

December 15, 2019

To Whom it May Concern,

At the October Colorado eHealth Commission meeting Colorado Health Care Policy and Finance presented on the Hospital Transformation Program (HTP). After some follow-up discussions it became clear that the HTP team would appreciate a review of the measures proposed and feedback on the approach from the eHealth Commission and Office of eHealth Innovation (OeHI).

This submission of comments is on behalf of Colorado's Office of eHealth Innovation (OeHI), an Office of the Governor and Lt. Governor, and the Colorado eHealth Commission - a governor appointed advisory committee to OeHI and steering committee for [Colorado's Health IT Roadmap](#) efforts. To cohesively explain the impact to Colorado, OeHI and the eHealth Commission are submitting comments together. This feedback is the collaborative product of our internal team and key stakeholders

During the creation, planning, and implementation of Colorado's Health IT Roadmap stakeholders articulated how difficult and complex reporting quality measures can be at a provider level. As a result-Reducing Provider Burden related to Quality Measurement Reporting is one of the Health IT Roadmap's key initiatives and has been reinforced as a priority by the Governor and Lt. Governor's Office in 2019 and will remain so going into the future. To support the reduction of provider burden, OeHI and the eHealth Commission are funding the continued work of Health Data Colorado to support reducing provider burden for quality measurement for use cases for Medicaid and Medicare. Health Data Colorado is a collaboration between CCMCN, CORHIO, and QHN. The HDCo collaboration represents the State's HIEs and the State's Federally Qualified Health Centers (FQHCs) technical partner and will help providers send data once and report to many local and national entities. The first use case is focused on Medicaid or Health Care Policy and Financings Alternative Payment Model for primary care providers. As part of this effort, OeHI and the eHealth Commission are considering future investments and alignment of Health Data Colorado (HDCo) HIE capabilities and the broader Provider Burden Reduction in Quality Measurement Initiative as it pertains to the HTP and other programs lead by Medicaid and Medicare.

It's important to keep in mind the challenges faced by Colorado's rural communities. Due to the critical access hospitals limitations in workforce, time, resources and financial reimbursement and already limited access for the populations they support we caution the HTP to provide special consideration. Encouraging the collection of data and involvement in the program to showcase and provide opportunities for them to collaborate on quality improvement are important but it would be an unjust burden to place monetary risk on them. These challenges further necessitate the alignment of HTP with of the inclusion and exclusion criteria that Medicare uses as the standard for HTP measures.

Though HL7 standards and ADT's have been around for a very long time they were primarily used as means to communicate demographic patient data. OeHI and the eHealth Commission sees this as another area of potential alignment that could help ease provider reporting burden. Use of ADTs for transmitting valuable clinical data has been accelerated by Meaningful Use/Promoting Interoperability initiative by the Centers for Medicare and Medicaid (CMS), though the standards have long supported transmission of such clinical data via ADTs. It is recommended that HTP develop a detailed HL7 standard and implementation guide for hospital ADTs as part of the HTP measure

requirements to ensure all providers and payers have quality, timely, and actionable data regardless of where the patient is seen. Other states such as the state of Michigan have implemented standards for ADTs and have seen a reduction in the time and money spent normalizing the data. As a result of quality and consistent data available to providers and payers, patients receive more precise and preventative care, resulting in better health outcomes and reduced costs. For more information, including an analysis of the measures encouraged later in this document, and examples on HL7 Implementation Guides and ADT standards from other states please refer to Appendix A.

While ADT and HL7 standards are important components of a broader system to provide a higher quality of clinical data, the measure that can be calculated from that data is the end goal. The fact remains that Medicaid claims measures (as denoted in Appendix B) will require data not currently collected by the HIE partners of Health Data Colorado without the addition of claims data. The potential exists that claims data will be part of future iterations of the HIEs and at that time, these measures could be calculated on behalf of the hospitals. The technology and expertise needed to calculate the claims measures is significantly different than what is currently included in the current eCQM solutions.

Health Data Colorado which is a collaboration between Colorado's Health Information Exchanges-CORHIO and QHN and Federally Qualified Health Center technical partner CCMCN will be able to assist the hospitals with the structural self-reported measures in some instances. Process measures are not as clear cut, but occasionally require clinical data or data exchange with outside entities. Health Data Colorado can provide hospitals assistance in this effort. They are able to assist the hospitals with the measures requiring clinical data in many instances. There is a potential opportunity to leverage a solution being envisioned for combined manual and electronic eCQM reporting for programs such as HTP. This tool could be enabled to manage the reporting and the analytic needs of the HTP program as well as the APM program.

It is in the best interest of the state that further efforts around these measures need to be prioritized in alignment with Colorado's Health IT Roadmap. Measures of priority needs to fall into one of four categories; reducing reporting burden, improving data quality to ensure data for quality improvements, better care delivery and reduced costs. While measures may be addressed via a solution like Health Data Colorado, there are clearly measures that are better than others. To improve the data being reported and reduce provider burden, the eHealth Commission and Office of eHealth Innovation recommend that future measures be based on what can be extracted and calculated in systems providers are currently using, and more aligned with the electronic health records and health information exchange data. Many of the proposed measures for HTP will require manual tracking and manual solutions that are outside of clinical and administrative workflows and processes.

As a result of the manual reporting the quality teams are spending additional time creating and tracking these measures because they are not widely available in the electronic health records and health information exchanges. By leveraging approaches and technologies implemented through Health Data Colorado that are aligned with this philosophy, hospitals can spend less time manually calculating measures and more time on quality improvement and care delivery. Rather than each hospital having a separate team calculate the same measure, one coordinated effort such as this can provide a means to calculate measures with consistent processes and methodologies that is more efficient. This is especially true for rural providers and clinicians who may not have the technical resources to do the manual measure calculation. It is also important to highlight there is a lot of work that also is required to ensure measures can be electronically calculated. Leveraging validated and state approved solutions to do the measure calculations electronically is recommended to endure provider burden is reduced and data quality is improved over time.

Regarding the current measures proposed by HTP, OeHI and the eHealth Commission had the measures reviewed by HealthTech Solutions, Health Data Colorado, and other key stakeholders. To best prioritize measures OeHI, in collaboration with the team, developed a methodology in alignment with Colorado's Health Roadmap. With the Roadmap in mind the team established that measures of priority needs to fall into one of four categories that it identifies; reducing reporting burden, improving data quality to ensure actionable data for quality improvements, better care delivery, and reduced costs. The analysis that follows reflects that and is an effort to capture the best path forward for the state of Colorado.

In alignment with the Governor and Lt. Governor priorities, it is recommended HTP focus on measures for suicide prevention and readmission rate reduction as these measures can be reported electronically via the EHR and HIEs.

*Pediatric Screening for Depression in Inpatient and Emergency Department Including Suicide Risk (SW-BH2)* should be emphasized as a measure due to the potential gains that could be found by improving data quality and the state's increased focus on suicide prevention. Colorado consistently ranks in the top quartile of states for suicide rate and the State's Suicide Prevention Taskforce is focused on addressing this critical issue. Among teens, the United Health Foundation found that Colorado has the highest increase in the teen suicide rate in the nation since 2016. While complications of assessment practices can make this measure difficult to collect, this measure is quite literally a matter of life and death in some cases by providing an opportunity for suicide prevention. As a result, performance on it should be emphasized.

