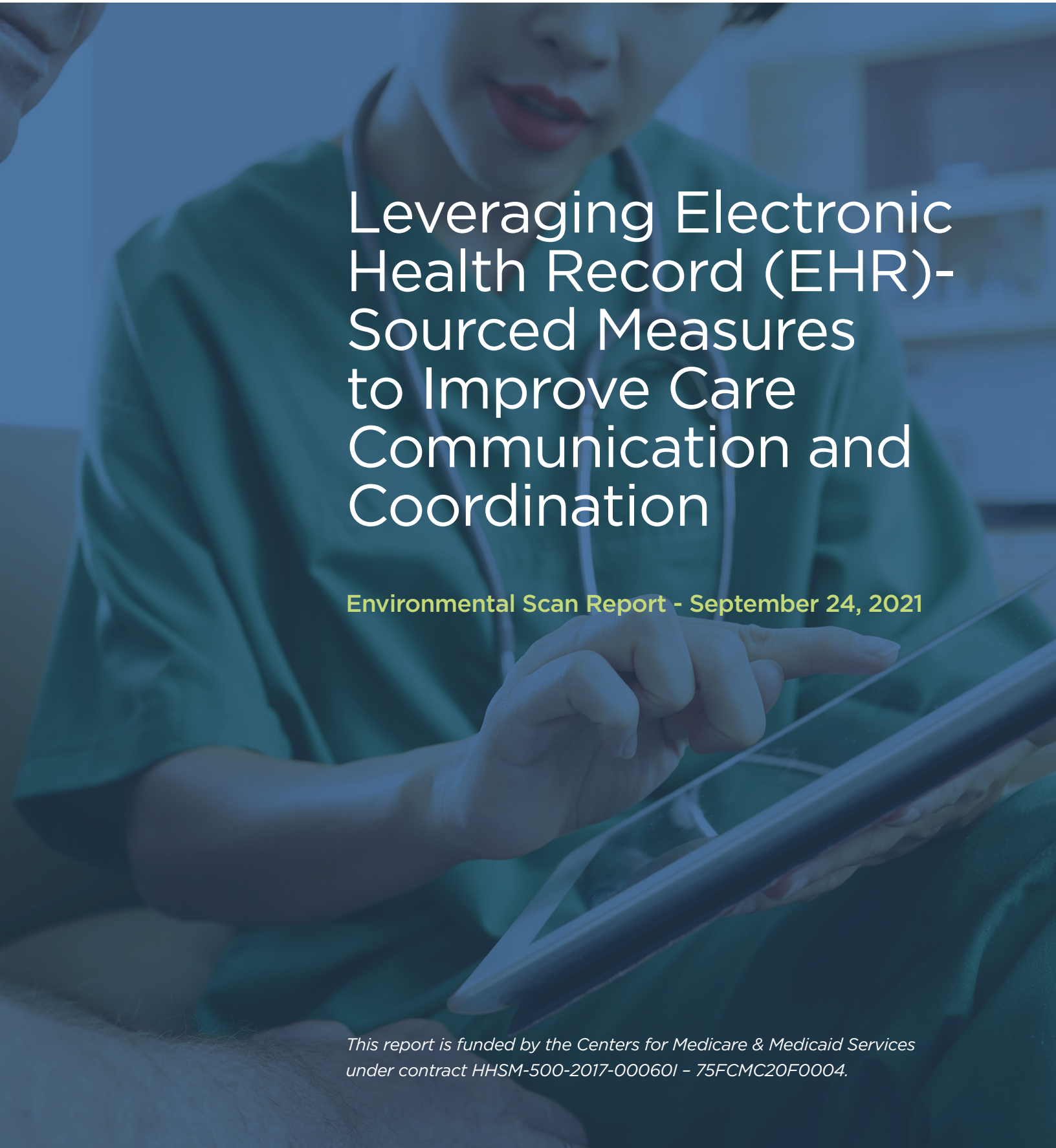
NATIONAL QUALITY FORUM
Driving measurable health improvements together

www.qualityforum.org



Leveraging Electronic Health Record (EHR)-Sourced Measures to Improve Care Communication and Coordination

Environmental Scan Report - September 24, 2021

This report is funded by the Centers for Medicare & Medicaid Services under contract HHSM-500-2017-00060I – 75FCMC20F0004.

Contents

Executive Summary

It is increasingly common for patients to have multiple healthcare providers and to receive care across multiple healthcare settings.

For example, a patient may have a primary care physician (PCP) as well as a specialist, such as a cardiologist or pulmonologist. When multiple clinicians are involved, communication is vital to ensure treatment recommendations are aligned with and centered on the patient's goals. For example, a patient may decide and communicate to their clinic-based PCP about their advanced directive and the specific types of invasive treatment they do not want. To avoid delivering care that is not aligned with the patient's wishes, this information must be communicated with the hospital and accessible to hospital-based providers that may be in a position to deliver invasive treatment during an acute situation. Additionally, communication and coordination with community resources can assist in increasing health equity. For example, a clinician can identify and connect patients to resources available to assist with food or housing insecurity. While effective care communication and care coordination have been discussed and researched for years, the ability to measure and improve these concepts continues to be a challenge.

