



What is the Chronic Impact Score?

How do you identify members at risk for future health problems? Some HCRM clients use the HRM metric “Movers Risk” which identifies members whose cost prediction is \$10K greater than their prior year’s cost. Others use the “Risk Category” metric which identifies members at risk based on their cost projections: top 5% are Catastrophic, next 10% are High, then Medium, Low and the bottom 50% are classified as Well. The question here is: ***can we identify members who would benefit from intervention before their projected costs identify them as at risk?***

Consider this member: In June 2020 we see a 53-year-old woman who had diabetes with neurological complication, hypertension and hyperlipidemia. She showed noncompliance in several guideline measures for diabetes and hyperlipidemia. She was also depressed and overdue for a pneumonia vaccine, pap test, mammogram and colonoscopy¹. During the following year she had a fall that sent her to the ER which was attributed to a mild stroke, and over the year gained an additional diagnosis of asthma. She remains noncompliant with most of the guideline measures from the first year. In June 2020, her prior year charges were \$650 and she was predicted to spend \$4700 in the next year. One year later she had spent \$6000 and was projected to spend \$6400 over the next year. These charges are not enough to place her as a “Mover” in either June report; both times she places in the Medium Risk Category. Both times her Chronic Impact Score is a very high 99 out of 100.

The Chronic Impact Score (CIS) is designed to identify those individuals whose combination of gaps in care and depression mean they might benefit from intervention. Most members in the population have a CIS of 0. Members with a noncompliant guideline condition will have a CIS ranging from the low 80s to 100. In the June 2021 report nearly 13K members had a CIS of 95 or greater but fewer than 800 of them would have met the Mover’s Risk definition, and only 1600 would have been in the catastrophic or high risk categories. The CIS says we should take a look at these members. For the member described above, her charges and predictions have increased steadily in the months following the June 2020 report. Her Risk category as of July 2021, 13 months later, is now a High, her 12 month projected charges nearly doubled to \$11K from the June to the July 2021 reports. At 99 the CIS would have triggered an alert when she first appeared in our records 14 months earlier.

As described above, we are seeing many members who have costs that may not trigger risk measures based on current or projected charges, but who have high levels of noncompliance to standards of care for chronic conditions. Their low charges may reflect a lack of attention to their health which will play out – if not in the next year, at some point in the future. The Chronic Impact Score, because it focuses on noncompliance to standards of care, is yet another tool in the HRM toolbox for population health professionals. Used along with other risk metrics and in conjunction with medical records and other information available through HRM, the CIS allows health professionals to better identify, reach and address the health and well-being of the population under their care.

¹ Guidelines not compliant for Diabetes: EyeExam, HbA1c Testing, Annual lipid profile LDL-C screening; for Hyperlipidemia: Annual assessment of lipid-lowering medications; for Preventative Care: Breast cancer screening; Colon cancer screening; Pneumococcal vaccine; Cervical cancer screening. See following table for more details.

Below is a list of our current Guidelines with descriptions which may help in discerning what may cause a compliance or noncompliance. For more information on each guideline, including details regarding the qualifying population and the source of the guideline information, please go to the help section in the HRM application where you will find the data definitions for each guideline. Also check the HCRM Quarterly Measures Updates for up-to-date changes in these measures.