To ensure better care delivery at a lower cost it is suggested HTP focus on both *30-day All-Cause Risk Adjusted Hospital Readmission (SW-RAH1)* and *Pediatric All-Condition Readmission Measure (SW-RAH2)*. Both measures are well defined and in common usage and in turn result in fairly consistent data that aids across morbidities. These measures also address both quality of care and costs resulting in them addressing three of the four areas in the Roadmap. In addition to these measures, it is recommended the prioritization of *Readmission Rate for a High Frequency Chronic Condition - 30 day adult/30 day pediatric (VP1)*. This measure addresses complicated co-morbidities that have the ability to limit the risk of new acute complications. To an even greater degree than SW-RAH1 and SW-RAH2 the co-morbidities addressed by VP1 are major cost driver which brings us to our final effort to reduce costs.

In addition to VP1, addressing costs often means addressing emergency department utilization. With that in mind we would prioritize *Emergency Department Visits for Which the Member Received Follow-Up Within 30 Days of the ED Visit (RAH2)* in the interest of cost containment. The follow-ups also encourage better care in addition to addressing the avoidable hospital costs.

It is also recognized by the eHealth Commission and OeHI the importance of coordinating whole person care also known as social determinants of health. To track and report these measures providers and clinicians must be able to document and report within their EHRs and other solutions in a manner that doesn't create data silos and unconnected solutions or undue burden on the providers. For this work, OeHI and the eHealth Commission recognize the State's Health Information Exchanges as critical components and partners to ensure information is shared statewide in a quality manner to address community needs.

To see more details on measure classification, refer to Appendix B for a summary of the reviewed the measures and recommendations. In addition to Appendix A we've produced some technical specifications and concerns that we think might be of benefit to HCPF that you can find by measure in Appendix C.

Thank you for your careful consideration in reviewing and applying the comments herein from Colorado's OeHI and eHealth Commission. If you have any questions, please contact the Office of eHealth Innovation.

Thank you,

A handwritten signature in black ink, appearing to read "Carrie Paykoc". The signature is fluid and cursive, with the first name "Carrie" and last name "Paykoc" clearly distinguishable.

Carrie Paykoc  
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## **Appendix A: HL7 and ADT Data**

An HL7 feed is a streamlined way of receiving messages/data into a system. ADT, ORU and ORM messages are the most common HL7 messages. ADT stand for “admissions, discharges, and transfers”. These messages contain a wealth of information that can help the receiving entity determine the patient demographics, diagnosis information etc.

Health Level-7 (HL7) was created by Health Level Seven International, a non-profit organization. HL7 are a set of international standards used to transfer and share data between various healthcare providers. More specifically, HL7 helps bridge the gap between health IT applications and makes sharing healthcare data easier and more efficient when compared to older methods.

There are many different types of ADT messages, such as:

- Registering a patient
- Discharging a patient
- Merging patient files to avoid duplication

An ADT feed is one way an application or a provider can get all the information from a clinic or hospital information system (HIS). With the constant updating of a client, customer or patient’s data, ADTs comprise the most HL7 messaging traffic. Change of address, addition of a middle name, and addition of next of kin are all examples of the type of data updates that make up ADT messages.

A trigger event is the underlying reason for transmitting a message, e.g. “Patient has been admitted to the hospital”, “Patient address has changed”, or “Patient has moved from room 23 to room 29”. As soon as a trigger happens, a message is sent to all systems that have an interest in that particular type of information, enabling the receiving application to synchronize its database with the data as known by the sender of the message.

Examples of ADT trigger events include:

- A01: Admit notification – an inpatient encounter has started. The patient has been admitted and has been assigned to a location (room or bed)
- A02: Transfer notification – a patient has been transferred from one location to another one.
- A03: Discharge notification – the encounter has ended. The prior location assigned to the patient is made available for use by another patient.
- A04: Patient registration notification – an outpatient encounter has started.
- A05: Pre-admit a patient notification - the pre-admission process of a patient has started; registration of a non-admitted patient.
- A08: Update patient information notification – unspecified details of the encounter or the patient demographics data have changed. This trigger event represents a “other changes” category if a more suitable Axx trigger event doesn’t exist.
- A13: Cancel discharge notification – the end of an inpatient encounter, for which a previous discharge notification message was sent, has been cancelled.
- A40: Merge patient identifier list notification – two or more patient records, each identified using a different set of patient identifiers, have been merged.

The message structure may vary depending on the trigger event. A trigger event related to the “transfer of a patient” has a different structure than a “change of a person’s address”, or a “merge two patient records”. Below are a few example segments (in HL7 version 2 all messages are comprised of multiple segments)

- PID: Patient ID – contains information which identifies the patient (e.g. name, gender, birth date, patient identifier, national person identifier) as well as patient demographics information (e.g. address, telephone numbers).
- PV1: Patient Visit – contains information about the encounter (a.k.a. Visit). This segment includes (amongst other things) the type of encounter, its start/end date and time, the admitting and attending physicians.

HL7 ADT messages (Admission, Discharge and Transfer) are implemented by almost all applications used within a hospital setting. The ADT trigger events typically occur in the administrative system of the hospital (Hospital Information System - HIS or Patient Administrative System - PAS). The resulting messages are sent to all ancillary systems enabling them to synchronize their application database with the latest information as available in the main administrative system.

## **Measures Calculation Overview**

### SW-RAH1 - 30-day All-Cause Risk Adjusted Hospital Readmission

For Medicaid patients 18 years of age and older (18-64 years), the number of acute inpatient stays during the measurement year that were followed by an unplanned acute readmission for any diagnosis within 30 days and the predicted probability of an acute readmission.

Analysis:

HL7 ADT data can be used to determine this measure.

- A patient's age can be calculated by using PID 7 (DOB), this would help determine if the patient is in the age range for this measure.
- Determine if ADT is coming from a hospital based on MSH 4.2 OID or NPI
- Determine if the patient was admitted based in an ADT A01 event and if the event is an inpatient event based on PV1.2
- Determine if the patient was discharged based on an ADT A03 event
- Determine the admit data and discharge date based on PV1.44 and PV1.45 of the ADT A03
- If there is another ADT 01 event from a hospital or ER which can be determined by MSH 4 then that would indicate a readmission
- The Admit date on the ADT 01 and the discharge date on the previous ADT A03 can be used to calculate if the new event occurred within 30 days.
- The reason for readmission can be determined based on DG1.3 of the ADT 01 and A03 messages that can be used to determine if the admission was for the same diagnosis

### SW-RAH2 – Pediatric All-Condition Readmission Measure

This measure calculates case-mix-readjusted readmission rates, defined as the percentage of admissions followed by one or more readmissions within 30 days, for patients less than 18 years old. The measure covers patients discharged from general acute care hospitals, including children's hospitals.

Analysis:

HL7 ADT data can be used to determine this measure.

- A patient's age can be calculated by using PID 7 (DOB), this would help determine if the patient is below 18 years of age for this measure.
- Determine if ADT is coming from a hospital or Emergency department based on MSH 4.2 OID or NPI
- Determine if the patient was admitted based on an ADT A01 event
- Determine if the patient was discharged based on an ADT A03 event
- Determine the admit date and discharge date based on PV1.44 and PV1.45 of the ADT A03
- If there is another ADT 01 event from a hospital or ER which can be determined by MSH 4 then that would indicate a readmission
- The Admit date on the ADT 01 and the discharge date on the previous ADT A03 can be used to calculate if the new event occurred within 30 days.
- The reason for readmission can be determined based on DG1.3 of the ADT 01 and A03 messages that can be used to determine if the admission was for the same diagnosis

SW-BH2 - Pediatric screening for depression in inpatient and emergency department (ED) including suicide risk

Percent of patients under the age of 18 years (pediatric) screened for depression, including suicide risk, during an inpatient or ED encounter.