Over the past 15 years, the use of electronic health records (EHRs) has become common throughout the healthcare system.[1] EHRs are tools used by clinicians to document notes, order tests and treatment, potentially review the activities of other care team members across settings, and bill insurance companies. Yet increasingly, EHRs can also be used as a tool to communicate and coordinate care by sharing data across EHRs or directly with patients. Patient portals are an example of an EHR-based tool that provides patients and their caregivers an opportunity to have access to their test results and appointment summaries; review whether clinicians included the correct information; and assist the patient, their caregivers, and clinicians in being aligned on care goals.[2] Other EHR tools can help to identify and prevent medical errors, such as avoiding dangerous drug-drug interactions.[3,4] Additionally, the EHR can remind clinicians that specific tests are needed, such as a follow-up imaging test to track a potential cancer diagnosis.

In this project, National Quality Forum (NQF), with funding from the Centers for Medicare & Medicaid Services (CMS), convened a multistakeholder Committee to identify the current state of leveraging EHRs to measure and improve care communication and care coordination. **Measurement using EHRs in this area is critical, as measurement will drive quality improvement efforts to enhance care communication and care coordination, two processes that are essential to achieving the Quadruple Aim of enhancing the patient experience, improving population health, improving the work life of healthcare providers, and reducing costs.**[5] The purpose of this Environmental Scan Report is to educate and convey the results and importance of this project for nontechnical readers. A longer technical report and glossary of terms can be found under **Additional Resources**.

This project defines care communication and care coordination as separate but interconnected concepts. Care cannot be coordinated effectively without sufficient communication among everyone involved in a patient's care. Conversely, information can be communicated, but unless it is appropriately contextualized, transmitted, received, and processed, it does not necessarily support care coordination. For example, care communication may be a conversation or electronic exchange between a physician and a patient. Care coordination can include deliberate communication among several different types of clinician and non-clinician providers in implementing a complex care plan for a patient. For example, chemotherapy has the potential to reduce the effectiveness of the coronavirus 2019 (COVID-19) vaccine. Therefore, in accordance with the patient's

preferences, the patient's PCP and oncologist must synchronize the prescribing of both the vaccination and chemotherapy to ensure the patient's immediate preference and need to reduce their risk of contracting COVID-19 is balanced with the need for cancer treatment.

Care communication and care coordination have been measured for many years, primarily through the measurement of the performance of specific care coordination processes (e.g., whether a care plan was performed) and outcomes (e.g., readmission to the hospital). In this project, existing quality measures were identified as either directly or indirectly related to care communication and care coordination and could potentially be modified into either EHR-sourced measures (i.e., measures that use EHR data) or electronic clinical quality measures (eCQMs), a subset of EHR-sourced measures that can be automatically calculated. To further investigate existing measures and EHR-based tools for future quality measurement of care communication and care coordination using EHRs, current EHR-based tools, processes, and approaches that exist within EHRs were also identified.

Key findings of the environmental scan included existing challenges of measuring care communication and care coordination, as well as how EHRs may help address some of these issues. For a process measure to be important in healthcare, it must be consistently linked to improved patient outcomes in research studies. While studies have linked care communication and care coordination interventions to improved outcomes, the effects are inconsistent and vary in different patients and settings. This suggests that interventions that work in one setting may not have the same effect on care communication and care coordination in another setting. This has created challenges in holding organizations accountable for performing specific processes and has been a barrier to the development of care communication and care coordination measures. Additionally, outcomes (e.g., a readmission to the hospital after discharge) are often affected by multiple factors, including care communication and care coordination. Current measures that use insurance claims cannot capture all the factors (e.g., how sick the patient is, a patient's lab results, or information contained in a clinician's notes). This makes it difficult to isolate whether outcomes are influenced by care communication and care coordination or other factors.

EHRs may help to overcome some of these challenges, as they contain detailed data that can be used as performance measures to hold organizations accountable for specific care communication and care coordination processes and patient outcomes. For example, some EHRs have structured notes that can assist in ensuring that closed-loop communication occurred (i.e., if one clinician spoke to another about a test result). This is particularly important when a high-risk finding on a lab test needs to be communicated from one clinician to another (e.g., a high blood creatinine level that could signal acute kidney failure).

The findings in this Environmental Scan Report will inform future efforts to create consensus-based recommendations for facilitating and improving EHR-based care communication and care coordination measurement in an all-payer, cross-setting, and fully electronic manner to drive quality improvement and outcomes.

Definitions, Goals, and Examples of Care Communication and Care Coordination

Care communication and care coordination are separate but interrelated concepts, as communication among everyone involved in a patient's care is essential for care to be coordinated effectively.

Care communication is the transfer of information related to patient care.

It includes both conversations between a provider and a patient or their caregiver (e.g., in-person or virtual discussions during a clinical encounter, a telephone conversation, or an electronic message) as well as conversations between two clinicians (e.g., to share information or to transition responsibilities for patient care with a written note sent from one provider to another). Care communication may occur among clinicians when a patient is being discharged from the hospital or post-acute facility, and care is assumed by a PCP or when one provider (e.g., a specialist) evaluates a patient and offers care recommendations to their PCP. Additionally, if it is in accordance with patient or family preferences, this communication can also occur between a PCP and community resources (e.g., food and housing assistance, home-based care providers, substance abuse counseling, and schools).