NAME	CLINICAL RATIONALE
ASTHMA	
Medication continuance post asthma diagnosis	Members who have a primary diagnosis of asthma and were prescribed asthma medications in the prior year and continued the appropriate medication regimen in the current year
Exacerbation prevention	There is strong evidence that short acting beta-agonists (SABA) only treatment, although providing short-term relief of asthma symptoms, does not protect patients from severe exacerbations, and that regular or frequent use of SABAs increases the risk of exacerbations.
Inhaler Overprescribed	Dispensing of > 3 short acting beta agonist (SABA) inhaler canisters per year (average 1.5 puffs/day) is associated with an increased risk of emergency department visit or hospitalization independent of severity and dispensing > 12 canisters per year increases the risk of death.
COPD	
Inhaled Bronchodilator Therapy	Patients aged 18 years and older with a diagnosis of COPD with symptoms and were prescribed appropriate medications (long or short acting bronchodilators, corticosteroids, xanthine's, etc.)
COPD exacerbation avoidance	For patients who have been diagnosed with chronic obstructive pulmonary disease with (acute) exacerbation, the American Thoracic Society strongly recommends a LABA(Long Acting Beta Antagonist) with a LAMA (Long Acting Muscarinic Antagonist) combination therapy over LABA or LAMA monotherapy
Spirometry testing	New diagnosis or newly active chronic obstructive pulmonary disease (COPD) should receive appropriate spirometry testing to confirm the diagnosis
CVA - Cardiovascular accident	
Anticoagulation for stroke prevention with atrial fibrillation	Atrial fibrillation remains a common and high-risk condition for second ischemic stroke. Anticoagulation is usually recommended if the patient has no contraindications
Anticoagulant therapy for atrial fibrillation or atrial flutter at discharge	In patients with nonvalvular AF and stroke or TIA, oral anticoagulation (e.g., apixaban, dabigatran, edoxaban, rivaroxaban, or warfarin) is recommended to reduce the risk of recurrent stroke
Antithrombotic therapy at discharge	In patients with carotid artery stenosis and a TIA or stroke, intensive medical therapy, with antiplatelet therapy, lipid-lowering therapy, and treatment of hypertension, is recommended to reduce stroke risk
Antithrombotic therapy	For patients with non-cardioembolic ischemic stroke or TIA, aspirin 50 to 325 mg daily, clopidogrel 75 mg, or the combination of aspirin 25 mg and extended-release dipyridamole 200 mg twice daily is indicated for secondary prevention of ischemic stroke
LDL-C screening performed	In patients with a confirmed diagnosis of symptomatic ischemic cerebrovascular disease, blood tests, including fasting or non-fasting lipid profile is recommended to gain insight into risk factors for stroke and to inform therapeutic goals

NAME	CLINICAL RATIONALE
Blood pressure management	In patients with hypertension who experience a stroke or TIA, treatment with a thiazide diuretic, angiotensin-converting enzyme inhibitor, or angiotensin II receptor blockers is useful for lowering BP and reducing recurrent stroke risk
INR Protime	Among patients treated with warfarin, the international normalized ratio (INR) should be determined at least weekly during initiation of anticoagulant therapy and at least monthly when anticoagulation (INR in range) is stable
LDL-C < 100 mg/Dl	It is recommended patients with history of ischemic cerebrovascular disease reduce the risk of stroke and cardiovascular events by maintaining LDL-C levels <=100 mg/dL.
DIABETES	
Eye exam	Patients with diabetes (type 1 and type 2) who had retinal eye exam performed.
HbA1c Testing	Members 18-75 years of age with diabetes (type 1 and type 2) who had Hemoglobin A1c (HbA1c) testing.
Nephropathy attention	Members 18-75 years of age with diabetes (type 1 and type 2) who had medical attention for nephropathy.
Neuropathy Screening	All patients should be assessed for distal symmetric polyneuropathy starting at diagnosis of type 2 diabetes and 5 years after the diagnosis of type 1 diabetes and at least annually thereafter
With nephropathy: ACE or ARB	A blocker of the renin-angiotensin system is recommended to be one part of a multiple drug combination approach to control hypertension in patients with nephropathy
LDL-C screening performed	In most adult patients with diabetes measure fasting lipid profile at least annually.
Annual lipid profile	Adult patients with diabetes should have lipid profile at least annually
Blood pressure management	Hypertension is a common comorbidity of diabetes, affecting the majority of patients and is a major risk factor for both CVD and microvascular complications.
Statin therapy	Statin therapy should be added regardless of baseline lipid levels for diabetic patients with overt CVD or with multiple CVD risk factors.
LDL-C < 100 mg/dL	In most adult patients with diabetes measure fasting lipid profile at least annually. In adults with low-risk lipid values (LDL cholesterol < 100 mg/dl, HDL cholesterol > 50 mg/dl, and triglycerides < 150 mg/dl), lipid assessments may be repeated every 2 years. This measure focuses on the identification of patients with LDL-C <100.
Triglycerides < 150 mg/dL	In individuals with diabetes, lower triglycerides to <150 mg/dL is desirable
HDL > 40mg/dL male or > 50mg/dL female	In individuals with diabetes, the desirable HDL cholesterol for males >40 mg/dl and >50mg/dL for females
HbA1c <= 9%	To identify non-compliant members with diabetes (type 1 or type 2) who had HbA1c >9.0% poor control in the measurement year
HbA1c < 8%	Members with diabetes (type 1 or type 2) who had HbA1c good control (< 8.0%).
HEART FAILURE	
LVEF assessment for CHF patient	Patients with a diagnosis of heart failure have documentation within the last 12 months of an LVEF assessment.
With LVSD: Beta-blocker therapy	Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) with a current or prior left ventricular ejection fraction (LVEF) < 40% who were prescribed beta-blocker therapy either within a 12-month period when seen in the outpatient setting OR at each hospital discharge

