Minnesota Health Care Home Care Coordination Cost Study

FINAL
SUMMARY REPORT

Prepared for:

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MINNESOTA ACCOUNTABLE HEALTH MODEL   **shadac** STATE HEALTH ACCESS DATA ASSISTANCE CENTER

KEY FINDINGS

Minnesota's HCH program, administered by the Minnesota Department of Health (MDH), is aimed at developing patient-centered, team-based care that links the medical component of primary care to wellness, prevention, self-management, and community services. The Minnesota Departments of Human Services and Health (DHS and MDH) contracted with the State Health Access Data Assistance Center (SHADAC) at the University of Minnesota to conduct a study of the costs of HCH care coordination for adults. In order to estimate the cost of care coordination, SHADAC used a case study approach and developed a list of activities (or "ingredients") that define care coordination and collected information about the costs associated with each of these activities at six non-acute, primary care clinics. Key findings include:

- Costs for care coordination were significant and varied considerably across the sites, from $1 to $12 per HCH adult panel in a typical month.

- Variation in clinic care coordination costs is due, primarily, to the number of hours devoted to care coordination and the credentials and wages of staff who performed care coordination activities.

- Our discussions with clinic personnel suggest that mental health diagnoses and/or multiple chronic diseases drive care coordination costs. In addition, staff report that a wide variety of non-clinical patient characteristics (most related to socioeconomic status) drive care coordination costs. These included language barriers, homelessness or poor housing, food insecurity, and lack of transportation.

- Clinics appreciated the flexibility afforded by the HCH model design to operationalize certification standards according to clinic and patient needs.

- All of the clinics in the study describe their whole panel as being "part of the HCH," and they reported spending time across the whole panel to identify potential candidates for care coordination. They focus care coordination activities (defined for this study as care coordination outside of usual, quality care delivery) on the higher-need segment of the clinic's panel.

- Common approaches to HCH care coordination activities include informal, provider-driven referral to care coordination services; a team-based approach to providing care coordination; integrating care coordination into pre-defined clinic workflows; and the importance of demonstrating the value of care coordination to providers.

- Across the board, staff reported the high value of care coordination to the patients. Many noted that it improved the efficiency of care delivery and likely saved costs and resources.

The case study methodology used in this study was selected because of the variation in clinic structure, patient population, approach to HCH program design, etc., across study sites. The case study approach is best able to capture and contextualize important variations across sites. A primary limitation of this approach, however, is that it restricts our ability to generalize findings across sites and primary care clinics in Minnesota more broadly. We recommend that study findings be used not to determine reimbursement rates, but rather to provide additional context for the ongoing discussion about

modifying and improving reimbursement for HCH services. Future research in this area could include the identification of promising practices across clinic sites and the development of methods and data collection strategies that clinics and systems can undertake to quantify cost savings related to care coordination.

INTRODUCTION

Care coordination is identified by the Institute of Medicine as an important factor for improving the quality of health care. In Minnesota, care coordination is central to a number of key payment and care delivery reform programs, including health care homes (HCH), integrated health partnerships (IHPs), behavioral health home services (BHHs), and many components of the state's State Innovation Model (SIM) initiative.

Minnesota's HCH program, administered by the Minnesota Department of Health (MDH), is aimed at developing patient-centered, team-based care that links the medical component of primary care to wellness, prevention, self-management, and community services. At the heart of the HCH program is care coordination, which AHRQ defines as "meeting patient needs and preferences in a planned way in the delivery of high-quality, high-value care."[1, 2] An expectation of the program is that it is a population health initiative. Every patient is part of the clinic's HCH, and clinics are responsible for determining which patients need care coordination and are eligible for payment (see below). The certification process is free and voluntary, and while a system, clinic, or department within a clinic can apply for certification, the certifying entity is a provider (physician, nurse practitioner, or physician assistant).

Health Care Home certified providers can claim reimbursement for the subset of their panel that receives care coordination services. This is done monthly for each eligible recipient, and the payment varies based on patient complexity. Patient complexity is determined using the Care Coordination Tier Assignment Tool,[3] which classifies patients based on whether they have chronic conditions, the severity of those conditions, and whether they require a care team. Based on their score using the Care Coordination Tier Assignment Tool, patients are grouped into one of four tiers: Tier 1: 1–3 major condition groups; Tier 2: 4–6 major condition groups; Tier 3: 7–9 major condition groups; and Tier 4: 10 or more major condition groups. In addition, patients are assessed in terms of whether they have one of two non-medical "supplemental" complexity factors, whether they are non-English speaking or have an active major mental illness. Regardless of their medical complexity, if a patient has one or more of these supplemental factors, the clinic can claim reimbursement for them under the HCH program.

There are a number of current issues related to care coordination payment and reimbursement in the state. For example, there are questions about whether HCH reimbursements are sufficient to cover

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[1] McDonald, K., Schultz, E., Albin, L., Pineda, N., Lonhart, J., Sundaram, V., Smith-Sprangler, C., Brustrom, J., Malcolm, E., Rohn, L., Davies., S. (2014). Care Coordination Measures Atlas. *Agency for Healthcare Research and Quality.* AHRQ Publication No. 14-0037-EF.
[2] Agency for Healthcare Research and Quality. (2016). Care Coordination Quality Measure for Primary Care (CCQM-PC). *Agency for Healthcare Research and Quality.* AHRQ Publication No. 16-0042-1-EF.
[3] Minnesota Department of Health. (2016). Care Coordination Tier Assignment Tool, Version 1.0: Health Care Home Initiative. *Minnesota Department of Health.* Feb. 2016. Web. 12 Dec. 2017.

necessary investments in team-based care, workflows, information technology (IT) modifications, and registries.

In order to inform future programming, payer engagement, and reimbursement policy, Minnesota Departments of Human Services and Health (DHS and MDH) contracted with the State Health Access Data Assistance Center (SHADAC) at the University of Minnesota to conduct a study of the costs of HCH care coordination for adults.

Using a case-study approach, the study targets six non-acute primary care clinics in Minnesota that are HCH certified. Single- or multiple-case studies as an evaluation method are used most often when the work is highly descriptive and when context is important.[4] Given the variation in clinic structure, patient population, approach to HCH program design, etc., this methodology seemed best able to capture and contextualize important variations across sites. A primary limitation of this approach, however, is that it restricts our ability to generalize findings across sites and primary care clinics in Minnesota more broadly. We recommend that study findings be used not to determine reimbursement rates, but rather to provide additional context for the ongoing discussion about modifying and improving reimbursement for HCH services.

In order to estimate the cost of care coordination, the study team used an "ingredients method." Specifically, the study team developed a list of activities (or "ingredients") that define care coordination and grouped them into nine categories of care coordination activities. We then collected information about the costs associated with each of these activities. At each site, the research team conducted interviews with key state HCH and clinic staff and reviewed clinic documents to identify the care coordination approach used by the clinic and the staff involved with care coordination activities. Next, we developed a customized cost and time tool, which clinic staff used to estimate the number of hours spent by staff in each activity category. Finally, we requested average fully-loaded hourly wage rates by staff category (e.g., providers, which are defined as Medical Doctor [MD], Nurse Practitioner [NP], Physician Assistant [PA], and Certified Nurse-Midwives [CNM] for the purposes of this study) and information on relevant non-personnel costs. Data collection took place between spring and fall of 2017. Additional information on the study methodology, including a full list of detailed activities included in the each of the nine care coordination categories, is included in Appendices A and B.