However, care communication alone is insufficient for effective care coordination. The definition of care coordination has evolved over the past several decades as new care coordination activities have been developed.

Care coordination is the deliberate synchronization of activities and information to improve health outcomes to ensure patient and family needs and preferences for healthcare and community services are met over the course of their treatment and care.[6]

A selection of examples of care communication and care coordination activities is described on the following page.

Goals of Care Communication and Care Coordination

The goals of care communication and care coordination activities are to optimize team-based care and improve patient outcomes. The impacts of the care communication and care coordination activities listed in Table 1 are described below:

- ↑ **Improved** patient and caregiver experience with the healthcare system through improved care transitions, enhanced communication, and patient navigation[9–13]
- ↑ **Improved** quality of life and functional outcomes (e.g., ability to complete activities of daily living [ADLs]), as cross-disciplinary coordination, case management, and improved patient advocacy ensure the patient's goals of care and care plans are achieved[14]
- ↓ **Reduced** unplanned hospital readmissions related to inconsistent follow-up care after hospital discharge; improved communication between clinicians; enhanced communication to the patient about their plan of care; proactively identify barriers to care; and better-executed, patient-centric, and team-based care plans[15]
- ↓ **Reduced** healthcare utilization, such as emergency department (ED) visits; overall avoidable hospitalizations; and potentially avoidable clinic care visits (e.g., specialists or urgent care) due to improved communication and coordination in the outpatient setting through improved primary care[16,17]
- ↓ **Reduced** healthcare costs[18]
- ↓ **Reduced** medical errors, such as medication errors or duplicative testing, with the use of closed loop communication and improved transitions between care settings[19,20]

EXAMPLES OF CARE COMMUNICATION AND CARE COORDINATION ACTIVITIES

Improving patient and caregiver engagement
Patient and caregiver engagement involves activities that promote patients and clinicians working together to make decisions about a specific activity (e.g., creation of a care plan) and allows patients to receive the best possible health outcomes.

Developing and implementing care plans including the patient's goals
Care planning is the process of collaboratively developing and implementing a plan that describes a patient's care needs and how clinicians from different health systems, hospitals, and other healthcare settings can best help to meet those needs to help the patient meet specific goals and connect the patient to community services, if needed (e.g., to receive treatment at home rather than in the hospital). Care planning must involve not only the clinicians involved in a patient's care but also the entire team, including the family, non-clinician providers, and community resources. In this context, care team members advise the patient about additional goals and activities that will potentially achieve equitable and optimal outcomes. This care plan includes valuable information about the patient's goals and should be shared with all clinicians caring or potentially caring for the patient and should be accessible in the EHR.

Enhancing transitions in care
Transitions in care are the movement of patients from one setting or one clinician to another (e.g., hospital or other healthcare setting to home). Enhancing transitions of care are a set of activities that improve care communication during a period in which information may be lost. For example, information about a diagnosis or treatment may be printed on a paper and given to the patient, and that information may not be transmitted to the next care team.

Promoting cross-disciplinary coordination to integrate care
Cross-disciplinary coordination allows for care to be integrated across clinicians from different disciplines (e.g., differential medical or surgical specialties as well as with essential allied health professionals, such as social workers, physical therapists, behavioral health providers, community health workers, community agencies, etc.) and involves activities that improve care communication between them. For example, children with a disability often require coordinated services that include medical, social, and community resources, such as their school and community-based therapists.[21,22]

Using closed-loop communication
Closed-loop communication occurs when the recipient of the shared information acknowledges receipt and clarifies their understanding of the message to ensure accuracy.[23] This helps to improve care coordination by reducing misunderstandings regarding critical clinical information.[24]

Deploying risk assessments and stratification
Risk assessment is the process of identifying and analyzing factors (e.g., social determinants of health [SDOH]) that have the potential to cause harm or place individuals at differential risk for specific outcomes (e.g., readmissions and disparate access to services more broadly). Risk stratification is the process of applying these factors to specific patients (e.g., a risk score). Practically, this may involve directing specific services to higher-risk individuals to improve outcomes.

Participating in case management
Case management is a process that involves the assessment, planning, implementation, coordination, monitoring, and evaluation of options and services required to meet a patient's health and human service needs. This may include referring a patient for specific community resources that can help with a specific issue (e.g., addiction, food insecurity, and housing).

Encouraging patients and caregivers to use navigation resources
Navigation resources include using individuals to guide a patient and their caregivers through the complex healthcare system. This involves identifying specific barriers to care that a patient may face in implementing their plan of care. For example, a navigator may help to steer communication with clinicians to ensure the patient receives the best treatment in the hospital, assist with setting up appointments, or work with other entities (e.g., insurance companies, employers, case managers, and lawyers) that may affect a patient's care. In a study of social work coordination of foster care, behavioral health support and health system navigation were associated with fewer ED visits, placement disruptions, and privacy violations.[22]

EXAMPLES OF CARE COMMUNICATION AND CARE COORDINATION ACTIVITIES (CONTINUED)

Using shared decision making

Shared decision making is a process in which clinicians and patients collaborate to make decisions and determine tests, treatments, and care plans together while assembling the best clinical evidence as well as balancing the risks and expected outcomes, along with patient preferences and values. This is particularly relevant when more than one treatment option exists to balance risks, benefits, costs, and preferences.