NAME	CLINICAL RATIONALE
With LVSD: ACE/ARB/ARNI therapy	Patients with heart failure who also have LVEF <40% or moderately or severely depressed left ventricular systolic function who were prescribed ACE inhibitor, ARB or ARNI therapy
Diuretic plus ACE/ARB/ARNI	Individuals with heart failure who received either ACE/ARB/ARNI and a diuretic.
Potassium and renal function testing	Careful monitoring of potassium, renal function, and diuretic dosing represents best practices at initiation and during follow-up thereafter to minimize risk of hyperkalemia and worsening renal function.
Anticoagulant therapy for atrial fibrillation	Most patients with AF and HF can be expected to be candidates for systemic anticoagulation unless contraindicated
Readmission avoidance	Hospital Readmission Reduction Program is a Medicare value-based program that lowers payments to hospitals with excess readmissions. This measure reports members who were readmitted within 30 days of initial inpatient discharge with heart failure
HYPERLIPIDEMIA	
Annual assessment of lipid-lowering medications	Lipoprotein profiles should be assessed at least annually and preferably at each clinic visit to promote compliance
HYPERTENSION	
Initial therapy: ACE/ARB, CCB or thiazide diuretic use	In the general population, initial antihypertensive treatment should include two or more of the recommended antihypertensive medications to achieve blood pressure goals.
Initial therapy: ACE/ARB, CCB or thiazide diuretic use	Patients with hypertension and 2 or more risk factors who should receive two or more different antihypertensive drugs.
CAD - Coronary Artery Disease	
ACE or ARB	Angiotensin-converting enzyme (ACE) inhibitors should be started and continued indefinitely in all patients with left ventricular ejection fraction (LVEF) less than 0.40 and in those with hypertension, diabetes mellitus, or stable chronic kidney disease. Angiotensin receptor blockers (ARB) are recommended in patients who are ACE inhibitor intolerant
Blood pressure management	Patients with CAD who also have hypertension diagnosis and received attention to blood pressure by at least two prescriptions for antihypertensive agent
LDL-C screening performed	Members with coronary artery disease are at risk for high total cholesterol and should have regular LDL screenings performed.
Diabetes screening	More patients with established heart disease have abnormal than normal glucose tolerance, and screening for diabetes mellitus is warranted in patients with coronary artery disease or risk factors for cardiovascular disease
Beta blocker post MI	Beta-blocker therapy is recommended in patients with LVEF < 40% and/or heart failure stabilization, to reduce the risk of death, recurrent MI, and hospitalization for heart failure
MI medications	Guideline-recommended medication therapies reduce major adverse cardiovascular events in patients after myocardial infarction (MI) or those with coronary atherosclerotic disease. This measure identifies patients who have no prescription for ACE/ARB, BB or statin drugs prescribed.
Statin medication	Most CHD patients will need LDL-lowering drug therapy. The first priority of drug therapy is to achieve the goal for LDL cholesterol. The usual drug will be a statin.