Analysis:

HL7 ADT data and HL7 RDE (Pharmacy Order messages) can be used to calculate this measure

- A patient's age can be calculated by using PID 7 (DOB), this would help determine if the patient is below 18 years of age for this measure.
- Determine if ADT is coming from a hospital based on MSH 4.2 OID or NPI
- Determine if the patient was admitted based on an ADT A01 event and if the event is an inpatient event based on PV1.2
- Determine if the patient has a Diagnosis of depression or suicide based on DG1.3
- Determine if the patient had a Pediatric screening for depression based on PR1.3
- Determine if the patient was prescribed any depression medication using the RDE messages.

Note: RDE messages are not required and this measure can be calculated based on only ADT data. RDE data can be used if available as a further confirmation for this measure.

### VP1 – Readmission rate for a high frequency chronic condition – 30-day

Percentage of Medicaid patients discharged who have a high frequency chronic condition who are readmitted to the hospital within 30 days. In the pediatric population, the report will calculate a case-mix-adjusted, 30-day all-condition readmission for patients ≤18 years old. A high frequency chronic condition is defined as hypertension, diabetes mellitus, heart failure, COPD and asthma.

#### Analysis:

HL7 ADT data can be used to determine this measure.

- A patient's age can be calculated by using PID 7 (DOB), this would help determine if the patient is below 18 years of age for this measure.
- Determine if ADT is triggered from a hospital based on MSH 4.2 OID or NPI
- Determine if the patient was admitted based on an ADT A01 event and if the event is an inpatient event based on PV1.2
- Determine if the patient has a high frequency chronic condition based on DG1.3
- Determine if the patient was discharged based on an ADT A03 event
- Determine the admit date and discharge date based on PV1.44 and PV1.45 of the ADT A03
- If there is another ADT 01 event triggered from a hospital or ER which can be determined by MSH 4 then that would indicate a readmission
- The Admit date on the ADT 01 and the discharge date on the previous ADT A03 can be used to calculate if the new event occurred within 30 days.
- The reason for readmission can be determined based on DG1.3 of the ADT 01 and A03 messages that can be used to determine if the admission was for the same diagnosis

### RAH2 – Emergency Department (ED) visits for which the member received follow-up within 30 days of the ED visit

Percentage of level 4 and 5 Medicaid patient emergency encounters where the patient is discharged without being admitted to the hospital or admitted to another hospital in which the patient has a follow up visit with a clinician within 30 days of discharge.

#### Analysis:

HL7 ADT data can be used to determine this measure.

- Determine if ADT is triggered from an Emergency Department based on MSH 4.2 OID or NPI
- Determine if the patient was admitted based on an ADT A01 event and if the event is an inpatient event based on PV1.2
- Determine if the patient was discharged based on an ADT A03 event
- Determine the admit date and discharge date based on PV1.44 and PV1.45 of the ADT A03
- Determine if there is another ADT 01 event triggered from an ambulatory provider which can be determined by MSH 4 NPI or OID

- The Admit date on the current ADT 01 and the discharge date on the previous ADT A03 can be used to calculate if the new event occurred within 30 days.

## **Sample HL7 Guides**

<https://mihin.org/wp-content/uploads/2016/09/MiHIN-UCIG-ADT-Notifications-PUBLISHED-v35-07-07-16.pdf>

<https://healthinevada.org/wp-content/uploads/2016/01/OCIE-HL7-Message-Specs-ADT-3.1-NEW.pdf>

HL7 specifications can be found at

<https://www.hl7.org/>

## **ADT Standards Recommendations**

### Nebraska

<https://nehii.org/>

### Michigan

<https://mihin.org/admission-discharge-transfer-notifications-use-case/>

### CRISP (Maryland)

<https://crisphealth.org/services/encounter-notification-services-ens/>

**Appendix B: Measure Analysis**

Measure	Identifier	Can be reported via EHR?	Summary
30-day All-Cause Risk Adjusted Hospital Readmission*	SW-RAH1	Y	<ul style="list-style-type: none"> <li>• Avoid unplanned readmissions</li> <li>• Provides improvement in coordination of care and communication</li> <li>• Promotes an efficient and high quality of care</li> <li>• Readmissions may be unavoidable, but some may be due to lack of discharge planning and transitional care</li> <li>• Hospitals do not have direct access to other hospital admissions data</li> <li>• HIE could offer products that provide reports of admission, and to other hospitals, to aid in prevention of readmission, dependent on HIE connection to hospitals</li> </ul>
Pediatric All-Condition Readmission Measure*	SW-RAH2	Y	<ul style="list-style-type: none"> <li>• Avoid unplanned readmissions</li> <li>• Provides improvement in coordination of care and communication</li> <li>• Promotes an efficient and high quality of care</li> <li>• Help reduce the severity of the burden of condition on children and their families (loss of work time, or sibling school /daycare time)</li> <li>• Identify disparities between race/ethnicity and age</li> <li>• Help reduce increased potential for infections</li> <li>• Avoid negative development effects on the child including isolation, anxiety etc. for chronically ill patients</li> <li>• Hospitals do not have easy access to other hospital admissions</li> <li>• HIE could potentially offer products that provide reports of first admission to aid in prevention of readmission, dependent on HIE connection to hospitals</li> </ul>
Connection to PCMP prior to discharge and initial appointment made and notification to the RAE	RAH1		<ul style="list-style-type: none"> <li>• Dependent on hospital workflow, if not an integrated process would be reliant on the patient scheduling appointment, as directed</li> <li>• HIEs could build a notification for this effort, but this would take development time.</li> </ul>

\* Denotes Medicaid Claims Measure

Emergency Department Visits for Which the Member Received Follow-Up Within 30 Days of the ED Visit*	RAH2	Y	<ul style="list-style-type: none"> <li>• Not providing follow-up care after the ED visit could worsen the condition</li> <li>• Helps reduce the cause to return to the ED, hence reducing costs and improving quality of care</li> <li>• Dependent on hospital workflow, if not an integrated process would be reliant on the patient scheduling appointment, as directed</li> <li>• HIE could offer products that provide reports of ED visits to aid in follow up, dependent on HIE connection to hospitals and primary care</li> </ul>
Home Management Plan of Care (HMPC) Document Given to Pediatric Asthma Patient/Caregiver (eCQM)	RAH3		<ul style="list-style-type: none"> <li>• Dependent on EHR--would be potentially be available in practice EHR but not typically in the hospital EHR</li> </ul>
Percentage of Patients with Ischemic Stroke who are Discharged on Statin Medication (eCQM)	RAH4		<ul style="list-style-type: none"> <li>• HIE's can potentially provide event-based reports to help workflow-</li> <li>• Would require deeper analysis</li> </ul>
Social Determinants of Health Screening and Notification	SW-VP1		<ul style="list-style-type: none"> <li>• Sometimes available and sometimes not- HIEs could provide information as available but it is inconsistent. This is work that is under development but fully completed data for measuring may not be available for months/years.</li> </ul>
Readmission Rate for a High Frequency Chronic Condition - 30 day adult/30 day pediatric*	VP1	Y	<ul style="list-style-type: none"> <li>• Provides management of co-morbidities</li> <li>• Transition of care can focus on the chronic condition to reduce the risk of new acute complications</li> <li>• Identifies the need for ongoing intervention</li> <li>• Hospitals do not have easy access to other hospital admissions</li> <li>• HIE could potentially offer products that provide reports of first admission to aid in prevention of readmission, dependent on HIE connection to hospitals</li> <li>• HIE dependent on sending facility providing diagnosis or problem in the ADT to provide ability to report specific list of chronic conditions <ul style="list-style-type: none"> <li>○ Subject to data that is received from sending facility- opportunity to improve source data</li> </ul> </li> </ul>
Pediatric Bronchiolitis – Appropriate Use of Testing and Treatment*	VP2	Y	<ul style="list-style-type: none"> <li>• Reduces progress to severe disease</li> <li>• Avoid long term risks with bronchiolitis and other complications</li> <li>• Provides better care delivery</li> <li>• Similar to pharyngitis eCQM measure</li> </ul>