Delivering team-based care

Team-based care can enhance patient care by involving two or more clinicians who work collaboratively with each patient. Team-based care has been associated with improved patient experience and outcomes, as it includes the patient and their caregivers as active members of the healthcare team. Teams may also include physicians, nurses, pharmacists, community health workers, nutritionists, and others.[25–27] For children with special needs and disabilities, team-based care also involves coordinating care with school systems and therapy providers.

Care Communication and Care Coordination Measurement

Measuring care communication and care coordination is essential to ensure that outcomes of the highest healthcare quality are equitably achieved. In quality measurement, there are two approaches:

1) Measure the process of a specific care communication and care coordination activity or the structure that is in place for the activity to occur.

The challenge with this approach is that these interventions are highly context-dependent. This means the same intervention (e.g., case management) may have different effects in different settings with different patients. Because medical care delivery is a complex and adaptive system, internal dependencies may magnify or nullify effects of changing any individual intervention, and sometimes, external interventions can be causative factors.[28] For example, case management may reduce readmissions because case management is a broadly effective intervention. In that case, it would make sense to measure case management to assess care quality. However, in a particular research study, it may be that the specific case manager themself is effective, or referral sites in the study are particularly effective in coordinating care outside of the case management intervention itself. This exemplifies the limits of the utility of using specific care communication and care coordination processes or structures as performance measures. Additionally, care communication and care coordination activities are complex, involving multiple steps and a wide range of providers. This complicates measure development when attempting to acquire a complete assessment of the care communication and care coordination activity.

2) Measure the outcome of improved care communication and care coordination and allow organizations to determine which activity they want to use to achieve it.

In this approach, it is difficult to attribute the cause of the outcome to care communication and care coordination, as these outcomes can also be caused by factors outside of care communication and care coordination. Therefore, it is difficult to know whether care communication and care coordination were the primary causative factors or one of many causative factors. For example, unplanned hospital readmissions are associated with poor care communication and care coordination but can also be affected by clinical factors (e.g., progression of disease), patient factors (e.g., SDOH, insurance status), system factors (e.g., payer policies, state/local regulations, and participation in health information exchanges [HIEs]), and community factors (e.g., availability of follow-up care, and depending on the insurance, a patient may wait to ensure coverage is applicable when they need to go to the ED).

Despite the known importance of measuring care communication and care coordination, there are still only a small number of NQF-endorsed care communication and care coordination measures. This is due to a lack of data availability, data quality, and scientific acceptability (i.e., validity and reliability) issues. Care communication and care coordination measure development is a

challenge due to the difficulty of linking specific care communication and care coordination processes to outcomes. This is important because NQF's **standard evaluation criteria** require sufficient quantity, quality, and consistency in the evidence that links any process measure to an outcome. With the increasing quality of EHR data as well as the expanded capabilities of EHRs to support care communication and care coordination activities, many of these issues may be increasingly surmountable, thus allowing for certain care communication and care coordination processes, structures, and outcomes to be more measurable.

Leveraging Electronic Health Records to Measure Care Communication and Care Coordination

While EHRs were initially designed for clinical documentation, test ordering and displaying results, and billing insurance companies, they can also be used as tools to facilitate care communication and care coordination between patients and caregivers and serve as a central location to document care communication and care coordination activities. EHRs can also be a storage location for data from mobile devices, wearable health technology (e.g., fitness tracking watches), and other similar sources.

In addition, building a data and workflow infrastructure for effective care communication and care coordination requires significant investment in health information technology (IT) and stakeholder engagement. Such investment has been seen when there is alignment between hospitals, physicians, and payers in integrated healthcare systems and payers (e.g., Kaiser Permanente). For example, Kaiser Permanente's insurance arm was able to justify the $4 billion investment in an interoperable health IT EHR infrastructure, as these interoperable systems were seen to be vital to delivering integrated care; without such systems, it would be more challenging to deliver high value care to their patients.[29,30] Health IT EHR infrastructures, such as that of Kaiser Permanente, hinge on the use of EHR-based tools that facilitate care communication and care coordination.

Examples of EHR-based tools for care communication and care coordination include patient portals, HIEs, and decision support tools.

EXAMPLES OF EHR-BASED TOOLS FOR CARE COMMUNICATION AND CARE COORDINATION

Patient Portals
Tools that allow patients to have secure access to their data (e.g., test results, medication lists, care plans, and summaries for appointments and discharges) and have been found to increase patient engagement and facilitate patient-provider communication.[31,32] Portals can also be used to survey patients using validated tools to gain information about their health status, identify care gaps, and improve outcomes. However, for others, patient portals may be difficult to use or access, and other mechanisms need to be in place to ensure that they can similarly participate in their care. A high priority should be placed on ensuring the portals are used and usable for patients.