This study is part of a $45 million State Innovation Model (SIM) cooperative agreement, awarded to the Minnesota Department of Human Services (DHS) in 2013 by the Center for Medicare and Medicaid Innovation (CMMI) to help implement the Minnesota Accountable Health Model. SHADAC is conducting the study in collaboration with both DHS and MDH. Below, we summarize care coordination across the six study sites. First, we provide a description of the clinics. Next, we discuss the time and resources the clinics devote to care coordination activities and their perceptions of care coordination cost drivers. The next two sections outline variation and commonalities in how the sites' staff and approach care coordination. We close with a discussion of the clinic perceptions of the value of care coordination.

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[4] Yin, Robert K. "Enhancing the Quality of Case Studies in Health Services Research." *Health Services Research* Dec. 1999: 1209. *Expanded Academic ASAP*. Web. 12 May 2016.

Summary of Study Sites

A primary aim of this study was to include a diverse group of primary care clinics throughout Minnesota. Sites were limited to non-acute, primary care clinics that are either HCH or patient-centered medical home (PCMH) certified. In selecting clinic sites, we sought to include a mix of urban and rural settings, a Federally Qualified Health Center (FQHC), and clinics participating in the state's Medicaid ACO program (the IHP model). We also considered whether clinics billed for HCH. More than 30 sites were initially considered for the study and were evaluated based on location, size, and care coordination model, among other factors. The final list of six clinics was selected in consultation with leadership at MDH and DHS and with feedback from the HCH nurse planners, who work closely with clinic staff to administer the program.

As is shown in **Table 1,** the final case study sites (de-identified) are in five of the eight HCH regions and include a mix of urban and rural clinic locations. Their HCH panel sizes, which refer to the number of adult patients on a clinic's panel in a given year, range from a low of approximately 6,000 patients to a high of approximately 29,000 patients. There is also variation in the number of patients who have been identified by the clinic as needing active care coordination, from 50 in Site E to 170 in Site B. All sites have been HCH-certified for at least three years, and half of the sites participate in an IHP. Five of the six clinics were able to participate in the entire study. Site F was unable to provide information on cost and time. Findings from this site are included in the narrative portions of the report only.

Table 1: Summary of Minnesota HCH Care Coordination Cost Study Sites

Characteristic	Site A	Site B	Site C	Site D	Site E	Site F
Clinic Description (Department Studied)	Multispecialty clinic	Family medicine clinic	Primary care (Internal Medicine)	Primary care, community clinic	FQHC	Primary care clinic
IHP Participation	No	Yes	Yes	No	Yes	No
HCH Panel Size	28,800	17,900	6,300	22,900	8,900	9,100
Number of Patients Actively Care Coordinated	100	170	80	340	50	60
HCH Certification	2014	2011	2013	2010	2015	2015
Certified Providers	24 (MD/NP/CNM)	10 (MD/NP)	6 (MD/NP/PA)	10 (MD/NP/PA)	7 (MD/NP)	9 (MD/PA)
Care Coordinator Credentials (FTEs)	RN (2.7 FTE)	LPN (1.7 FTE)	RN (.9 FTE)	RN and LICSW (2 FTE)	Non-medical (1 FTE)	RN (1 FTE)
HCH Region	West Central	Central	South Central	Metro	Metro	Northeast
Urbanicity	Rural	Rural	Urban	Urban	Urban	Urban
Bills for HCH	Yes	No	Yes	No	Yes	Yes

Sources: Site-reported panel size (2016 or 2017), number of patients actively care coordinated, and billing information. Minnesota HCH program documentation and website.

Note: All of the sites are affiliated with a system.

TIME AND RESOURCES FOR CARE COORDINATION

In this section, we present findings across the six study sites in terms of the total hours and total dollars associated with HCH care coordination. Quantitative findings suggest wide variability across sites in terms of resources devoted to care coordination in a given month. We also summarize staff perceptions about what factors may influence the need for care coordination, where there appeared to be more consistency across clinic sites.

Per our study methodology, the hours and costs presented below represent effort directed at the limited, higher-need segment of the clinic's panel identified as needing care coordination services**.** All of the clinics in the study describe their whole panel as being "part of the HCH," and they reported spending time across the whole panel to identify potential candidates for care coordination, but they focus care coordination activities on patients who need "intense care coordination." Most of the sites described this group as being fluid, and they noted that their primary goal is to help people "graduate" into full self-management. Regardless of whether the clinic formally enrolled patients and billed for the service, all had a good sense for how many patients were part of their "care coordinated panel" (also described as "HCH caseload" and "care managed population"). In addition, we emphasized during data collection that we were gathering information on the clinic's delivery of and investments in care coordination, specifically, and not usual, quality care delivery.

In **Tables 2 and 3,** we provide estimates of the total costs and hours that clinics reported were spent on care coordination for their identified adult population in a typical month. As noted, Site F was unable to provide information on cost and time. Findings from this site are included in the narrative portions of the report, but associated hours and cost are not reported. In **Table 2**, we provide the total HCH panel size, the number of patients actively care coordinated at the time of data collection (this population is fluid), the MDH HCH patient acuity tiering for this population, the estimated cost of care coordination in a typical month, and the cost of care coordination per member of the HCH panel. In **Table 3**, we provide clinic estimates of total hours and a distribution of hours by staff category.

The two tables together highlight the fact that reported cost appears to be driven not only by total hours but also by panel size and the credentials and wages of the staff who performed care coordination activities. For example, Sites C and E both reported that more than 1,000 hours are spent on care coordination in a given month, but their associated costs are quite different ($68,800 versus $31,500). The cost differential is driven by two factors. First, in site C, more than 40% (476 hours) of the hours are attributed to providers, who have the highest wages across staff categories. In addition, Site C employs an RN Care Coordinator who has a high-acuity panel, while Site E employs a Care Coordinator who is not clinically credentialed (and attends to lower-acuity patient panel and also has a lower wage rate). One important aspect of the HCH model is this flexibility to hire care coordinators with credentials that best meet each site's unique patient needs.

It is important to note that Site A is an outlier in several ways. It reports the largest HCH panel (28,900) and the largest number of hours devoted to care coordination activities in a given month (5,541—more than four times higher than any other site). These factors, as well as the large number of hours (about

2,000, representing 36% of total hours) that are attributed to providers, contribute to the high cost of care coordination ($353,000).

It is also important to note that other factors which we were not able to quantify in this study likely contribute to the variation in costs we observed across clinic sites. For example, although we used standardized interview protocols and data collection tools, the data are self-reported and reflect not only the specific models in place at each clinic but also staff interpretations of how those models are operationalized. For example, while the clinics in this study reported relatively small care coordinated panels, it is possible that other clinics focus care coordination activities on a broader group of patients, thus impacting time and resources spent on care coordination. Another possibility is that some clinics may have considered care coordination services as part of a broader set of activities that another clinic may consider part of usual, high-quality care delivery. As mentioned previously, we recommend that study findings be used not to determine reimbursement rates, but rather to provide additional context to the ongoing discussion about modifying and improving reimbursement for HCH services.