\* Denotes Medicaid Claims Measure

			<ul style="list-style-type: none"> <li>• HIE could potentially offer products that provide reports, dependent on HIE connection to hospitals</li> <li>• HIE dependent on sending facility providing diagnosis or problem in the ADT to provide ability to report specific list of chronic conditions</li> <li>• Subject to data that is received from sending facility</li> </ul>
Pediatric Sepsis – Time to First IV Antibiotic in the Emergency Department Early Identification	VP3		<ul style="list-style-type: none"> <li>• Most EHRs have ability to track time of antibiotic and identification of Sepsis</li> </ul>
Screening for Transitions of Care Supports in Adults with Disabilities	VP4		<ul style="list-style-type: none"> <li>• If this data is coded, it could potentially be shared. This would require analysis and likely measure development.</li> </ul>
Reducing Neonatal Complications	VP5		
Screening and Referral for Perinatal and Post-Partum Depression and Anxiety and Notification of Positive Screens to the RAE	VP6		<ul style="list-style-type: none"> <li>• Screening typically available in EHRs</li> <li>• Notification of positive screening likely difficult for most EHRs</li> </ul>
Development of a collaborative discharge planning or notification process with the appropriate RAE's for eligible patients with a diagnosis of mental illness or substance use disorder (SUD) discharged from the hospital or emergency department.	SW-BH1		
Pediatric Screening for Depression in Inpatient and Emergency Department Including Suicide Risk	SW-BH2	Y	<ul style="list-style-type: none"> <li>• Provides an opportunity for suicide prevention</li> <li>• Identifies risk levels and discuss suicide risk with the family while engaging in prevention efforts</li> <li>• Initiate early prevention strategies to avoid later suicide attempts</li> <li>• Use informal assessment practices</li> <li>• Perform clinical interventions to track acute suicide risks</li> <li>• Dependent on what sending facility is sharing with HIE <ul style="list-style-type: none"> <li>○ Would require additional analysis</li> </ul> </li> </ul>
Using Alternatives to Opioids (ALTO's) in Hospital Emergency Departments: 1) Decrease Use of Opioids 2) Increase Use of ALTO's	SW-BH3		<ul style="list-style-type: none"> <li>• This is coded data but would likely require a development process to segregate.</li> </ul>
Screening, Brief Intervention, and Referral to Treatment (SBIRT) in the Emergency Department	BH1		<ul style="list-style-type: none"> <li>• SBIRT limited in EHRs-most require custom template</li> </ul>
Initiation of Medication Assisted Treatment (MAT) in Emergency Department	BH2	Y	<ul style="list-style-type: none"> <li>• ED may be the optimal location for screening and intervention</li> <li>• Achieve higher rates of treatment engagement and fewer self-reported days of illicit opioid use as compared to SBIRT groups</li> </ul>

\* Denotes Medicaid Claims Measure

			<ul style="list-style-type: none"> <li>• Provide an effective means of intervention from buprenorphine-naloxone treatment</li> <li>• Will require additional analysis for data elements sharable/reportable via HIE</li> </ul>
Hospital Index	SW-COE1		
Increase the successful transmission of a transition record, such as an ADT notification, to a patient's primary care physician or other healthcare professional within 24 hours of discharge from an inpatient facility.	COE1	Y	<ul style="list-style-type: none"> <li>• Better transition of patient care</li> <li>• Avoid breakdown in care post-discharge causing additional complications</li> <li>• Avoid rehospitalizations and associated costs</li> <li>• Challenges could be interoperability between the EHR systems</li> <li>• HIE products are available to be delivered based on practice member file</li> </ul>
Implementation/Expansion of Telemedicine Visits	COE2		
Implementation/Expansion of e-Consults	COE3		
Energy Star Certification Achievement and Score Improvement for Hospitals	COE4		
Severity Adjusted Length of Stay (LOS)	SW-PH1		
Increase Access to Contraceptive Care – Long Acting Reversible Contraceptive (LARC) *	PH1	Y	<ul style="list-style-type: none"> <li>• Ensuring women have access to a contraceptive method of choice during the post-partum period</li> <li>• ACOG council states that provision of contraception post-partum may reduce short-term and unintended pregnancies</li> <li>• Provides an opportunity to include contraceptive counselling</li> <li>• Increase access</li> <li>• Dependent on data received from sending facility</li> <li>• Dependent on EHR ability to create report</li> </ul>
Increase Access to Contraceptive Care – Long Acting Reversible Contraceptive (LARC) for Adolescents	PH2	Y	<ul style="list-style-type: none"> <li>• Ensuring women have access to a contraceptive method of choice during the post-partum period</li> <li>• ACOG council states that provision of contraception post-partum may reduce short-term and unintended pregnancies</li> <li>• Provides an opportunity to include contraceptive counselling</li> <li>• Increase access</li> <li>• Dependent on data received from sending facility</li> <li>• Dependent on EHR ability to create report</li> </ul>
Increase the Percentage of Patients who had a	PH3		

\* Denotes Medicaid Claims Measure

Well-Visit within a Rolling 12-month Period			
Increase the Number of Patients Seen by Co-Responder Hospital Staff	PH4		
Improve Management Cultural Competency	PH5		

\* Denotes Medicaid Claims Measure

### **Appendix C: Measure Technical Review**

#### *Emergency Department (ED) Visits for Which the Member Received Follow-Up Within 30 Days of the ED Visit*

<b>RAH2</b>	Emergency Department (ED) Visits for Which the Member Received Follow-Up Within 30 Days of the ED Visit
<b>Definition</b>	Percentage of level 4 and 5 Medicaid patient emergency encounters where the patient is discharged without being admitted to the hospital or admitted to another hospital in which the patient has a follow up visit with a clinician within 30 days of discharge
<b>Measure Steward</b>	Colorado Department of Health Care Policy and Financing
<b>Data Source</b>	Medicaid Claims
<b>Data Collection Methodology</b>	Claims analysis
<b>Numerator</b>	Medicaid patients with a level 4 or 5 emergency encounter not resulting in a hospital admission with a follow up visit with a clinician within 30 days.
<b>Denominator</b>	Medicaid patients with a level 4 or 5 emergency encounter not resulting in a hospital admission.
<b>Exclusions</b>	1. Patients that leave against medical advice (AMA) 2. Patients not continuously enrolled for 30 days after the ED visit
<b>Target Population Notes</b>	Adult and Pediatric Medicaid
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	ED level 4 and 5 codes are 99284 and 99285 Ambulatory visit defined by specific E&M codes or provider types
<b>Risk Adjustment</b>	Not applicable
<b>Timing and Time Intervals</b>	Annual
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Percentage
<b>Additional Considerations</b>	This measure would require hospitals to work with RAE's to ensure optimal patient access and follow up. Additional claim type definition Claim Type Code include Outpatient Xover Claims ( C ), Outpatient Claims ( O ) and Revenue Code include ('0450','0451','0452','0456','0459','0981') or Claim Type Code include Professional Xover Claims ( B ), Professional Claims ( M ) and Procedure Codes between '99281' AND '99285' or Claim Type Code include Professional Xover Claims ( B ), Professional Claims ( M ) and Place of Service Code = '23' and Procedure Code between '10021' AND '69979' or Procedure Code = '69990' Eligibility Health Program Code used include 'MEDA', 'MEDB' for Medicare exclusion Excluded Title XIX Aid Codes are F3 and F4 (QMB/SLMB) Excluded Aid Codes include 'N1', 'N2', 'N4', 'K2', 'K7', 'F3', 'F4'