Health Information Exchanges (HIEs)
Centralized databases or portals that combine EHR data from multiple sources to assist in data standardization and information sharing across settings.[35]

Decision Support and Electronic Trigger (e-trigger) Tools
Tools or applications within or available to EHRs that can assist in delivering care coordination processes as well as identify and help remediate care communication and care coordination problems by delivering clinical insights at the point of care or population level. These tools may use artificial intelligence, predictive analytics (e.g., risk assessment), or natural language processing to create structured fields from unstructured data. This also may include dashboards or tools that integrate other data sources (i.e., community-level data) with EHR data.[3] E-trigger tools are an example that may help to identify medical errors or gaps in care, as these tools review patient data within the EHR and can signal providers when a potential error or adverse event related to care coordination may occur (e.g., completion of a follow-up appointment after a concerning radiology finding).[3,33,34]

Barriers to Measuring Care Communication and Care Coordination in Electronic Health Records

Despite the advantages presented for using the EHR to measure and improve care communication and care coordination, there are also multiple challenges associated with its use, including difficulties in achieving interoperability (i.e., the ability to share information easily between different systems), a lack of industry-wide data standards and standardization, and the complexity of care communication and care coordination activities. When using electronic data (e.g., from an EHR) for quality measurement, data standardization is considered by both the presence of a standard code set and the widespread use of the standard to ensure a measure calculated from one site shares the same meaning as the measure calculated from a different site.[36] **The incomplete use of existing standards or absence of standards increases the resources required to carry out effective care communication and care coordination, thus limiting the ability to perform and measure care communication and care coordination.**[36] Therefore, these challenges must be addressed and countered with solutions to prevent the inefficient, fragmented patient care that can result from poor care communication and care coordination. This fragmented care compromises the quality of care patients receive, and most importantly, it increases opportunities for negative outcomes.[37]

BARRIERS TO MEASURING CARE COMMUNICATION AND CARE COORDINATION IN EHRS

Lack of interoperability

Interoperability enables the exchange of health information electronically from one user to another.[7] The **21st Century Cures Act** and **United States Core Data for Interoperability (USCDI)** have been recently released through the Office of the National Coordinator for Health Information Technology (ONC), an agency in the federal government, as well as CMS, to promote more universal interoperability in the future. Additionally, data ownership and permission restrict the ability to share data, which has also limited interoperability efforts to date. With the implementation of the **Health Information Technology for Economic and Clinical Health (HITECH) Act**, ambitious goals to create a more connected healthcare system were set forth. While some goals have been successfully reached, others have been more difficult to achieve due to a lack of functionality and the need for platforms to support the changes. HITECH's introduction of **Meaningful Use** quickly increased EHR adoption rates; however, HITECH's measure of success also presents significant barriers, including a lack of cooperation among stakeholders, burdensome regulations, and physician burnout tied to the technology.[38]

Lack of standards for structured data

Standardized, structured elements and implementation guidelines to support the broader vision of care communication, care coordination, and patient-centered care (e.g., the co-management of longitudinal care plans, transitions of care across care settings, and linkages to community resources) do not yet exist.[39]

Use of unstructured data

Unstructured data are free text in the EHR, such as clinical notes or progress notes with no format limitations on or clear specification of the type of information recorded in these fields. Unstructured data present a challenge because they require additional processing to be transformed into measurable information.

Use of inconsistent coding

The health IT industry does not use standard codes for laboratory results, medication/drug information, or diagnosis/clinical observations consistently. In addition, referrals and self-management plans and goals lack any established standard for how the information should be recorded or coded in the EHR.

Competition in the EHR market

Multiple EHR vendors have been founded, and their expansion has increased competition with one another. There are no incentives encouraging vendors to work collaboratively to create interoperable platforms to share data to facilitate patient care.[39] In some cases, this lack of interoperability among different EHR platforms has led to disjointed and fragmented care. In addition, this can make care communication and care coordination difficult to measure, as different care communication and care coordination activities may be housed in different information systems and may not be accessible for measure development.

Impact of Care Communication and Care Coordination on Social Determinants of Health

Health equity is when all people are able to attain the highest level of health.