Table 2: HCH Care Coordinated Population and Cost in a Typical Month

Costs	Site A	Site B	Site C	Site D	Site E
HCH Panel Size	28,900	17,900	6,300	22,900	8,900
Number of Patients Actively Care Coordinated	100	170	80	340	50
MDH HCH Patient Acuity Tiering	Primarily 1s and 2s	Primarily 3s and 4s	Primarily 4s	Not available	Primarily 1s and 2s
Cost of Care Coordination	$353,500	$17,000	$68,800	$20,000	$31,500
Cost of Care Coordination per HCH Panel (*rounded*)	$12	$1	$11	$1	$4

Sources: Site-reported data on hours and wages. Average wage data from the MN Department of Employment and Economic Development (DEED) used when site was unable to provide data for a specific position (https://apps.deed.state.mn.us/lmi/cpt/Search). Average wages from DEED were inflated by 30% to account for the costs of benefits.

Notes: Cost of care coordination is total care coordination hours multiplied by the average loaded hourly rate for each staff category providing care coordination services. Non-personnel costs are included in the cost estimate, but they accounted for less than 1% of the total care coordination costs in a given month. Higher numbers reflect high patient acuity/illness burden in the MDH HCH tiering.

Table 3: Distribution of HCH Care Coordination Hours in a Typical Month, by Staff Category

	Site A	Site B	Site C	Site D	Site E
Care Coordinator	432	176	148	327	154
Provider (MD/NP/CNM/PA)	1,997	100	476	20	190
Nurse	1,285	133	384	5	317
CHW	-	52	-	-	-
Social Worker	35	5	72	-	-
Medical Assistant	-	-	-	-	75
HCH/CCC Supervisor	160	-	44	-	19
Clerical	1,285	4	1	3	134
Other	347	6	27	21	203

	Site A	Site B	Site C	Site D	Site E
Total	5,541	476	1,152	376	1,092

Source: Site-reported data.

Clinic Perceptions of Care Coordination Cost Drivers

Across our interviews, staff noted that both clinical and non-clinical issues drive the need for more intensive care coordination.

Staff frequently noted that patients with mental health diagnoses drive the need for intense care coordination. One Care Coordinator cited mental health issues as a primary driver of no-shows, calls that are not returned, and a lack of follow-through on plans of care. She explained that sometimes, these mental health issues are driven by physical health disorders: "When people have certain diseases or conditions, it either motivates them to engage in their care or it has a detrimental effect. They think 'well, I'm going to die anyway, or I'm going to get worse anyway.' There's a lot of just avoidance. It can be really frustrating when you spend literally hours or days or weeks trying to plan something or work with a person [on a plan of care] and they just don't do it." She explained that she has gone so far as to meet her patients at the mental health provider's office, just so they will see a friendly face when they arrive. A Care Coordinator at another site also explained that she spends a considerable amount of time trying to find affordable mental health services nearby (particularly intensive psychiatric services) for patients who need them.

Staff at all of the sites also cited multiple diagnoses and/or multiple chronic diseases as a driver of care coordination costs. One Care Coordinator explained, "I have patients with multiple diseases at the same time, nephrology, cardiology, psychiatry … this is like three systems playing together, there are a huge number of specialists and a huge, huge number of external care providers outside of the clinic." In other clinics, staff noted that new or recurring cancer diagnoses in the elderly population also drive care coordination intensity, with efforts targeted at managing side effects from intense chemotherapy in order to avoid hospitalizations.

Staff listed a wide variety of non-clinical patient characteristics that can drive the cost of care coordination—most of which are related to socioeconomic status. These included language barriers, homelessness or poor housing, food insecurity, lack of transportation, financial barriers, low education/literacy, and lack of social supports. Staff at every clinic had an example of non-clinical factors that drove the need for intense care coordination, some of which are described below.

One Care Coordinator explained that she spends a lot of time focused on literacy assessment, which is often overlooked by the medical community: "When I worked as a Clinical Assistant, I saw a patient for seven years before I realized he couldn't read. He never mentioned this to the provider and he never mentioned this to me. You'd give him a piece of paper, he'd look at it, I'd think he's reading it—but he wasn't." She now performs a literacy assessment on all care coordinated patients, and this is documented in each care plan.

Several Care Coordinators noted working with patients to assess food assistance needs and housing status. One described a diabetic patient who had a good job and health insurance but worked at a gas station, an environment that made it difficult for her to eat healthily and quit smoking. The Care Coordinator helped this patient work on her résumé, which resulted in a new job and better self-care. Staff at another clinic explained that simple changes in a patient's living situation can also drive care coordination intensity. One provider pointed to a specific example of a patient that had recently moved, and there was a sudden spike in emergency department utilization: "Mild dementia, nephrolithiasis, chronic kidney disease, diabetes—you name it, he's got it. And his wife does all of his care. When I asked her where they lived, her first sentence was, 'it's so nice because we're so close to the emergency room now.' That was a red flag for me obviously."

Income was also mentioned as a factor associated with care management costs. One Manager of Care Coordinators noted, for example, that Medical Assistance patients do not pay to go to the Emergency Department (ED), but they do have to pay a clinic copay. She explained that it can be time-consuming and difficult to help them understand how best to seek services: "The outcome to them is the same. Even a 3 dollar copay is a barrier for some. And affecting [ED] utilization can be difficult. We have seen some stabilization in hospital stays, but it is difficult to impact ED utilization."

Not surprisingly, staff reported that it is the combination of medical and social issues that results in the most resource-intensive care coordination. Social work staff at one site explained, "Every person's situation is unique, and care coordination takes each person's history into account. Complex medical conditions are often combined with complex social issues. If you can't afford food, you don't care what kind of food you are eating. If you can't get to [the] pharmacy, you don't take your meds. Issues related to the bio-psychosocial are so complex."

VARIATION IN CARE COORDINATION STAFFING MODELS

While the HCH program is fairly structured, there is flexibility built into the certification process to encourage experimentation and innovation. According to MDH, the HCH standards are "a road map to implementation." Specific staffing models, workflows, and processes are designed by providers and clinics to meet those standards while also addressing the needs of their unique patient populations. Across our interviews, staff praised the flexibility of the HCH program. A Manager of Care Coordinators said, "There are different models of care coordination. And that's been the beauty of Health Care Home program, [the clinic] can create the model of care that works for your organization or system." Evidence of this flexibility can be seen in the variety of care coordination staffing models clinics reported.

Table 4 summarizes the staff involved in care coordination across each study site. Regarding the Care Coordinators, clinics ranged from staffing one Care Coordinator FTE to three Care Coordinator FTEs. Care coordinator caseloads for their identified adult population ranged from approximately 40 to 170. There was variation across clinics in the credentials of Care Coordinators. In four of the six study sites (Sites A, C, D, and F), Care Coordinators were licensed Registered Nurses (RN). One of these sites reported having both an RN and a Licensed Independent Clinical Social Worker (LICSW) in the Care Coordinator role. The fifth site (Site B) employed a Licensed Practical Nurse (LPN), and the Care

Coordinator at the sixth site (Site E) is not clinically licensed (though she formerly worked as a licensed radiation therapist).