This measure is reportable from the data in the EHR systems. To report this measure, data needs to be collected or reported from the Emergency Room (ER) EHR and provider systems in the form of ADT messages. The outpatient ED visit (without a subsequent inpatient admission) can be captured by an ADT A01 event and the nonexistence of a subsequent inpatient admission can be captured by an inpatient transfer A02 event for the patient, the same day. Or that the ED visit did not convert to an IP admission can be identified by an A06

event. Medicare exclusions can be captured by the insurance segments in the outpatient visits. The potential HL7 segments and the individual data elements that would capture this information are identified as below.

**Data Elements:**

OP ED Visit, OP ED Visit not a subsequent IP admission, Medicare Exclusion

**Details:**

OP ED Visit

Can be identified by an HL7 ADT A01 event

Segment PV1.2 identifies the data element for Admission Type to determine an emergency.

Or it could be determined by the sending system OID or NPI in MSH.4 (Sending Facility)

Segment PV1.44 identifies the data element for Admit Date/Time for the visit

OP ED Visit not a subsequent IP admission

Can be identified by an HL7 ADT A02 transfer event on the same day

Segment PV1.2 identifies the data element for Admission Type to determine an emergency

OR

An ADT A06 event where the patient was admitted after being evaluated

PV1.3 and PV1.6 identify the previous and new patient locations.

OP Doctor Visit

Segment PV1.4 identifies the data element for Admission Type (Values R) to determine a

Routine visit

Segment PV1.44 identifies the data element for Admit Date/Time for the visit and all visits

within 30 days of the ED visit should be considered.

Medicare Exclusion

Can be identified by an IN1 or IN2 segment in an ADT A01 event.

30-day All-Cause Risk Adjusted Hospital Readmission

<b>SW-RAH1 (Statewide)</b>	30-day All-Cause Risk Adjusted Hospital Readmission
<b>Definition</b>	For Medicaid patients 18 years of age and older (18-64 years), the number of acute inpatient stays during the measurement year that were followed by an unplanned acute readmission for any diagnosis within 30 days and the predicted probability of an acute readmission.
<b>Measure Steward</b>	NCQA - NQF 1768
<b>Data Source</b>	Medicaid Claims
<b>Data Collection Methodology</b>	<ol style="list-style-type: none"> <li>1. Count of index hospital stays* (denominator)</li> <li>2. Count of observed 30-day readmissions (numerator)</li> <li>3. Calculation of expected 30-day readmissions</li> </ol> <p>*An acute inpatient stay with a discharge during the period of April 1 through March 31 of the following year</p>
<b>Numerator</b>	<p>Count of observed 30-day readmissions</p> <p>Note:</p> <ol style="list-style-type: none"> <li>1. Count of 30-day readmissions after initial index admissions</li> <li>2. Each readmission becomes a new index admission and the 30-day counter starts again</li> </ol>
<b>Denominator</b>	Count of index admissions
<b>Exclusions</b>	<p>Numerator:</p> <ol style="list-style-type: none"> <li>1. Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set).</li> <li>2. Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set).</li> </ol> <p>Exclude acute inpatient hospital admissions with any of the following on the discharge claim:</p> <ul style="list-style-type: none"> <li>• Female members with a principal diagnosis of pregnancy (Pregnancy Value Set).</li> <li>• A principal diagnosis for a condition originating in the perinatal period (Perinatal Conditions Value Set).</li> <li>• Planned admissions using any of the following:             <ul style="list-style-type: none"> <li>- A principal diagnosis of maintenance chemotherapy (Chemotherapy Value Set).</li> <li>- A principal diagnosis of rehabilitation (Rehabilitation Value Set).</li> <li>- An organ transplant (Kidney Transplant Value Set, Bone Marrow Transplant Value Set, Organ Transplant Other Than Kidney Value Set, Introduction of Autologous Pancreatic Cells Value Set).</li> <li>- A potentially planned procedure (Potentially Planned Procedures Value Set) without a principal acute diagnosis (Acute Condition Value Set).</li> </ul> </li> </ul>

	<p>Denominator:</p> <ol style="list-style-type: none"> <li>1. Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set).</li> <li>2. Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set). <ul style="list-style-type: none"> <li>• Exclude hospital stays where the index admission date is the same as the index discharge date</li> <li>• Exclude hospital stays for the following reasons: <ul style="list-style-type: none"> <li>- The member dies during the stay</li> <li>- Female members with a principal diagnosis of pregnancy (Pregnancy Value Set) on the discharge claim</li> <li>- A principal diagnosis of a condition originating in the perinatal period (Perinatal Condition Value Set) on the discharge claim</li> </ul> </li> </ul> </li> </ol> <p>Do <b>not</b> exclude chronic conditions from all-cause readmission as per HEDIS specification</p>
<b>Target Population Notes</b>	<p>Medicaid patients 18 years and older  Continuous enrollment 365 days prior to the Index Discharge Date through 30 days after the index discharge date (Note: reports should be generated with and without the 365 continuous enrollment requirement.)</p>
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	<p>Per HEDIS specification, except:</p> <ul style="list-style-type: none"> <li>- Patient status codes excluded</li> <li>- All discharges with one day between are counted</li> <li>- Pull inpatient stays by claim type (instead of revenue code)</li> </ul>
<b>Timing and Time Intervals</b>	<p>Any acute inpatient stay with a discharge on or between April 1 and March 31 of the measurement year</p>
<b>Associated Projects</b>	<p>N/A</p>
<b>Calculation Algorithms</b>	<p>Per HEDIS specification</p>
<b>Additional Considerations</b>	<p>Hospital score will be based on index hospital stays at their institutions. Readmissions include admissions to any hospital.</p>

**Data Elements:**

Age, Admit Date, Discharge Date, Acute Inpatient Stay, Unplanned Readmission, Primary Diagnosis; Procedure; Date of Death, Pregnancy, Perinatal Condition, Planned Admission, Non-Acute Inpatient Stay

**Details:**

Age

Age can be calculated based on the date of birth in PID.7

Admit Date / Discharge Date

Segment PV1.44 identifies the data element for Admit Date/Time

Segment PV1.44 identifies the data element for discharge Date/Time

Acute/Non-Acute Inpatient Stay

Acute and non-acute inpatient stays are identified by CPT and Revenue codes.

CPT codes could be identified by data elements in Segment PR1.3.

Revenue codes can be identified by data elements in Segment FTI.41 in HL7 version 2.7 or later. For prior versions, a Z segment can be identified to capture data elements such as

revenue code and type of bill.