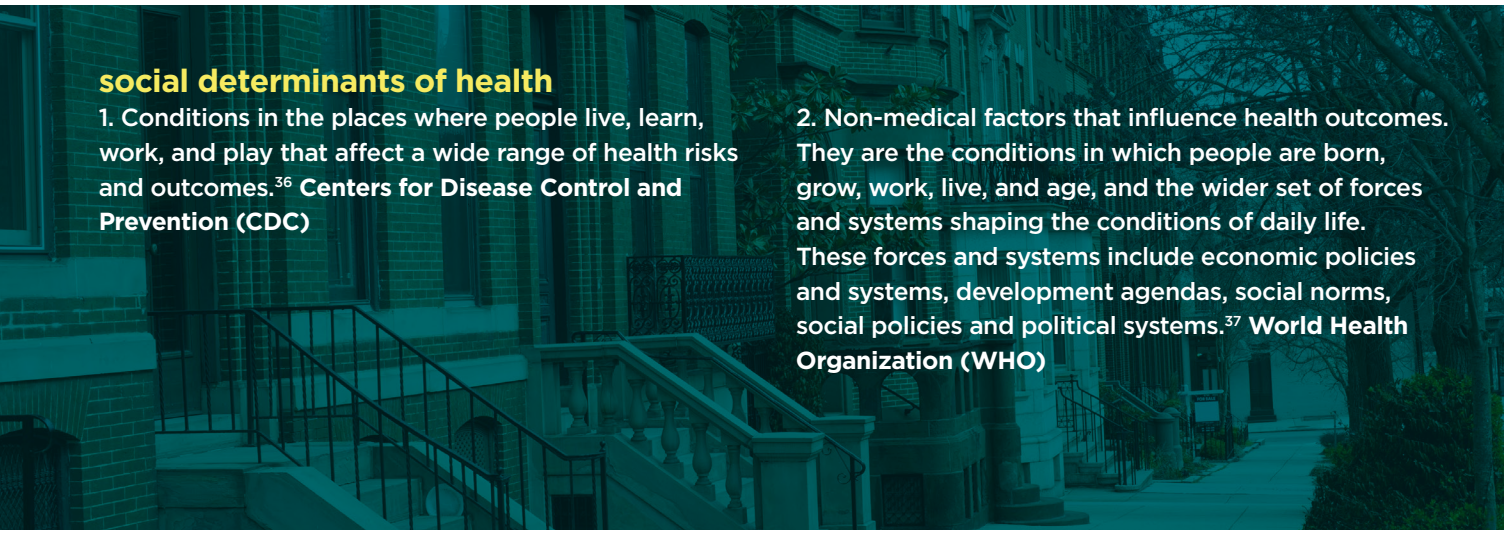
It can be affected more by population-level factors (e.g., physical, social, and policy environments) than individual-level factors (e.g., race, ethnicity, and disability status).[41] To assist with achieving health equity, **Healthy People 2030** identified addressing SDOH as one of its five overarching goals; specifically, the goal is to "Create social, physical, and economic environments that promote attaining the full potential for health and well-being for all."[42] The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) define SDOH in a similar manner.

Historically, there has been a critical connection between care communication and care coordination and SDOH, as services are commonly directed towards families with greater needs, such as housing, insurance, and transportation. The purpose of accurately identifying SDOH is so clinicians can address the effects of SDOH, promote improved health outcomes in individual patients, and coordinate the correct resources to improve health equity. For example, a patient may preferentially use the ED for their care needs because of transportation problems. As a result, the patient may miss out on primary care and prevention, and their chronic medical problems (e.g., high blood pressure and high cholesterol) may go unmanaged. By addressing transportation issues, this may help to remediate chronic care coordination issues and ultimately improve patient outcomes.

EHRs have the potential of addressing SDOH by accomplishing the following tasks:

- Standardizing SDOH data collection
- Collecting and using data for individual-level and population-level risk assessments and interventions; specifically, coordinating specific services to address the identified SDOH issues, including the willingness to participate in interventions and whether the services are received
- Recommending patients for social services and housing assistance and helping to facilitate communication with these services
- Sharing data directly with social service providers

Initiatives to promote the sharing of health information (i.e., interoperablity) across EHRs in relation to SDOH include Interoperability Standards Advisory (ISA), United States Core Data for Interoperablity (USDI), and the Gravity Project.



EXAMPLES OF INITIATIVES TO PROMOTE INTEROPERABILITY OF SDOH DATA IN EHRS

Interoperability Standards Advisory (ISA)
An ONC initiative that establishes data-sharing standards, including exposure to violence, financial resource strain, food insecurity, housing insecurity, level of education, social connection and isolation, and transportation insecurity.[45]

United States Core Data for Interoperability (USCDI)
An ONC initiative that establishes a standard set of health data classes and data elements for nationwide, interoperable HIE through new public health application programming interfaces (APIs).[46]

Gravity Project
A Health Level Seven (HL7) initiative that seeks to address the social risk domains of food insecurity, housing instability and quality, and transportation access across the clinical activities of screening, diagnosis, planning, and interventions.[47]

Despite efforts to encourage the collection of additional nonmedical data, challenges and barriers to collecting and using SDOH data for care communication and care coordination remain. For example, inconsistent language is used when collecting data (e.g., race and ethnicity are not always captured in a standard, accurate manner[48]), or the information is recorded in unstructured clinical notes. Additionally, health systems face challenges in determining who on the healthcare team is responsible for collecting, assessing, and addressing SDOH. There are also digital infrastructure deficiencies, especially in low-income populations or rural settings, thus creating a challenge in addressing SDOH (e.g., poverty) in some communities.[49] Another challenge is the use of machine-learning algorithms, which have the potential to improve care by predicting outcomes in EHRs and providing clinical decision support. Attention will need to be paid to the data used to produce these algorithms, including what data may be missing and whether such algorithms may amplify disparities by preferentially assessing risk or targeting interventions.[50] Additional challenges that patients in these communities can experience include difficulties in accessing their health data due to lack of reliable broadband internet, access to a usual source of care, and provider encouragement of online record use.[51]

Measurement Opportunities

To explore the ability to leverage EHR-sourced measures to assess and improve care communication and care coordination, a measure scan was conducted to identify existing EHR-sourced measures, measures that could be adapted within EHRs, and measures and measure concepts for EHR-based tools.