Care coordination credentialing also varied across clinics in the same system. For example, one of the systems reported that all of its care coordinators were RNs, while another employed Care Coordinators with a range of credentials (LPNs, RNs, Certified Medical Assistants, and social workers) depending on specific clinic needs and patient populations. The Manager of Care Coordinators explained that the educational background of Care Coordinators in this system is both clinical (LPNs and CMAs) and non-clinical (Bachelor's degree in Healthcare Management and Psychology): "It's really just about fit. It's about personality. Because not every personality is going to work at every clinic with the staff and the doctors."

Table 4: Staff Providing HCH Care Coordination Services in a Typical Month

Staff Category	Site A	Site B	Site C	Site D	Site E	Site F
Care Coordinator	X	X	X	X	X	X
CC Credentials	*RN*	*LPN*	*RN*	*RN and LICSW*	*Non-medical*	*RN*
Provider (MD/NP/CNM/PA)	X	X	X	X	X	X
Nurse	X	X	X	X	X	X
Social Worker	X	X	X	n/a	n/a	n/a
Medical Assistant	n/a	n/a	n/a	n/a	X	n/a
HCH/CCC Supervisor	X	X	X	X	X	X
Clerical	X	X	n/a	X	X	X
Management	X	n/a	X	X	n/a	n/a
Other	X	X	X	X	X	X

Source: Site-reported data

Notes: "n/a" refers to not applicable to this site. Clerical staff includes Patient Services and Access Representatives, Registration/Front Desk staff, Patient Advocates, and Account Specialists. Management staff includes Nurse Supervisors, Department Managers, Nurse Managers, and Clinical Directors. Other includes a broad range of staff, including Diabetes Educator, Medication Refill RN, public health, Dietician, MTM Pharmacist, and Anti-coagulation Education.

In terms of the broader group of staff providing care coordination services, in addition to the Care Coordinator, all clinics reported that providers and nurses provided care coordination services. In addition, all sites had a staff person serving as a HCH lead (for most clinics, these staff also managed the Care Coordinators) who typically led certification efforts, managed documentation, and provided strategic direction to the HCH care coordination program.

Outside this core group, there was considerable variation in what other types of staff clinics reported as being involved in care coordination. Two of the six sites employed social workers who were not classified as care coordinators but provided important care coordination services—particularly assisting with social needs such as housing and food. Five of the sites highlighted the important role that clerical staff (defined broadly to include staff such as Patient Services and Access Representatives, Registration/Front Desk staff, Patient Advocates, and Account Specialists) played in providing care coordination. Typical duties included identifying patients for care coordination, providing extra support

related to referral tracking and follow-up, and critical rapport-building with patients. Four sites reported that their Quality team played a role in care coordination (typically providing data and analytics to clinical staff). In three sites, IT staff played a similar role. Management staff were involved in day-to-day coordination in three sites, though typically in a high-level supervisory capacity or training. Finally, two sites utilized Triage Nurses, who identified patients for care coordination, engaged community resources, and supported relationship-building with these external organizations.

In addition to these broad staff categories, clinics reported other staff as providing care coordination services, including a Diabetes Educator, Medication Refill RN, public health staff, Dietician, Medication Therapy Management (MTM) Pharmacist, and Anti-coagulation Education staff, among others. These staff played fairly limited roles in care coordination across the clinics. One site employed a Spanish-speaking Community Health Worker who was heavily involved in almost all the care coordination activities. At this site, there were also two Interpreters, licensed as Certified Nursing Assistants (CNAs).

While staffing models, effort, and cost vary across the sites, there is some consistency in how care coordination hours are spent. **Table 5** groups the nine care coordination categories as defined by the study into five activity areas. The numbers in the table represent the distribution of care coordination hours spent on these activities. (Again, data were not available for Site F.) Not surprisingly, across sites, the majority of care coordination hours are spent on direct services and engagement with the patient, which includes relationship-building, medication management, scheduling appointments, and supporting patient self-care management. Across the sites, relatively little time is spent on identifying patients for the program and getting consent. And the sites spend between 10% and 20% of their time on communication across the care team and training. There is more variation in the areas of patient assessment, care plan development, and documentation and engagement of relevant community resources. The site that reported more time in patient assessment and care plan development (Site D) indicated that most of those hours are devoted to patient assessment. Time spent on engaging community resources is lower in Sites D and E. Site E is an urban FQHC, and staff at Site D characterized the site as "effectively acting like" an urban FQHC. Given the population they serve and their urban setting, both sites reported strong existing connections with community resources. For this reason, less foundational work to engage relevant community resources may need to be done under the HCH program.

One important innovation and investment worth noting is the staffing model used by Site A to combat burnout among Care Coordinators. This clinic employs three RN Care Coordinators, and these staff split their time between HCH care coordination and duties related to Medicare wellness and medication refills. (Because of this dual role, each care coordinator maintains a caseload of roughly 30 patients.) The model was developed in response to concern about burnout and turnover among care coordinators. Staff explained that the intense mental health and social needs of their care coordinated patients drove the need for this staffing arrangement: "[Our] patients are chronic and have a lot of different mental health issues… and there was high burnout [among care coordinators]. We wanted them to take on other things so it wasn't just care coordination."

Table 5: Care Coordination Hours in a Typical Month Distributed by Care Coordination Activity

Care Coordination Activity Area	Site A	Site B	Site C	Site D	Site E
Identifying Patients for Care Coordination and Securing Consent (Category 1)	3%	8%	3%	10%	6%
Patient Assessment and Care Plan Development and Documentation (Categories 2 and 3)	4%	21%	3%	27%	17%
Direct Services and Engagement with the Patient (Categories 5, 6, and 7)	53%	52%	56%	51%	64%
Care Team Communication and Training (Categories 4 and 9)	10%	10%	20%	10%	10%
Engage Relevant Community Resources (Category 8)	31%	8%	17%	3%	3%

Source: Site-reported data.

Note: Numbers may not add to 100% due to rounding.

COMMON HCH CARE COORDINATION APPROACHES

Despite variation in the staffing models, hours, and costs, there were a number of similarities across the sites in terms of their approaches to care coordination activities. Clinics reported common themes as they related to patient identification for care coordination, care planning, team-based care and communication, direct services and engagement with patients, and billing.

Patient Identification

Patients targeted for care coordination are not necessarily those with the most complex medical needs. While staff and providers to whom we talked noted multiple chronic conditions as one factor in identifying patients for care coordination, almost all noted that this is not the only driver, nor is it a definitive predictor of need. Clinics described their care coordinated patients as those for whom "the basic flow through the clinic isn't enough," patients who "need an extra hand," and those who "don't quite understand their disease and how to manage that disease." One Manager of Care Coordinators explained that "on paper," some care coordinated patients might not appear high-acuity, but they struggle with their health care for other reasons, such as language barriers, challenges with insurance, or limited social support. She noted that originally, the clinic auto-enrolled a large list of people based on medical diagnoses alone, and this did not work well. She noted, "what we now embrace is identifying individuals with a possible need and then assessing to see if they would benefit from care coordination." A Care Coordinator at a different site explained her role this way, "Patients come here for their medical needs. They see their provider and they have their medical needs met, and then life happens around that. I'm here to help them with the things that happen in life [that complicate their medical care]."

