Maryland an unprecedented opportunity to serve its patients.*

3. Plan for the sharing of other data sources

Several other data sources are critical to realizing a shared care plan that is meaningful in high-risk patients. These include:

- Ambulatory EMRs
- Behavioral health provider information
- Long term care facility information
- Other data from community providers and public health that will assist in care coordination and planning

Connecting to ambulatory providers and long-term care facilities is identified as the initial action step. The expert committee should select vendors for this important step that also have the ability to connect to the other data sources. The privacy and security environment should be developed with consideration for the range of likely data sources in the near future. This effort could be aided by two federal funding opportunities being pursued together by CRISP and MHCC.

Data sharing must be done in the context of strong procedures and policies to secure patient consent for the specific purpose of care coordination.

Summary and Recommendations

Many promising models of care coordination have emerged in recent years, though we have also learned that interventions that are not risk-tiered and managed with excellence do not improve patient outcomes, service use, or net spending.

A number of guides and clues to successful care coordination emerge from demonstrations and research studies. Care coordinators working closely with physicians and having face-to-face contact with patients, timely alerts to primary care physicians when patients are in the ED or hospital, careful medication management, behavioral health integration, smooth transitions of care, data sharing, and including social services in care plans are among the important ingredients of success. These ingredients of successful care coordination will be easier to achieve with delivery system reform featuring integrated care networks.

As immediate next steps, the Care Coordination Work Group recommends the following:

1. Refine data use agreements and enhance data privacy procedures.
2. Build/secure a data infrastructure to facilitate identification of individuals who would benefit most from care coordination (risk stratification).
3. Encourage patient-centered care through the development of common Care Plan data elements.
4. Promote patient engagement with various strategies, including patient ability to view data.
5. Encourage collaboration, including through facilitated communications regarding patients.
6. Connect providers to the data infrastructure, particularly non-hospital providers.

The Care Coordination Work Group recommends that Maryland develop a carefully coordinated initiative to put data already in hand, or readily available, to use in care coordination. A CRISP-convened expert committee can accomplish this in an organized, collaborative fashion.

In parallel, we recommend that Maryland gain access to Medicare data for the purposes of collaborative care coordination. A plan needs to be developed with sufficient detail to make the case to CMS that Maryland hospitals, physicians, and other providers should be granted access to Medicare data for care coordination purposes, consistent with the goals of the new all payer model, similar to ACOs and numerous other Medicare demonstrations.