The scan categorized the measures and measure concepts into either directly or indirectly measuring a care communication and care coordination activity. The measures and measure concepts presented are included as examples only. The full list of measures and measure concepts can be found under **Additional Resources**.

Direct care communication and care coordination activities include measures and measure concepts related to care plans (e.g., care plan documentation, follow-up), medication review/reconciliation, documentation of communication between providers, sharing of health information (e.g., via medical records upon transfers), and the patient/family experience of care coordination.

Indirect care communication and care coordination activities include measures and measure concepts related to hospital admissions, readmissions, unplanned hospital visits (e.g., ED visit, observation, or inpatient admission), and mortality.

EXAMPLES OF CARE COMMUNICATION AND CARE COORDINATION MEASURES AND MEASURE CONCEPTS

NQF Number: 0326
Endorsement Status: Endorsed

Advance Care Plan
Percentage of patients ages 65 years and older who have an advance care plan or surrogate decision maker documented in the medical record or documentation in the medical record that an advance care plan was discussed, but the patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan

Type: Process

Data Source: Claims, Electronic Health Data

Direct or Indirect Activity: Direct

NQF Number: 3188
Endorsement Status: Endorsed

30-Day Unplanned Readmission for Cancer Patients
Rate at which all adult cancer patients covered as Fee-for-Service Medicare beneficiaries have an unplanned readmission within 30 days of discharge from an acute care hospital

Type: Outcome

Data Source: Claims

Direct or Indirect Activity: Indirect

NQF Number: Not Applicable
Endorsement Status: Not Applicable

Medication Errors
Number of medication errors per 10,000 medication orders

Type: Measure Concept

Data Source: Not Applicable

Direct or Indirect Activity: Direct

Electronic Health Records May Present Solutions to Care Communication and Care Coordination Measurement Barriers

While many care communication and care coordination measures were identified in the scan, it is clear that the measurement of care communication and care coordination needs to be further developed to overcome many of the challenges. **EHRs have the potential to accomplish this by allowing for more detailed data for measurement compared to measures that come from insurance claims, thus allowing for more precise specification. In addition, EHRs present the opportunity to measure outcomes that are not as directly observable in claims data.** For example, a patient may be readmitted to the hospital with hypoxia (i.e., low oxygen level) following a hospital discharge for chronic obstructive pulmonary disease (COPD). Information from the EHR could help distinguish whether the readmission occurred for care coordination reasons (i.e., the patient could not arrange for home oxygen) or non-care coordination reasons (i.e., the clinical status of the patient had worsened because of progressive illness). EHR-based tools also hold the promise of being able to both coordinate care and serve as a source of measurement. For example, patient portals are a useful EHR-based tool and could be used as a performance measure directly (i.e., the patient's experience with using a patient portal).

A Path Forward

To promote seamless care across and within healthcare settings, effective care communication and care coordination are vital.

Improving care communication and care coordination can improve the quality of patient care, patient experience, and outcomes for patients, including potentially reducing costs and avoidable complications. There is a need for valid and reliable measures of care communication and care coordination to hold organizations accountable for evidence-based interventions and outcomes. Yet measuring these concepts is difficult due to two fundamental measurement issues: (1) the context dependence of care communication and care coordination activities and (2) the influence of clinical, patient, system, and community factors on care communication and care coordination outcomes (e.g., readmissions). EHR data and EHR-based tools may provide some solutions. The advantages of using EHR data and EHR-based tools include the presence of detailed, real-time, or near real-time data that can be used for quality measurement and feedback. The data from EHRs are richer than the traditionally used claims-based data sets in quality measurement. Detailed EHR data can be used to measure care communication and care coordination activity more directly and to gather data on more detailed outcomes. In addition, EHR-based tools can be used to both implement and track care communication and care coordination activities and serve as data inputs for quality measurement itself. EHRs can also be leveraged as tools to gather SDOH data, which can be integrated into EHR-based tools to identify and coordinate community resources and increase health equity. SDOH data may also be useful for measure development. Despite these advantages, challenges related to using EHR data and EHR-based tools continue. They include variable interoperability across health IT platforms and a lack of industry-wide standards for data elements, data structure, information transfer, and the use of unstructured data elements, which can make measure development difficult.

To drive quality improvement and outcomes, the findings from this Environmental Scan Report will inform the future creation of **consensus-based recommendations** for EHR-based care communication and coordination measurement in an all-payer, cross-setting, and fully electronic manner.