**Planned / Unplanned Readmission**

Planned admissions are defined by principal diagnosis and ICD procedures.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

ICD procedures could be identified by data elements in Segment PR1.3

**Pregnancy / Perinatal Condition**

Pregnancy and perinatal conditions are identified by principal diagnosis.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

**Date of Death**

Date of death can be identified by the data element PID.29

**Alternate Method:**

An alternate method is as follows -

Look for A01/A03 event followed by A01/A03 event within 30 days based on the PV1.44 dates

All exclusions can be done based on diagnosis in DG1

Age can be calculated based on date of birth in PID.7

Medicaid indicator can be determined based on IN1 or PID.3

*Pediatric All-Condition Readmission Measure*

<b>SW-RAH2 (Statewide)</b>	Pediatric All-Condition Readmission Measure
<b>Definition</b>	This measure calculates case-mix-readjusted readmission rates, defined as the percentage of admissions followed by 1 or more readmissions within 30 days, for patients less than 18 years old. The measure covers patients discharged from general acute care hospitals, including children's hospitals.
<b>Measure Steward</b>	Center of Excellence of Pediatric Quality Measurement
<b>Data Source</b>	Medicaid Claims
<b>Data Collection Methodology</b>	Per Center of Excellence of Pediatric Quality Measurement
<b>Numerator</b>	Hospitalizations at general acute care hospitals for patients less than 18 years old that are followed by one or more readmissions to general acute care hospitals within 30 days*. Readmissions are risk adjusted per Center of Excellence of Pediatric Quality Measurement specification
<b>Denominator</b>	Hospitalizations at general acute care hospitals for patients less than 18 years old
<b>Exclusions</b>	Numerator: Readmissions for a planned procedure or for chemotherapy. Denominator: Certain hospitalizations based on clinical criteria or for issues of data completeness or quality that could prevent assessment of eligibility for the measure cohort or compromise the accuracy of readmission rates. In addition, hospitalizations are excluded from the measure entirely if they meet specified clinical or data quality criteria, including: primary diagnosis for a mental health condition, hospitalization for birth of a healthy newborn, or hospitalization for obstetric care. Exclusion Detail: <ol style="list-style-type: none"> <li>1. The patient was 18 years old or greater at the time of discharge.</li> <li>2. The hospitalization was for birth of a healthy newborn.</li> <li>3. The hospitalization was for obstetric care, including labor and delivery.</li> <li>4. The primary diagnosis code was for a mental health condition.</li> <li>5. The hospitalization was at a specialty or non-acute care hospital.</li> <li>6. The discharge disposition was death.</li> <li>7. The discharge disposition was leaving the hospital against medical advice.</li> <li>8. Records for the hospitalization contain incomplete data for variables needed to assess eligibility for the measure or calculate readmission rates, including</li> </ol>

	<p>hospital type, patient identifier, admission date, discharge date, disposition status, date of birth, primary diagnosis code, or gender.</p> <p>9. The hospital is in a State not being analyzed. (Records for these hospitalizations are still assessed as possible readmissions, but readmission rates are not calculated for the out-of- State hospitals due to their lack of complete data.)</p> <p>10. Thirty days of follow-up data are not available for assessing readmissions.</p> <p>11. The hospital has less than 80 percent of records with complete patient identifier, admission date, and discharge date or less than 80 percent of records with complete primary diagnosis codes. (Records for these hospitals are still assessed as possible readmissions, but readmission rates are not calculated for these hospitals due to their lack of complete data.)</p> <p>12. Records for the hospitalization contain data of questionable quality for calculating readmission rates, including:</p> <ol style="list-style-type: none"> <li>1. Inconsistent date of birth across records for a patient.</li> <li>2. Discharge date prior to admission date.</li> <li>3. Admission or discharge date prior to date of birth.</li> <li>4. Admission date after a discharge status of death during a prior hospitalization.</li> </ol> <p>13. Codes other than International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) procedure codes or International Classification of Diseases, Tenth Revision, Procedure Coding Systems (ICD-10-PCS) procedure codes are used for the primary procedure.</p>
<b>Target Population Notes</b>	Pediatric Medicaid patients less than 18 years of age
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	Per Center of Excellence of Pediatric Quality Measurement specification
<b>Risk Adjustment</b>	Accounts for effects of differences in characteristics of individuals that could influence readmission risk, including age, co-morbid conditions, and severity of illness.
<b>Timing and Time Intervals</b>	Annual
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Risk adjusted rate
<b>Additional Considerations</b>	<p>For pediatric hospitals only.</p> <p>Eligibility</p> <p>Excluded Title XIX Aid Codes are F3 and F4 (QMB/SLMB) Excluded Aid Codes include 'N1', 'N2', 'N4', 'K2', 'K7', 'F3', 'F4'</p>

**Data Elements:**

Age, Hospital Exclusions, Incomplete Data, Admit Date, Discharge Date, Primary Diagnosis, Chronic Condition, Planned Procedure, Chemotherapy, Mental Health Condition, Obstetric Care, Newborn Birth

**Details:**

## Age

Age can be calculated based on the date of birth in PID.7

## Admit Date / Discharge Date

Segment PV1.44 identifies the data element for Admit Date/Time

Segment PV1.44 identifies the data element for Discharge Date/Time

## Hospitals

Taxonomy codes could be used to identify non-acute care hospitals, or the measure could be applied or requested of only applicable hospitals (general pediatric acute care).

## Incomplete Data (Hospital Level)

Measure calls out Patient Identifier, Admit Date, Discharge Date and Primary Diagnosis to be present on 80 % of the hospital data. Else the hospital should be excluded from the measurement.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

PID.2 and PID.3 can be used to identify the patient's identifier.

## Incomplete Data (Patient Level)

There are exclusions at the patient level for missing or invalid data.

Discharge disposition can be identified by PV1.36 and the location by PV1.37. Other data elements already called out in the Incomplete Data (Hospital Level) are not being repeated here.

Date of birth is identified by PID.7 and gender can be identified by PID.8.

## Chronic Condition/Planned Procedure/Chemotherapy/Mental Health Condition/Obstetric

### Care/Newborn Birth

All the above data elements are being defined by the measure steward by using ICD-9 primary or ICD-10 principal diagnosis codes.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

ICD procedures can be identified by data elements in Segment PR1.3

Length of Stay can be determined from the admit and discharge dates.

## Alternate Method:

An alternate method to approach the data is as follows -

Look for A01/A03 event followed by A01/A03 event within 30 days based on the PV1.44 dates.

All exclusions can be done based on diagnosis in DG1.

Age can be calculated based on date of birth in PID.7.

Medicaid indicator can be determined based on IN1 or PID.3.

Readmission Rate for a High Frequency Chronic Condition – 30 day - Adult

<b>VP1</b>	Readmission Rate for a High Frequency Chronic Condition - 30 day - Adult
<b>Definition</b>	Percentage of Medicaid patients discharged who have a high frequency chronic condition who are readmitted to the hospital within 30 days and are 18 - 65 years of age High frequency conditions are defined as hypertension, diabetes mellitus, heart failure, COPD, and asthma
<b>Measure Steward</b>	Colorado Department of Health Care Policy and Financing
<b>Data Source</b>	Medicaid Claims
<b>Data Collection Methodology</b>	Claims analysis
<b>Numerator</b>	Medicaid patients discharged from the hospital who have a high frequency chronic condition as a primary or secondary diagnosis who are readmitted to the hospital within 30 days. High frequency conditions are defined as hypertension, diabetes mellitus, heart failure, COPD, and asthma
<b>Denominator</b>	Medicaid patients discharged from the hospital who have a high frequency chronic condition as a primary or secondary diagnosis. High frequency conditions are defined as hypertension, diabetes mellitus, heart failure, COPD, and asthma
<b>Exclusions</b>	<p>Numerator</p> <ol style="list-style-type: none"> <li>1. Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set).</li> <li>2. Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set).</li> </ol> <p>Exclude acute inpatient hospital admissions with any of the following on the discharge claim:</p> <ul style="list-style-type: none"> <li>• Female members with a principal diagnosis of pregnancy (Pregnancy Value Set).</li> <li>• A principal diagnosis for a condition originating in the perinatal period (Perinatal Conditions Value Set).</li> <li>• Planned admissions using any of the following: <ul style="list-style-type: none"> <li>– A principal diagnosis of maintenance chemotherapy (Chemotherapy Value Set).</li> <li>– A principal diagnosis of rehabilitation (Rehabilitation Value Set).</li> <li>– An organ transplant (Kidney Transplant Value Set, Bone Marrow Transplant Value Set, Organ Transplant Other Than Kidney Value Set, Introduction of Autologous Pancreatic Cells Value Set).</li> <li>– A potentially planned procedure (Potentially Planned Procedures Value Set) without a principal acute diagnosis (Acute Condition Value Set).</li> </ul> </li> </ul> <p>Denominator</p>