Despite capacity to use data and analytics to identify patients for care coordination, most clinics rely on staff referral. Across the board, the clinics we studied primarily identify patients for care coordination through informal referral. Often, this is done by a provider, but in many sites, referrals can some from anyone who interacts with patients. One Care Coordinator noted, "We work really well as a team and we know our patients.… We get to know the families and their situations when they come in and chat. So all of our staff are really good [at identifying patients for care coordination] from the front desk to the lab to follow-up scheduling."

In several cases, clinics started by using data-driven methods for identifying patients, for example, using IHP reports that identified high utilizers, but they found that their more informal approach worked best. One Manager of Care Coordinators noted that the informal and analytic approaches to patient identification for care coordination (which she referred to as care management) typically align: "When I look at who we've got care managed and who I might choose based off a payer report or a different algorithm, and they pretty much match up…. Even though our method isn't very sophisticated, I think we're managing the patients that we should be managing just by having kind of a poor man strategy, like provider saying I think they need to be managed." More systematic approaches to identifying potential enrollees include running reports from the Electronic Health Record (EHR) to identify high costs/high utilizers, patients with frequent ED visits or readmissions, and chart review.

Care Planning

The majority of sites did not find the care plan component of the HCH program valuable. While all clinics spoke to a plan of care for patients on their care coordination caseloads, only one clinic described the care plan as a useful tool. Some clinics explained that the clinical goals and outcomes in the care plan did not resonate well with patients. One explained, "The goals have to be patient centered, or they're not going to work. So even though the Care Coordinator may have it in their mind that we're going to work towards a better A1c outcome, those words are not going to fit on that patient's care plan with that patient's goals. So it might be something as simple as eat three less chocolate chip cookies in a day versus a whole pack of cookies." Staff at several clinics noted that the care plan is not useful for patients with complex needs such as literacy issues and housing instability: "The care plan is actually something that a lot of patients don't find much use in. Because of that, it's just busy work for us."

Team-based Care and Communication

Care coordination is built on a team approach to patient care. Staff at all of the sites describe care coordination as a team approach to providing care, and most sites viewed the Care Coordinator as being at the center. One Care Coordinator noted, "The Care Coordinator … needs to work with the provider's nurse, with the provider, with the receptionist. All of us are accountable for patient outcomes, even though with a complex patient, [the Care Coordinator] is really being the point person."

Sites noted that successful transformation to HCH team-based care requires demonstrating the value of care coordination to providers. At the majority of our sites, staff noted that the "culture shift" associated with successful HCH care coordination programs requires demonstrating the value of care coordination to providers. A Care Coordinator manager at one site noted that he often had to explain, "Yes, it's a lot of extra work, but what does the light at the end of the tunnel actually look like?" He used the example of a provider who had a patient who repeatedly missed follow-up appointments related to their diabetes. When the patient was connected to the Care Coordinator, she identified that transportation was the barrier and arranged for a taxi-service. He noted that in cases like this, "providers started to connect those dots and 'found the benefit'."

One provider, who is a Physician champion for the program, explained that it takes time for Physicians to understand the role of the Care Coordinator and become comfortable with a team-based approach to patient care: "It's scary as a Physician or Advanced Practice provider to step into teamwork and into care

coordination and to realize you have to let go. I'm probably the first Physician of many moving in the direction to understanding that you don't have to do it all, that working on a team and working in a care coordination system works much better than trying to do it on your own." She also noted that the presentations conducted by the HCH Lead at her clinic have been very effective at moving the needle on Physician buy-in for the program. In fact, staff across the sites noted that despite being certified for many years, the transformation is ongoing.

The majority of sites described "embedding" Care Coordinators at the nursing stations as important to team-building. Staff at all but one site talked about the importance of having Care Coordinators embedded in the same workspace as providers and nurses. In at least three sites, space was reconfigured to support care coordination. The Medical Clinic Manager at one site explained, "[staff] have the opportunity to swing over or turn their back and say, hey, I have this patient of yours and I have a question versus having to get up physically and go find them in some other place of the clinic or wait outside the door until they get done with a patient, [which is] a waste of time, very expensive time." She also noted that the physical plant change helped cement the transition to team-based care coordination and facilitated a culture of respect for all members of the care team.

Care team communication is typically informal and supported by the EHR. Across the sites, Care Coordinators were identified as taking the lead on organizing and sharing information with the care team. This was typically facilitated through informal pre-visit huddles. The clinics associated with large systems also saw great value in making sure that Care Coordinators across the sites stayed connected and shared best practices and resources. This was typically done through monthly meetings and informal email exchange. Several sites also noted the role of the EHR as the "place of record" for information on care coordinated patients. In all of the sites, care coordinated patients are flagged, and members of the care team use this to access and share information. Many of the Care Coordinators cited the EHR's role in supporting referral tracking, "in-basket" messaging among the care team members, and identifying care coordinated patients who had an ED visit or hospitalizations. Most sites noted that they are modifying the EHR to better support HCH functions and the Care Coordinators more generally, which can represent an ongoing cost to the clinic.

Care coordination programs can be standardized, but they must be flexible enough to meet the needs of specific clinics. With one exception, all of the study sites were part of larger systems that employed Care Coordinators across a variety of sites. At all of these sites, we talked to the staff charged with managing the Care Coordinators and providing strategic vision. In most cases, these managers talked about a balance between promoting standardization and also supporting flexibility. One Manager explained, "Our goal is to standardize care coordination across the system. We know that care coordination is the patient's unique story. Three people can be labeled as noncompliant because they don't take a baby aspirin every day, and there can be three different reasons why. It is the [Care Coordinator's] job to find out that unique story, but where we document it, what interventions they use, sharing best practices, that can be standard." She went on to note that each clinic "has its own personality," and she strives to find a "happy medium" between the standard practices of the umbrella department and the needs of the clinic.

Direct Services

Care coordination is integrated into the pre-defined clinic workflows. Staff at several sites described care coordination as supporting, but not supplanting, the standard clinic workflow. Examples that came up often were referrals and appointment reminders. All of the clinics have pre-defined workflows and dedicated staff to support these activities. Care coordination does not disrupt or replace these systems, but it provides extra communication and follow-up for care coordinated patients. One Care Coordinator Manager explained, "We don't really want to change workflows. If [a referral] is going to a Referral Specialist, they have their workflow, it's probably more [the Care Coordinator's] responsibility to just make sure if that patient is on our panel, that it got done and when. And to help the patient understand what's happening at that appointment if that's what that patient needs."

Billing

Billing for care coordination is seen as an ongoing challenge. Across our interviews, staff had concerns about how care coordination is billed and reimbursed. Four of the six clinics in the study reported that they attempt to bill for care coordination, but they acknowledged that this is a time-consuming and complicated process and that many insurers do not pay for a variety of reasons (e.g., the insurance company is out-of-state). One clinic noted that they only attempt to "enroll and bill" for patients who need longer-term care coordination support. The Manager of Care Coordinators explained, "If a patient has something traumatic going on in her life for a three-month period, we help her through it and we don't necessarily bill." The Care Coordinator at this clinic added that she typically waits to see someone three or four times before she assesses the need for a formal, long-term relationship, which includes securing consent to enroll them in the program and billing. Staff also reported that the MDH tiering tool is not reflective of patients' need for intensive care coordination and that they use the tiering tool for billing only.