Additional Resources

Key Takeaways

- Care communication and care coordination are separate but interrelated concepts, as communication among everyone involved in a patient's care is essential for care to be coordinated effectively.
- Care communication is the transfer of information related to patient care. Care coordination is the deliberate synchronization of activities and information to improve health outcomes to ensure patient and family needs and preferences for healthcare and community services are met over the course of their treatment and care.
  - » Examples of care communication and care coordination activities include improving patient and caregiver engagement in the coordination of their care, developing and implementing care plans that include the patient's goals, enhancing transitions in care, promoting cross-disciplinary coordination to integrate care, using closed-loop communication, deploying risk assessments and stratification, participating in case management, encouraging patients and caregivers to use navigation resources, using shared decision making, and delivering team-based care.
- Effective care communication and care coordination have been discussed and researched for years; however, the ability to measure and improve these concepts continues to be a significant healthcare topic. Measuring care communication and care coordination is difficult due to the context dependence of the activities and the influence of multiple factors on the outcomes of these activities.
- EHRs present an opportunity to both facilitate and measure care communication and care coordination. One of the benefits of using EHRs for care communication and care coordination measurement is EHRs can provide richer data than the traditionally used claims-based data sets. However, to truly maximize the potential benefits of using EHRs, several barriers need to be overcome. These barriers include insufficient EHR interoperability, a lack of standards for structured data, increased use of unstructured data fields, and inconsistent coding.
- Specific recommendations for leveraging EHR-sourced measures to improve care communication and coordination will be developed by NQF in future iterations of this project.

LITERATURE REVIEW

The Literature Review is the longer, technical overview of current issues regarding the use of EHRs for care communication and coordination activities and how EHR data are used for quality measurement.

MEASURE SCAN

The Measure Scan is the information provided for 222 measures related to care communication and coordination.

GLOSSARY OF TERMS

REFERENCES

EHR Care Coordination Committee Members

Richard Christopher Antonelli, MD, MS
Medical Director of Integrated Care
Department of Accountable Care and Clinical Integration and
Department of Pediatrics
Boston Children's Hospital
Harvard Medical School
Boston, MA

Gerri Lamb, PhD, RN, FAAN
Professor
Arizona State University
Tucson, AZ

Kathleen Balestracci, PhD, MSW
Senior Health Outcomes Researcher
Yale CORE
New Haven, CT

David Buriank
VP, Quality and Clinical Performance
Help at Home, LLC
Chicago, IL

Brian Buys, RN, MBA
VP, Clinical
PointClickCare
Fairpoint, NY

Sherri Costa, MS, RN, AOCNS
Regional Manager Oncology Support Services
Ascension
Milwaukee, WI

Cynthia Cullen, MS, MBA, PMP
Principal Program Analyst
Mathematica
Princeton, NJ

Keith Horvath, MD
Sr. Director, Clinical Transformation
Association of American Medical Colleges
Washington, DC

David Key
SVP Strategy & Operations
Select Medical
Mechanicsburg, PA

Joseph Kunisch, PhD, RN-BC, CPHQ
Enterprise Director of Clinical Quality Informatics
Harris Health
Bellaire, Texas

Russell Leftwich, MD
Adjunct Assistant Professor
Vanderbilt University
Cortaro, AZ

Michael Lieberman, MD, MS
Medical Director, Population Health
Oregon Community Health Information Network (OCHIN)
Portland, OR

Brent Peery, DMin
Vice President for Chaplaincy Services
Memorial Hermann Health System
Houston, TX

Rebecca Perez, MSN, RN, CCM
Sr. Manager of Education and Strategic Partnerships
Parthenon Management Group
Case Management Society of America
Brentwood, TN

Ann Polich, MD, MPH, MBA
Chief Medical Officer
Nebraska Health Information Initiative (NEHII)
Omaha, NE

Walter Rosenberg, MSW, MHSM, LCSW
Director, Social Work and Community Health
Rush University Medical Center
Chicago, IL

Stacie Schilling
Research Associate
IMPAQ International
Washington, DC

Suellen Shea, MSN, RN-BC, LSSGB, CPHQ, CPPS
Senior Clinical Consultant
Cerner
Kansas City, MO

Colleen Skau, PhD
Assistant Director, Performance and Quality Measures Portfolio
College of American Pathologists
Washington, DC

Alexis Snyder
Patient Advocate
Brookline, MA

Maurine Stuart
Patient Advocate
Snowshoe, WV

Jason Wiesner, MD, MBA
Diagnostic Radiologist
Sutter Health
Sacramento, CA

Dorothy Winningham
Patient Family Advisor
Winn Leadership Group, LLC
Patient & Family Centered Partners
Midlothian, VA

Kim Yu, MD, FAAFP
Regional Medical Director
Aledade
Mission Viejo, CA

Andrew Zinkel, MD, MBA
Associate Medical Director of Quality
Health Partners
Bloomington, MN

FEDERAL LIAISONS

Joel Andress, PhD
EHR Technical Lead, eCQM Measure Development Lead
Division of Quality Measurement, CMS

Tiffany Gillis Brown, JD
Policy Analyst
Office of Planning, Analysis, and Evaluation (OPAE), HRSA

Kyle Cobb, MS
Branch Chief Tools & Testing
Office of Technology, ONC

Chris Dymek, EdD
Director, Digital Healthcare Research Division
Center for Evidence and Practice Improvement, AHRQ

Tara McMullen, PhD, MPH
Associate Director
Opioid Safety, VA

Carly Medosch, MBA, PMP
Health IT Lead, Division of Advanced Primary Care
Seamless Care Model Group, CMMI

Francine Sandrow, MD, MSSM, FAMIA
Chief Health Informatics Officer
Office of Community Care, VA

Kenneth P. Yale, DDS, JD
Acting Chief
TRICARE Health Plan, DOD