NAME	CLINICAL RATIONALE
LDL-C < 100 mg/dL	Lipid management assessment of a fasting or non-fasting lipid profile with a lab result of LDL-C < 100
Beta blocker persistence after heart attack	Members who were hospitalized and discharged alive with a diagnosis of acute myocardial infarction (AMI) and received persistent beta-blocker treatment for six months after discharge.
Cardiac Rehab 1 Session/60 days	Participation in Cardiac Rehabilitation program significantly improves meaningful patient outcomes, including mortality, readmissions to acute care, functional capacity, psychosocial wellbeing, and health-related quality of life.
Antiplatelet therapy	Dual-antiplatelet therapy significantly lowers the risk of thrombosis in patients with CAD
HIV	
Hepatitis C Screening	For at risk HCV-seronegative patients, HCV antibody testing is recommended annually or as indicated by risk exposure.
Annual TB testing	Patients with HIV are at risk for contracting TB and should have annual TB testing
Viral load testing	Viral load is the most important indicator of initial and sustained response to antiretroviral therapy and should be measured in all patients with HIV at entry into care, at initiation of therapy, and on a regular basis thereafter.
Monitoring of CD4 counts	In patients who remain untreated for whatever reason, CD4 counts should be monitored every 3 to 6 months to assess the urgency of antiretroviral initiation and the need for opportunistic infections prophylaxis.
HIV screening	All women who are pregnant should be tested for HIV during the first trimester of pregnancy.
OSTEOPOROSIS	
Osteoporosis management after fracture	Women 67 years of age and older who suffered a fracture and who had either a bone mineral density (BMD) test or prescription for a drug to treat or prevent osteoporosis in the six months after date of the fracture
Osteoporosis screening	Screening for osteoporosis for women aged 65 years and older.
RHEUMATOID ARTHRITIS	
DMARD Drug Therapy for Rheumatoid Arthritis	Patient's age 18 years and older diagnosed with rheumatoid arthritis have had at least one ambulatory prescription dispensed for a disease modifying anti-rheumatic drug (DMARD).
Periodic measurement of ESR/CRP/Functional Status	Periodic measurements of the ESR or CRP level and functional status should be performed to assess disease progression.
Eye exam with hydroxychloroquine use	Children and adults with rheumatoid arthritis receiving hydroxychloroquine especially those with chronic kidney disease may have visual changes or loss of vision while on hydroxychloroquine and should have a yearly eye exam.
Periodic assessment of liver function	Periodic toxicity assessment of liver function for patients receiving biologic and non-biologic DMARDS is recommended.
Periodic assessment of renal function	Periodic toxicity assessment of renal function (creatinine) for individuals receiving biologic and non-biologic DMARDS is recommended.
Periodic assessment of CBC	Periodic assessment of CBC for individuals on sulfasalazine, methotrexate, leflunomide, azathioprine, d-penicillamine, gold (IM or oral), cyclosporine,