The clinics that do not bill for HCH have the capacity to do so, but they think the administrative burden outweighs the financial benefit. Two of the study sites do not bill for HCH care coordination. In one case, the clinic did try to bill for HCH care coordination services, but it abandoned billing because the time and costs associated with explaining the model to patients and navigating the various coverages across plans outweighed the reimbursements they received. The other clinic that does not bill has the processes in place to do so, but given the variation in patients' ability to pay, it has decided it would prefer to provide the service to all patients. The clinic considers this part of its broader population health goals. The Care Coordinator Manager explained, "we would rather be able to provide this service and get the benefits from it for the patient than us generate the revenue or have them just decline coming in or meeting with a care coordinator because of a copay or a monthly bill."

CLINIC PERCEPTIONS OF THE VALUE OF CARE COORDINATION

Staff at all of the clinics in the study see great benefits of care coordination—for the patient and in terms of staffs' ability to be more efficient in providing high-quality care. They also cited some cost savings to the system.

First and foremost, staff see the value of care coordination in the form of better care for their patients. A provider put it simply, "I think what it does, most importantly, is make the patient's life better. We do this for the patient." She described the value of the program from the perspective of a patient dealing with cancer: "When you get diagnosed with ovarian cancer, the last thing you want to do is spend three days in the hospital. You want to be at home, and you want to feel like this is controlled and you're doing okay. So I think the most important thing about care coordination is patient empowerment and putting the patient first."

A Manager of Care Coordinators pointed out that care coordination is an example of "accountability across the care continuum." She noted that this signaled a shift from "appointment-based care"—where patients' needs are addressed only during an office visit—to a more holistic approach. She believes that this represents great value to the patient in the form of shortened illness and improved quality of life.

Several Care Coordinators talked about the one-on-one personal engagement as critical in supporting care management generally and motivating self-care specifically. One provider explained that her mantra is, "people don't care how much you know until they know how much you care." She noted that the Care Coordinator lets patients know that clinic staff care about them. Likewise, one Care Coordinator highlighted the value to the patient of having a single clinic contact to help them manage their care. She noted that this is particularly important for patients with mental health issues. She explained that patients can call her directly, bypassing the main clinic line, and she encourages them to call her as much as they need to.

Staff across the sites explained that the team-based care coordination approach helped providers do their job more efficiently and effectively, which improves access to care. A provider to whom we spoke noted that care coordination saves money because it allows him to see more patients while still meeting the needs of patients who need extra attention. He explained that as the amount of time he can bill for a visit has decreased, the subset of his patients who need more "tender loving care" has not. He went on to note that he will provide a warm hand-off to the Care Coordinator, allowing him to go on to the next patient: "If you're running a business, saving money and making money are the same thing. If I can go and take care of another patient and by taking care of another patient we now can pay our bills and I can pay my staff and I can pay for Health Care Home…. So in my world, getting [the Care Coordinator] involved will give [my nurse] and I the opportunity to go and take care of other patients while meeting the needs of the original patient…. It's efficiency, it's good care. [The Care Coordinator] has tucked in the loose ends and to me that is tremendous. That is tremendous use of a multidisciplinary care team, which has been proven over and over is what you need."

A provider at a different clinic echoed this, noting that care coordination "frees me up to do more of what I am expected to do in terms of direct patient care." The same provider attributed improvement

on specific quality measures to care coordination: "My diabetes scores improved." This provider suggested that when a Care Coordinator was involved, the likelihood that patients would follow through on provider recommendations increased.

At one site, staff suggested that referring clinic providers may be more likely to take a whole-person approach to patient care because there was a member of the care team, the Care Coordinator, who could pick up where providers leave off with patients. One manager shared, "Because you don't want to ask a question and not have a solution for somebody … the Care Coordinators … are an avenue for [providers] to get an answer for that patient." She went on to share that if the clinic decided to end care coordination, "We would have a revolt of some sort. Because I think … those [providers] who really understand it and utilize the Care Coordinators, feel like it's been I think one of the best innovations that we've done at the clinic."

A provider to whom we talked echoed this: "I wish we had done this 20 years ago. Medical care is rarely limited to one issue that you can take care of and be done. People come in with lots of issues. [In the past], at the end of the day, I would think about what I did not do. I couldn't navigate every resource the patient needed ... I don't know all of the resources. With care coordination, I am more fulfilled in what I can do for my patient. I am in the know."

Staff also connected care coordination to a reduction in health care costs. A provider explained that care coordination allows them to "get [patients] set up with the right services and maybe taking that call to figure out, do they really need to come to Express Care? We have a care plan, what's going on with you? Let's address this." They also noted improvements in total cost of care, which they attribute to care coordination and broader transitions toward value-based purchasing. Many other staff described that they have observed a reduction in ED visits. One staff provided an example of how this might occur: "The social worker provides care management for many patients that have mental health problems who use the ED to address these issues. By building relationships with these patients, they can call her first before going to ED. She can refer someone to crisis team, who connects them with longer-term and more supportive services. This is a better outcome than [a] quick fix at an ED."

CONCLUSION

This case study, ingredients method approach to quantifying the costs of care coordination associated with Minnesota's HCH model produced several findings for MDH and DHS to consider as it continues to invest in delivery system and payment reforms that reward high-quality, patient-centered care.

- Clinics appreciated the flexibility afforded by the HCH model design to operationalize certification standards according to clinic and patient needs.

- All of the clinics in the study describe their whole panel as being "part of the HCH," and they reported spending time across the whole panel to identify potential candidates for care coordination. They focus care coordination activities (defined for this study as care coordination outside of usual, quality care delivery) on the higher-need segment of the clinic's panel.

- Clinic care coordination costs vary considerably across the case study sites, from $1 to $12 per HCH adult panel in a typical month.

- Variation in clinic care coordination costs is due, primarily, to the number of hours devoted to care coordination and the credentials and wages of staff who performed care coordination activities. Our discussions with clinic personnel suggest that mental health diagnoses and/or multiple chronic diseases drive care coordination costs. In addition, staff report that a wide variety of non-clinical patient characteristics (most related to socioeconomic status) drive care coordination costs. These included language barriers, homelessness or poor housing, food insecurity, and lack of transportation. While care coordination staffing models varied, core care team staff included Care Coordinators (with a mix of clinical and non-clinical credentials), providers, and nurses.

- Common approaches to HCH care coordination activities include informal, provider-driven referral to care coordination services; a team-based approach to providing care coordination; integrating care coordination into pre-defined clinic workflows; and the importance of demonstrating the value of care coordination to providers.

- Across the board, staff reported the high value of care coordination to the patients. Many noted that it improved the efficiency of care delivery and likely saved costs and resources.

As care coordination is likely to continue to be a critical strategy while Minnesota seeks to redesign care delivery to improve population health, we would recommend continued research focused on care coordination. Future research in this area could include the identification of promising practices across clinic sites and the development of methods and data collection strategies that clinics and systems can undertake to quantify cost savings related to care coordination.