	<p>1. Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set).</p> <p>2. Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set)</p> <p>Exclude hospital stays where the Index Admission Date is the same as the Index Discharge Date.</p> <p>Exclude hospital stays for the following reasons:</p> <ul style="list-style-type: none"> <li>• The member died during the stay.</li> <li>• Female members with a principal diagnosis of pregnancy (Pregnancy Value Set) on the discharge claim.</li> <li>• A principal diagnosis of a condition originating in the perinatal period (Perinatal Conditions Value Set) on the discharge claim.</li> </ul> <p>Chronic condition codes were not included</p>
<b>Target Population Notes</b>	<p>Adult Medicaid</p> <p>Continuous enrollment 365 days prior to the Index Discharge Date through 30 days after the index discharge date (Note: reports should be generated with and without the 365 continuous enrollment requirements).</p>
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	<p>Per HEDIS specifications, except:</p> <ul style="list-style-type: none"> <li>- Patient status codes excluded</li> <li>- All discharges with one day between are counted</li> <li>- Extract inpatient stays by claim type (instead of revenue code)</li> </ul>
<b>Risk Adjustment</b>	Not applicable
<b>Timing and Time Intervals</b>	Annual
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Percentage
<b>Additional Considerations</b>	<p>This measure would be applicable to hospitals who want to implement enhanced transitions of care support for a cohort of Medicaid patients discharged with a chronic condition. This will include addressing both medical issues and social determinants of health.</p>

**Data Elements:**

Age, High Frequency Chronic Conditions, Acute / Non-Acute Inpatient Stays, Pregnancy, Perinatal Condition, Chemotherapy, Rehabilitation, Organ Transplant, Planned Procedure

**Details:**

Age

Age can be calculated based on the date of birth in PID.7

Admit Date / Discharge Date

Segment PV1.44 identifies the data element for Admit Date/Time

Segment PV1.44 identifies the data element for Discharge Date/Time

High Frequency Chronic Conditions

High frequency chronic conditions are identified by ICD codes and can be identified in element in Segment DG1.3

Planned Procedure

Planned admissions are defined by principal diagnosis and ICD procedures.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

ICD procedures could be identified by data elements in Segment PR1.3

#### Acute / Non-Acute Inpatient Stays

Acute and non-acute inpatient stays are identified by CPT and Revenue codes.

CPT codes could be identified by data elements in Segment PR1.3.

Revenue codes can be identified by data elements in Segment FT1.41 in HL7 version 2.7 or later. For prior versions, a Z segment can be identified to capture data elements such as revenue code and type of bill.

#### Pregnancy / Perinatal Condition

Pregnancy and perinatal conditions are identified by principal diagnosis.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

#### Chemotherapy / Rehabilitation / Organ Transplant / Planned Procedure

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

ICD procedures can be identified by data elements in Segment PR1.3

*Pediatric Bronchiolitis – Appropriate Use of Testing and Treatment*

<b>VP2</b>	Pediatric Bronchiolitis - Appropriate Use of Testing and Treatment
<b>Definition</b>	Percent of pediatric patients admitted with bronchiolitis who receive evidence-based care during their inpatient admission.
<b>Measure Steward</b>	Colorado Department of Health Care Policy and Financing
<b>Data Source</b>	Hospital self-report
<b>Data Collection Methodology</b>	EMR data extraction or medical record review
<b>Numerator</b>	Number of pediatric patients admitted with bronchiolitis who do not receive: bronchodilators and/or chest x ray and/or respiratory pathogen during their hospital stay
<b>Denominator</b>	Number of pediatric patients admitted with bronchiolitis
<b>Exclusions</b>	ICU stays
<b>Target Population Notes</b>	Pediatric all payor
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	EMR or medical record documentation
<b>Risk Adjustment</b>	Not applicable
<b>Timing and Time Intervals</b>	Measure reported December to April
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Percentage
<b>Additional Considerations</b>	Likely appropriate for pediatric hospitals only due to volume% of patients with bronchiolitis requiring oxygen who are discharged from ED/UC with home oxygen, (Dec-April measurement period)

**Data Elements:**

Age, Admit Date, Bronchiolitis, Evidence of Care - Bronchodilators, Chest x-ray, Respiratory pathogen, ICU Stay

**Details:**

Age

Age can be calculated based on the date of birth in PID.7

Admit Date

Segment PV1.44 identifies the data element for Admit Date/Time

Bronchiolitis

Bronchiolitis can be identified by the primary or secondary diagnosis.

Diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

Evidence of Care - Bronchodilators / Chest x-ray / Respiratory pathogen

Bronchodilators can be identified by RXNORM or NDC codes.

NDC Codes could be identified by FTI.29. A Z segment can be identified to capture data elements such as RXNORM with HL7 ADT messages.

Chest x-ray can be identified by CPT or ICD codes

CPT codes could be identified by data elements in Segment PR1.3 and diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

Respiratory pathogen can be similarly identified by either CPT or ICD codes.

ICU Stay

ICU stay can be identified by CPT or Revenue codes and diagnosis codes. Diagnosis and CPT codes can be found in HL7 messages as described above. Revenue codes can be identified by data elements in Segment FTI.41 in HL7 version 2.7 or later. For prior versions, a Z segment can be identified to capture data elements such as revenue code and type of bill.

*Increase Access to Contraceptive Care – Long Acting Reversible Contraceptive (LARC)*

<b>PH1</b>	Increase Access to Contraceptive Care - Long Acting Reversible Contraceptive (LARC)
<b>Definition</b>	The percentage of women who have delivered and receive a LARC prior to hospital discharge.
<b>Measure Steward</b>	Colorado Department of Health Care Financing and Policy
<b>Data Source</b>	Claims
<b>Data Collection Methodology</b>	Claims analysis
<b>Numerator</b>	The number of women who have delivered and receive a LARC prior to hospital discharge
<b>Denominator</b>	The number of deliveries
<b>Exclusions</b>	
<b>Target Population Notes</b>	Adult Medicaid
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	Claims
<b>Risk Adjustment</b>	N/A
<b>Timing and Time Intervals</b>	Annual
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Percentage
<b>Additional Considerations</b>	The ACOG LARC Program's Postpartum Contraceptive Access Initiative (PCAI) is designed to provide clinical and operational support training for immediate postpartum LARC implementation. PCAI's mission is to ensure all women have access to the full range of postpartum contraceptive methods before leaving the hospital after a delivery. The PCAI website contains the resources below and much more, including details about the initiative, information about immediate postpartum LARC, and an application to request free, onsite training.