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	staphylococcal protein A immunoabsorption
HEPATITIS C	
HCV RNA prior to treatment	Quantitative HCV RNA testing is recommended prior to the initiation of antiviral therapy.
HCV RNA post treatment	Quantitative serum HCV RNA performed within 24 weeks after conclusion of therapy
CHRONIC RENAL FAILURE	
Assessment of anemia status	There is a high prevalence of anemia in patients with chronic kidney disease; therefore, hemoglobin concentration should be closely monitored. This measure evaluates minimal annual monitoring.
MULTIPLE SCLEROSIS	
Appropriate drug therapy	Treatment of multiple sclerosis with either Betaseron, Avonex, Rebif, Copaxone, Tysabri, corticosteroids, Novantrone or Intravenous Immune Globulin (IVIG).
MIGRAINE HEADACHE	
Emergency room avoidance	Patients with severe headache disorders or migraines, medication prescription therapy showed lower frequency of emergency department visits than those without antimigraine medication prescription therapy
Narcotic overuse avoidance	Identify individuals with minimized risk of narcotic or barbiturate misuse, as evidenced by less than 6 narcotic or barbiturate prescriptions annually
Appropriate use of triptans	According to the FDA, triptans are contraindicated in patients with a history of cardiovascular disease, including stroke, transient ischemic attacks, myocardial infarction, severe peripheral vascular disease, ischemic bowel disease, and coronary vasospasm
MENTAL HEALTH	
Effective continuation phase treatment depression	Treatment for a new episode of depression and remained on antidepressant drug therapy at least 180 days.
Effective acute phase treatment depression	Treatment for a new episode of depression and remained on antidepressant drug therapy during the entire 84-day (12 week) acute treatment phase.
Acute phase drug treatment schizophrenia	Members diagnosed with a new episode of schizophrenia, and remained on antipsychotic drugs for 12 weeks.
Stabilization phase drug treatment schizophrenia	Members diagnosed with a new episode of schizophrenia, and remained on antipsychotic drugs for 6 months.
Medication use in schizophrenia	Treatment with antipsychotic medication is indicated for nearly all episodes of acute psychosis in patients with schizophrenia.
Post Mental illness IP admission 7 day follow-up	7 day follow up after hospitalization for treatment of selected mental illness with an outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner

NAME	CLINICAL RATIONALE
Post mental illness IP admission 30 day follow up	30 day follow up after hospitalization for treatment of selected mental illness with an outpatient visit, intensive outpatient encounter or partial hospitalization with a mental health practitioner
DRUG MANATEMENT	
Monitoring adverse effects of statin therapy	In patients treated with statins, it is recommended to measure creatine kinase levels in individuals with severe statin-associated muscle symptoms, objective muscle weakness, and to measure liver transaminases (aspartate aminotransferase, alanine aminotransferase) as well as total bilirubin and alkaline phosphatase (hepatic panel) if there are symptoms suggesting hepatotoxicity.
LOW BACK PAIN	
Appropriate use of imaging studies	This measure assesses whether imaging studies are overused in evaluating patients with acute low back pain.
Appropriate use of surgery	When non-surgical therapies fail to relieve chronic back pain after 6 to 12 weeks, surgery may be considered to relieve pain caused by worsening nerve damage, serious musculoskeletal injuries, or nerve compression.
Minimized potential narcotic misuse	Identify patients with multiple narcotic prescriptions that could indicate the potential for narcotic misuse
HEMOPHILIA	
Avoidance of drugs that affect platelet function	Drugs that affect platelet function, particularly acetylsalicylic acid (ASA) and non-steroidal anti-inflammatory drugs (NSAIDs) should be avoided.
Psychosocial support received	As hemophilia can impact many aspects of daily living and family life, psychological and social support are important components of comprehensive care for hemophilia
Avoidance of COX-2 inhibitors	COX-2 inhibitors may be used for joint inflammation after an acute bleed and in chronic arthritis; otherwise avoided.
Genetic counseling received	Genetic counselling is an essential but complex component of comprehensive care for individuals and families with a diagnosis of hemophilia and for those at risk.
Hemophilia A treatment	Recombinant factor VIII products are the recommended treatment of choice for patients with hemophilia A.
Hemophilia B treatment	The treatment of choice for hemophilia B is recombinant factor IX products.
IMMUNIZATIONS CHILDREN	
Influenza immunization, Children	Influenza vaccination is the primary method for preventing influenza and its severe complications.
Hepatitis B vaccinations	Three Hepatitis B vaccinations with different dates of service on or before the child's second birthday or evidence of prior Hepatitis B disease or Hepatitis B virus carrier.
DTaP Vaccinations	Four DTaP vaccinations on different dates of service in the period between 42 days after birth up to the second birthday
HiB Vaccinations	Three HiB vaccinations on different dates of service in the period between 42 days after birth up to the second birthday.
Pneumococcal Vaccinations	Four pneumococcal conjugate vaccinations (PCV) with different dates of service in the period between 42 days after birth up to the second birthday.
VZV Vaccination	At least one VZV vaccination or evidence of Varicella or Zoster disease on or

