

Client	BLUE CROSS BLUE SHIELD OF ILLINOIS STANDARD ALGORITHM <i>Implemented for Blue Cross Blue Shield of Illinois</i>	
Measure Title	ADHERENCE TO LIPID-LOWERING MEDICATION	
Disease State	Hyperlipidemia	Indicator Classification¹ Adherence
Strength of Recommendation²	A (<i>Lipid Lowering Medication</i>) C (<i>Physician Impact on Adherence</i>)	
Clinical Intent	To ensure that members who are taking medications to treat hyperlipidemia receive an adequate supply of medications over a predefined time period.	
Physician Specialties	Cardiovascular Disease, Family Practice, General Practice, Internal Medicine, Mixed Specialty	
Clinical Rationale	<p>Disease Burden</p> <ul style="list-style-type: none"> • More than 50 million U.S. adults have blood cholesterol levels high enough to require medical advice and treatment.[2] • Poor adherence to drug therapy remains a major therapeutic challenge. On average, patients prescribed lipid-lowering drugs remain without filled prescriptions for over one-third of the year.[3] In fact, only about half of the patients are still taking lipid-lowering drugs six months after they are given a prescription, and only 30-40% are taking them after 12 months.[4] • Adherence is defined as the extent to which patients take their medications as prescribed. As such, non-adherence includes events such as not filling or refilling a prescription, taking an incorrect medication dose, missing a dose, or taking a medication at the wrong time.[5, 6] <p>Reason for Indicated Intervention or Treatment</p> <ul style="list-style-type: none"> • Evidence suggests that physician counseling regarding disease risk factors and medication persistence plays an important role in maximizing patient adherence. <p>Evidence supporting Intervention or Treatment</p> <ul style="list-style-type: none"> • The West of Scotland Coronary Prevention Study Group found in a randomized controlled trial that patients with a lipid lowering medication adherence rate greater than 75% reduced their risk of death from any cause by one third more than those with lower compliance.[7] • Early and frequent follow up by physicians, and especially lipid testing, has been associated with increased adherence to lipid lowering therapy.[8] • Several strategies may help increase adherence to lipid-lowering drug regimes, including prescription of well tolerated drugs, educating patients, providing regular follow up, and behavioral interventions. [9, 10] Physicians may also play a role by simplifying drug regimes and initiating all heart disease medications (e.g. antihypertensives and lipid lowering drugs) at the same time.[11] Greater adherence may also follow from initial, measurable results (greater reduction in LDL cholesterol levels during the first three months of statin therapy have been associated with greater adherence 4-36 months after the initial prescription).[8] • A recent Cochrane Database meta-analyses of studies aimed at 	

improving medication adherence (not specifically focused on lipid lowering medications) found that almost all of the interventions that were effective for long-term care were complex, including combinations of more convenient care, information, reminders, self-monitoring, reinforcement, counseling, family therapy, and other forms of additional supervision or attention by a health care provider (physician, nurse, pharmacist or other).[12]

- A large review article in the New England Journal of Medicine suggested that “practitioners should always look for poor adherence and can enhance adherence by emphasizing the value of a patient’s regime, making the regime simple, and customizing the regime to a patient’s lifestyle. Asking patients non-judgmentally about medication-taking behavior is a practical strategy for identifying poor adherence. A collaborative approach to care augments adherence. Patients who have difficulty maintaining adequate adherence need more intensive strategies than do patients who have less difficulty with adherence, a more forgiving regime, or both. New technologies such as reminders through cell phones and personal digital assistants, and pillboxes with paging systems may be needed to help patients who have the most difficulty meeting the goals of a regime. [13] Another review in the Canadian Journal of Public Health included similar suggestions. [14]

Clinical Recommendations

- The American Heart Association expert panel on compliance recommends that patients, providers and healthcare organizations integrate efforts to reduce noncompliance with medications. This includes improved patient education, contracts, self-monitoring, telephone follow-ups, and social support.[15]
- The Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) concluded that none of the current methods of improving adherence with chronic health problems are very effective, and that there is little evidence patient medication adherence can be improved in a consistent manner. However, physicians should pay attention to potential interventions to improving adherence to treatment.[16]
- The Institute for Clinical Systems Improvement suggests that “Asking non-threatening, open-ended questions during patient interviews can be a useful method of assessing medication adherence. The interview should include probes for factors that contribute to non-adherence including adverse reactions, misunderstandings of asymptomatic or chronic disease treatment, depression, cognitive impairment, complex dosing regimens, and financial constraints.”[17]

Source Health Benchmarks[®], Inc

Denominator Continuously enrolled members ages 19 years or older by the end of the measurement year, who had a diagnosis of hyperlipidemia at anytime in the member’s history and at least a 60 day supply of lipid lowering medication during the six months following the index prescription date (index prescription = first script during the one year period beginning six months prior to the measurement year).