APPENDIX A: METHODOLOGY

METHODOLOGY

SHADAC used a case study approach to summarize the reoccurring costs of care coordination. The rationale for this approach was to provide the state with a deeper understanding of what constitutes care coordination in select Minnesota settings given the variability in care coordination definitions, intensity and types of care coordination, and personnel delivering care coordination. Single- or multiple-case studies as an evaluation method are used most often when the work is highly descriptive and explanatory and when context is important.[1] Given the variation in clinic structure, patient population, approach to health care home (HCH) program design, etc., this methodology seemed best able to capture and contextualize important variations across sites. A primary limitation of this approach, however, is that it restricts our ability to generalize findings across sites and primary care clinics in Minnesota more broadly. It is important to note that other factors which we were not able to quantify in this study likely contribute to the variation in costs we observed across clinic sites. For example, although we used standardized interview protocols and data collection tools, the data are self-reported and reflect not only the specific models in place at each clinic but also staff interpretations of how those models are operationalized.

To inform our recommendation on aspects of the study methodology and outcome measures, we sought to review literature (peer-reviewed and grey literature) focused on the cost of care coordination for clinics.[2] Based on this review and in consultation with the state, the study conformed around a set of key parameters:

- A case was defined as a non-acute, primary care clinic that was either HCH or patient-centered medical home (PCMH) certified. Cases excluded from this study included care coordination anchored in a hospital, nursing home, or rehabilitation setting, e.g., pre-admission, admission, and discharge planning. Providers applying for BHH certification were excluded from this study as well, due to the uniqueness of the care coordination needs of patients enrolled, its relatively new implementation, and other evaluation and monitoring planned for the program.

- In order to estimate the cost of care coordination, the study team used a retrospective "ingredients method." Specifically, the study team developed a list of activities (or "ingredients") that define care coordination and grouped them into nine categories of care coordination activities (see Appendix B for a detailed description of the activities). We then collected information about the costs associated with each of these activities.

- Care coordination was defined to include personnel and non-personnel costs and be modeled closely after IHP and HCH care coordination requirements.

- Costing excluded start-up costs, resources spent on the HCH and/or IHP certification process costs, and costs unrelated to direct care coordination, most notably, Electronic Health Records (EHR) not aimed directly at care coordination (e.g., investment to comply with the EHR mandate).

- Data collection on cost and time was limited to adults and primarily focused on adults enrolled in care coordination.

- Data collection occurred in two phases. First, we recruited and collected data from a pilot site. Based on our experience during the pilot and in collaboration with the state, we refined our study procedures and tools and proceeded to recruit and collect data from the additional sites. Additional detail on data collection is below.

A primary aim of this study was to include five to eight primary care clinics located throughout Minnesota. In selecting clinic sites, we sought to include a mix of urban and rural settings, clinics participating in the state's Medicaid ACO program (the Integrated Health Partnership [IHP] model), and at least one Federally Qualified Health Center (FQHC). We decided early in study planning that participating clinics had to be either HCH or PCMH certified. SHADAC considered more than 30 clinic sites. We evaluated sites based on location, size, and care coordination model, among other factors, and consulted MDH and DHS leadership as well as HCH nurse planners, who work closely with clinic staff to administer the HCH program. MDH, with SHADAC follow-up, invited nine clinics to participate. Six clinics accepted our invitation to participate in this cost of care coordination study.

Cost and Time Data Collection Process

The care coordination cost and time data collection process proceeded in four primary steps described in this appendix: (1) a preplanning call with a Health Care Home (HCH) nurse planner, (2) an initial call with a key contact at the clinic site, (3) on-site data collection, and (4) a cost and time data collection worksheet filled out by the key clinic contact.

Step 1. Preplanning Call with HCH Nurse Planner

In most cases, the first step in the data collection process was an informal 30-minute preplanning call with the relevant HCH nurse planner at the Minnesota Department of Health (MDH). The goal of the call was to review available HCH documentation, review the clinic's history with and approach to care coordination, and get information about potential key contacts at the clinic.

Step 2. Initial Call with Key Site Contact

The second step in the data collection process was an initial 90-minute call with the key site contact(s) once they accepted our invitation to participate in the study. In advance of the call, the study team provided the contact with information about the study call to ensure that the site understood the study's definition of care coordination and what type of personnel are involved. Before the call, the study team conducted a scan for recent news about the site. This call was recorded and transcribed for later review.

The primary goals for this initial call were to (1) provide the site with more information about the study, its goals, and its definition of care coordination and approach to costing; (2) verify and update information about the care model from the preplanning call with the nurse planner; (3) identify relevant staff to be involved in on-site data collection; (4) collect information on the size of the total panel, size of the care coordinated panel, and payer mix; and (5) outline next steps for scheduling an on-site data collection meeting.

Step 3. On-site Data Collection Meeting

The third step in the data collection process was a two-hour on-site meeting with key staff identified in the initial call, typically one or more clinic care coordinators and a clinic manager of care coordinators. The primary goals of the meeting were (1) to collect data on which clinic and system staff were involved in care coordination at the site and (2) to collect qualitative information about what staff see as the value and cost drivers of care coordination. In addition, the meeting was used to confirm information about the size of the clinic's total panel, the size of the clinic's care coordinated panel, and the clinic's payer mix. This on-site meeting was recorded and transcribed.

To collect data on the specific clinic and system staff involved in care coordination, the study team walked through the activities conducted by the clinic within each care coordination domain, asking which staff performed those activities, confirming that the clinic conducted that activity, and identifying additional activities conducted by the clinic. Clinic staff were assisted in this walk-through by printed handouts with a table listing the activities on the vertical axis and potential staff involved in those activities on the horizontal axis. Data from this walk-through conversation were audio-recorded and transcribed in addition to being recorded manually by two staff members on digital staff mapping data collection tool Excel spreadsheets.

The meeting was concluded by providing an overview and explanation of the cost and time information that the study team would be asking the clinic to provide independently. The study team also asked the clinic to identify the best staff member(s) to provide this information.

After the on-site meeting, study team staff who participated held an internal debriefing meeting to identify and discuss any discrepancies captured in each staff member's data collection mapping tool, consulting the interview transcript as necessary. Any discrepancies that could not be resolved by consulting the transcript were resolved by consulting with clinic staff as part of the follow-up in Step 4.

Step 4. Site Cost and Time Data Collection and Review of SHADAC's Case Study Report

The fourth step in the data collection process was providing the site with a cost and time worksheet based on the discussion in Step 3. The worksheet asked the site to provide staff salary and FTE information for all staff categories involved in care coordination activates, staff hours in each activity area by staff category (e.g., provider, Care Coordinator), system staff costs/hours (where relevant), and non-personnel costs. After receiving the completed worksheet from the site, the study team would follow up with the site as necessary for clarification. Finally, once the draft case study was completed, it was submitted to the site for review.