NAME	CLINICAL RATIONALE
	before the child's second birthday.
Polio (IPV) Vaccinations	Three IPV vaccinations on different dates of service in the period between 42 days after birth up to the second birthday.
MMR Vaccination	At least one MMR vaccination or evidence of Measles, Mumps or Rubella on or before the child's second birthday.
Hepatitis A Vaccinations	At least one Hepatitis A vaccination or evidence of disease on or before the child's second birthday.
Rotavirus vaccinations	Two or three rotavirus vaccinations on different dates of service in the period between 42 days after birth up to the second birthday.
PREGNANCY CARE	
Hepatitis B screening	Hepatitis B screening during pregnancy
RH(D) blood typing and antibody testing	Rh (D) blood typing and antibody testing during pregnancy
Syphilis screening	Syphilis screening during pregnancy
Diabetes screening	Diabetes screening during pregnancy
Chlamydia screening, age < 25	Chlamydia screening for women age <25 who are pregnant
PREVENTIVE CARE	
Colon cancer screening	Adults 50-75 years of age who had appropriate screening for colorectal cancer.
Annual Influenza Vaccination	Influenza vaccination is the primary method for preventing influenza and its severe complications. ACIP recommends annual influenza vaccination for everyone 6 months and older with any licensed, appropriate influenza vaccine (IIV, RIV4, or LAIV4) with no preference expressed for any one vaccine over another.
Tobacco cessation intervention	Counseling and interventions were provided to prevent tobacco and/or nicotine caused disease in adults and pregnant women.
Pneumococcal vaccine	ACIP recommends pneumococcal vaccines for children, adults with risk factors and the elderly.
Lead screening	Children who had one or more capillary or venous lead blood tests for lead poisoning by the second birthday.
BMI percentile for children	Children 3-17 years of age who had BMI percentile documentation during the measurement year.
Nutrition counseling	Children 3-17 years of age who had nutrition counseling during the measurement year.
Physical activity counseling	Children 3-17 years of age who had physical activity counseling during the measurement year.
PSA testing avoidance	Men age \geq 70 who were screened unnecessarily for prostate cancer.
PREVENTIVE CARE - WOMEN	
Breast cancer screening	Women 50-74 years of age who had a mammogram to screen for breast cancer
Cervical cancer screening	Women 21-64 years of age who were screened for cervical cancer.
Unnecessary cervical cancer screening	Adolescent females 16-20 screened unnecessarily for cervical cancer.

NAME	CLINICAL RATIONALE
Chlamydia screening	Women identified as sexually active and who had at least one test for chlamydia during the measurement year.
ROUTINE ASSESSMENT	
Annual Wellness Visits	Annual physicals allow your physician to review any changes that have occurred over the last year and encourage healthy choices and lifestyle.
Biennial PSA Screening	The Task Force recommends men ages 50 to 69 make an individual decision about prostate cancer screening with their clinician, however, this measure will determine the compliance of those members who have had PSA screening within the last 24 months.
COVID-19 Results	COVID19 Results for members who have a COVID19 test completed.
WELL CHILD	
Physical exam: 5 by 12 months	Recommendations for preventive pediatric health care 6-12 months
Physical exam: 3 by 6 months	Recommendations for preventive pediatric health care 0-6 months
Physical exam: Age 1-3, 2 per year	Recommendations for preventive pediatric health care 1-3 years
Physical exam: Age 3-7, 1 per year	Recommendations for preventive pediatric health care 3-7 years
Physical exam: Age 7-12, 1 per year	Recommendations for preventive pediatric health care 7-12 years
Physical exam: Age 12-21, 1 per year	Recommendations for preventive pediatric health care 12-21 years

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