**Data Elements:**

Age, Live Births, Non-Live Births, LARC

**Details:**

Age

Age can be calculated based on the date of birth in PID.7

Live / Non-Live Births

Live / Non-Live births can be identified by either ICD10 CM, ICD10 PCS or CPT codes.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

ICD procedures could be identified by data elements in Segment PR1.3

LARC

Long Acting Reversible Contraceptive (LARC) can be identified by ICD10CM, ICD10PCS or CPT/HCPCS codes.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

ICD procedures could be identified by data elements in Segment PR1.3

*Increase Access to Contraceptive Care – Long Acting Reversible Contraceptive (LARC) for Adolescents*

<b>PH2</b>	Increase Access to Contraceptive Care - Long Acting Reversible Contraceptive (LARC) for Adolescents
<b>Definition</b>	The number of adolescents the who receive a long acting reversible contraceptive at a hospital run or affiliated program.
<b>Measure Steward</b>	Colorado Department of Health Care Financing and Policy
<b>Data Source</b>	Hospital self-report
<b>Data Collection Methodology</b>	Hospital data extraction
<b>Numerator</b>	This is a simple count of the number of adolescents who receive a LARC at a hospital or affiliated program.
<b>Denominator</b>	N/A
<b>Exclusions</b>	
<b>Target Population Notes</b>	Pediatric patients of appropriate age and with appropriate consent.
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	Patient count
<b>Risk Adjustment</b>	N/A
<b>Timing and Time Intervals</b>	Annual
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Patient Count
<b>Additional Considerations</b>	

**Data Elements:**

Age, LARC

**Details:**

Age

Age can be calculated based on the date of birth in PID.7

LARC

Long Acting Reversible Contraceptive (LARC) can be identified by ICD10CM, ICD10PCS or CPT/HCPCS codes.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

ICD procedures could be identified by data elements in Segment PR1.3

*Pediatric Screening for Depression in Inpatient and Emergency Department Including Suicide Risk*

<b>SW-BH2 (Pediatric Hospital Statewide)</b>	Pediatric Screening for Depression in Inpatient and Emergency Department Including Suicide Risk
<b>Definition</b>	Percent of pediatric patients 12 years or older who were screened for depression including suicide risk during an inpatient or emergency department encounter.
<b>Measure Steward</b>	Colorado Department of Health Care Policy and Financing
<b>Data Source</b>	Hospital self-report
<b>Data Collection Methodology</b>	EMR or medical record review
<b>Numerator</b>	Number of pediatric patients (12 years old+) with an inpatient or emergency department encounter who were screened for depression including suicide risk.
<b>Denominator</b>	Number of pediatric patients with an inpatient or emergency department encounter.
<b>Exclusions</b>	Patients discharged AMA
<b>Target Population Notes</b>	Pediatric
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	EMR or medical record documentation
<b>Risk Adjustment</b>	Not applicable
<b>Timing and Time Intervals</b>	Annual
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Percentage
<b>Additional Considerations</b>	

**Data Elements:**

Age, Inpatient or ED Encounter, Depression Screening, Discharge Against Medical Advice

**Details:**

Age

Age can be calculated based on the date of birth in PID.7

Inpatient or ED Encounter

Can be identified by and HL7 ADT A03 and the associated discharge diagnosis in DG1.3

Segment PV1.4 identifies the data element for Admission Type (Values E) to determine an emergency

Segment PV1.44 identifies the data element for Admit Date/Time for the visit

Depression Screening

Depression screening can be identified by CPT or HCPCS or SNOMED codes

CPT HCPCS or SNOMED codes could be identified by data elements in Segment PR1.3.

Discharge Against Medical Advice

CPT codes can identify discharges against medical advice and can be found in Segment PR1.3.

*Initiation of Medication Assisted Treatment (MAT) in Emergency Department*

<b>BH2</b>	Initiation of Medication Assisted Treatment (MAT) in Emergency Department
<b>Definition</b>	The number of patients for whom Medication Assisted Treatment (MAT) with Buprenorphine, Methadone, or Naltrexone is initiated during an emergency department visit.
<b>Measure Steward</b>	Colorado Department of Health Care Policy and Financing
<b>Data Source</b>	Hospital self-report
<b>Data Collection Methodology</b>	Treatment recorded in emergency department visit note or claim.
<b>Numerator</b>	This is a simple count of the number of OUD/SUD diagnosis patients for whom MAT with Buprenorphine, Methadone, or Naltrexone is initiated in the emergency department.
<b>Denominator</b>	None
<b>Exclusions</b>	
<b>Target Population Notes</b>	Adult Medicaid
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	Hospital self-report from visit note or claim.
<b>Risk Adjustment</b>	Not applicable
<b>Timing and Time Intervals</b>	Yearly count
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Patient count
<b>Additional Considerations</b>	This measure is designed for hospitals who want to implement a program to train and certify providers and develop protocols to initiate MAT in the emergency department for appropriate patients. Patients will then be referred to outpatient providers for ongoing treatment. The measure will reflect the number of patients treated annually post implementation.

**Data Elements:**

OUD/SUD diagnosis, MAT with Buprenorphine, Methadone, or Naltrexone

**Details:**

OUD/SUD diagnosis

OUD/SUD is identified by diagnosis codes.

Primary diagnosis can be identified by diagnosis priority data element in Segment DG1.15 and the diagnosis code and coding method in DG1.3.

MAT with Buprenorphine, Methadone, or Naltrexone

Buprenorphine, Methadone, or Naltrexone are identified by NDC or RXNORM codes.

NDC Codes could be identified by FTI.29. A Z segment can be identified to capture data elements such as RXNORM with HL7 ADT messages.

*Increase the successful transmission of a transition record, such as an ADT notification, to a patient's primary care physician or other healthcare professional within 24 hours of discharge from an inpatient facility*

<b>COE1</b>	Increase the successful transmission of a transition record, such as an ADT notification, to a patient's primary care physician or other healthcare professional within 24 hours of discharge from an inpatient facility
<b>Definition</b>	Successful transmission of a transition record, such as an ADT notification, to a patient's primary care physician or other healthcare professional within 24 hours of discharge from an inpatient facility
<b>Measure Steward</b>	Colorado Department of Health Care Policy and Financing
<b>Data Source</b>	Hospital self-report
<b>Data Collection Methodology</b>	EMR or medical record
<b>Numerator</b>	The number of successful transmissions of a transition record to a patient's primary care physician or other healthcare professional within 24 hours of discharge from an inpatient facility.
<b>Denominator</b>	The number of inpatient discharges.
<b>Exclusions</b>	
<b>Target Population Notes</b>	Adult and Pediatric Medicaid
<b>Data Elements, Code Systems, Code Lists, Value Sets</b>	EMR or patient record documentation
<b>Risk Adjustment</b>	Not applicable
<b>Timing and Time Intervals</b>	Annual
<b>Associated Projects</b>	N/A
<b>Calculation Algorithms</b>	Percentage
<b>Additional Considerations</b>	All physicians are not part of an HIE and the measure is to incent hospitals to transmit discharge records through the most effective modality for a specific physician.

**Data Elements:**

Discharges

**Details:**

Discharges

All discharges can be identified by an ADT A03 event

This measure can be self-reported by the EHR system or be reported from the data received from the EHR system, by the HIE.

The EHR system could send ADT 03 events to the HIE and an MDM T02 or an IHE transaction with an attached HL7 CDA R2 template document, which is either a CCD (Continuity of Care Document) or a Discharge Summary document.