APPENDIX B: ACTIVITIES THAT DEFINE HCH CARE COORDINATION FOR THIS STUDY

DEFINITION OF CARE COORDINATION

The list of activities used to guide data collection in this study was based on SHADAC's review of the literature, discussions with MDH and DHS leadership, and review by key stakeholders including the HCH nurse planners and HCH Advisory Committee. We reviewed Minnesota's HCH certification requirements but also drew on several resources developed by AHRQ,[1, 2, 3] the definition of care coordination used by the authors of the evaluation of the state of Minnesota Health Care Homes Initiative,[4] the Stratis Health Care Coordination Tool Kit,[5] and an issue brief by the Commonwealth Fund on models of care management.[6] An initial list of agreed-upon care coordination activities was used to collect data on the pilot case study. This list was then revised based on feedback from the pilot site.

The final list included nine categories of care coordination activity (see below). Because this study is aimed at the cost of care coordination specifically (within the context of HCH standards), the following HCH activities that are not directly related to care coordination were excluded:

- 24 hour access (on call system, phone triage)
- Same-day appointment scheduling
- Adoption of evidence-based guidelines
- Quality improvement (including developing a committee structure, engaging patients in the process)
- Quality/performance measurement (patient satisfaction surveys, Statewide Quality Reporting and Measurement System)

Minnesota Health Care Home Adult Care Coordination Cost Study: Activities that Define Care Coordination

1. Identify Patients for Care Coordination and Secure Consent to Participate
- **Routine scanning of charts.** Conduct systematic chart review to identify people who might need CC. (The assumption is that this is done on a regular basis [daily/weekly/monthly].)

- **Informal referral.** Identify patients for care coordination during informal interactions between patients and clinic staff (e.g., interactions with front desk staff, during pre-visit planning, as part of provider follow-up).

- **Run tiering or other algorithm.** Apply electronic health record (EHR) algorithm or tier assignment methodology (as set up in clinic) to identify patients who may benefit from CC. (The assumption is that this is done on a regular basis [daily/weekly/monthly].)

- **Other approaches to identifying patients for care coordination.** Conduct medical record database searches (as a supplement or alternative to algorithm approach) using trigger criteria, such as total cost of care, frequent ER visits, missed appointments and screenings/shots, or other criteria.

- **Reach out to targeted patients, explain care coordination, and obtain consent.** Conduct outreach to targeted patients and invite them to receive care coordination services. This could include phone call or in-person outreach when the individual is in for a medical appointment. Communicate with patients about the nature of care coordination services, as well as how care

coordination works within the clinic and with external care managers/supportive services. Obtain release of information/consent.

- **Document acceptance and refusals.**
- **Follow up with refusals.** Conduct routine follow-up with people who refuse care coordination to try to gain consent to provide the care coordination services.

2. Assess Patient and Develop Care Plan

- **Patient assessment to inform plans for care coordination.** Assess patient through medical chart review, formal assessment tools, etc., and conduct outreach to external care managers, social/county service coordinators, and others involved in patient's support and care.
- **Initial care coordination meeting with patient to discuss patient needs, goals, and barriers to treatment.** This includes understanding the social determinants of health that may inhibit meeting care goals.
- **Build care team.** Based on internal protocol and workflow processes, identify the members of the patient's expected care team—including internal clinic staff, external providers, and external care managers involved—and confirm that they agree to be part of the team.
- **Write care plan.** Develop care plan in collaboration with patient/family and all care team members, including specialists and other providers inside and outside the system involved in patient's care management. This may include external social services, home care, community-based service providers, county and waiver care managers, etc.
- **Apply HCH tiering tool for the purposes of billing.**

3. Maintain Care Plan and Related Documentation

- **Update care plan as needed.**
- **Track referrals.** Document the outcome of referrals in the care plan (e.g., were notes provided by outside providers, did the care team follow up, is the referral "closed"?).
- **Maintain documentation outside care plan.** Document relevant patient and referral information in the EHR, registry, etc.

4. Organize and Share Information with the Care Team

- **Set care team meeting schedule.** Determine schedule or triggers for care team meetings and patient in-clinic visits—within expected timeframe (e.g., next 6 months).
- **Conduct pre-visit huddles.**
- **Coordinate the activities of the care team.** Ensure that everyone on the care team follows up as needed after a visit and that activities are shared and documented as is appropriate.
- **Engage ancillary members of the care team.** Facilitate the participation of other members of the care team during patient visits as needed (e.g., behavioral health, counseling, social worker, etc.).

- **Engage new members of the care team.** Reach out to new external care providers/specialists in care planning who are involved in the patient's care—as the situation directs.

- **EHR and other IT modifications.** Staff time spent to modify EHR and other IT systems to accommodate HCH care coordination patient flow and documentation. Not including start-up costs.

5. Provide Care Coordination Services to Patient

- **Relationship building.** Establish ongoing communication with patient outside regular clinical/provider visits to develop and maintain a relationship with the care team.

- **Discuss updates to the care plan and changes to care coordination activities with the patient.**

- **Schedule appointments.** Schedule appointments for patients with specialists and ancillary members of the care team.

- **Medication management.** Work with patients to review, reconcile, and manage medications.

- **Conduct family conferences.** Conduct family conferences outside of regular visits to address specific issues.

- **Clinical information sharing with patient**. Share information about test results, after-visit summaries, care reminders, etc., e.g., through letters, patient electronic portal, phone calls.

- **Conduct home visits.** Conduct home visits based on clinic protocol/triggers.

- **Follow up with patients who have not kept important appointments.**

- **Send visit reminders.**

6. Support Patient Self-Care Management

- **Determine patient's ability and desire to self-manage.** Assess patient's understanding of his or her condition, ability to self-manage, and level of self-activation.

- **Develop educational resources aimed at self-management**. Develop, adapt, and provide educational resources and tools to assist with self-management in a language and format the patient will understand.

- **Assist patients with self-management.** Use techniques such as Motivational Interviewing and coaching to help patients with self-care management. For example, counsel patients/families to adopt healthy behaviors, and discuss how to address barriers to health and self-care.

- **Referral to community resources.** Provide referrals to community resources and long term services and supports, and follow up with these referrals.

7. Facilitate Transitions

- **Share relevant information with acute and post-acute providers**. Share necessary information with acute and post-acute providers with regard to the patient's care plan, medications, primary and secondary diagnoses, family supports, etc.

MINNESOTA ACCOUNTABLE HEALTH MODEL   **shadac** STATE HEALTH ACCESS DATA ASSISTANCE CENTER

- **Follow up with patients after hospitalization or ED visit.** Follow up with patients who are admitted to hospitals or have an ED visit.

- **Conduct post-discharge home visits**. As per clinic protocol.

- **Obtain necessary discharge information from hospitals/EDs/nursing homes.**

- **Assist with advance care planning.**

8. Engage Relevant Community Resources

- **Identify frequent patient barriers/needs.**

- **Research potential community partners, services, and supports.**

- **Build collaborations/partnerships.** Initiate and manage relationships with community partners and external resources.

- **Implement business agreements.** Develop and execute business agreements as needed to formalize new partnerships.

- **Maintain list of relevant community resources.** Compile list of resources, services, and supports, with contact information. Reassess and update list on an ongoing basis.

9. Train Care Team Members on Care Coordination

- **Manage training logistics.** Secure staff participation, identify key dates, arrange for meeting space, etc.

- **Develop curricula for internal trainings.**

- **Participate in internal and external trainings.**

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