Denominator Exclusion Members who were pregnant or diagnosed with Rhabdomyolysis in the 0-6 months after the index date (inclusive of index date).

Numerator	Members in the denominator who had sufficient days supply of lipid lowering drugs to provide for at least 80% coverage of the 6 month period following the index prescription date of lipid lowering drugs (inclusive of index date).
Interpretation of Score	High score implies better performance
Physician Attribution	All physicians in the applicable specialty areas who came in contact with the member 0 - 6 months after the index date (inclusive of the index date).
References	<ol style="list-style-type: none"> 1. <i>Practice parameters for the diagnosis and treatment of asthma. Joint Task Force on Practice Parameters, representing the American Academy of Allergy Asthma and Immunology, the American College of Allergy, Asthma and Immunology, and the Joint Council of Allergy, Asthma and Immunology.</i> J Allergy Clin Immunol, 1995. 96(5 Pt 2): p. 707-870. 2. Sempos, C.T., et al., <i>Prevalence of high blood cholesterol among US adults. An update based on guidelines from the second report of the National Cholesterol Education Program Adult Treatment Panel.</i> Jama, 1993. 269(23): p. 3009-14. 3. Avorn, J., et al., <i>Persistence of use of lipid-lowering medications: a cross-national study.</i> Jama, 1998. 279(18): p. 1458-62. 4. Simons, L.A., G. Levis, and J. Simons, <i>Apparent discontinuation rates in patients prescribed lipid-lowering drugs.</i> Med J Aust, 1996. 164(4): p. 208-11. 5. Vermeire, E., et al., <i>Patient adherence to treatment: three decades of research. A comprehensive review.</i> J Clin Pharm Ther, 2001. 26(5): p. 331-42. 6. Sacket, D.L., <i>Introduction</i>, in <i>Compliance with therapeutic regimens</i>, D.L. Sackett and R.B. Haynes, Editors. 1976, Johns Hopkins University Press: Baltimore. p. 1-6. 7. Shepherd, J., et al., <i>Prevention of coronary heart disease with pravastatin in men with hypercholesterolemia. West of Scotland Coronary Prevention Study Group.</i> N Engl J Med, 1995. 333(20): p. 1301-7. 8. Benner, J.S., et al., <i>Follow-up lipid tests and physician visits are associated with improved adherence to statin therapy.</i> Pharmacoeconomics, 2004. 22 Suppl 3: p. 13-23. 9. Riesen, W.F., R. Darioli, and G. Noll, <i>Lipid-lowering therapy: strategies for improving compliance.</i> Curr Med Res Opin, 2004. 20(2): p. 165-73. 10. Schedlbauer, A., et al., <i>Interventions to improve adherence to lipid lowering medication.</i> Cochrane Database Syst Rev, 2004(4): p. CD004371. 11. Chapman, R.H., et al., <i>Predictors of adherence with antihypertensive and lipid-lowering therapy.</i> Arch Intern Med, 2005. 165(10): p. 1147-52. 12. Haynes, R.B., et al., <i>Interventions for helping patients to follow prescriptions for medications.</i> Cochrane Database Syst Rev, 2002(2): p. CD000011. 13. Osterberg, L. and T. Blaschke, <i>Adherence to Medication.</i> N Engl J Med, 2005. 353(5): p. 487-497. 14. Feldman, R., et al., <i>Adherence to pharmacologic management of hypertension.</i> Can J Public Health, 1998. 89(5): p. 116-8. 15. Miller, N.H., et al., <i>The multilevel compliance challenge: recommendations for a call to action. A statement for healthcare professionals.</i> Circulation, 1997. 95(4): p. 1085-90. 16. <i>Third Report of the National Cholesterol Education Program (NCEP)</i>

Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) final report. *Circulation*, 2002. **106**(25): p. 3143-421.

17. ICSI, *Lipid management in adults.*, in *Guidelines*. 2005, ICSI: Bloomington, MN.

¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis	Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).
Screening	Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure).
Disease Management	Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).
Medication Monitoring	Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)
Medication Adherence	Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication).
Utilization	Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).

² Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

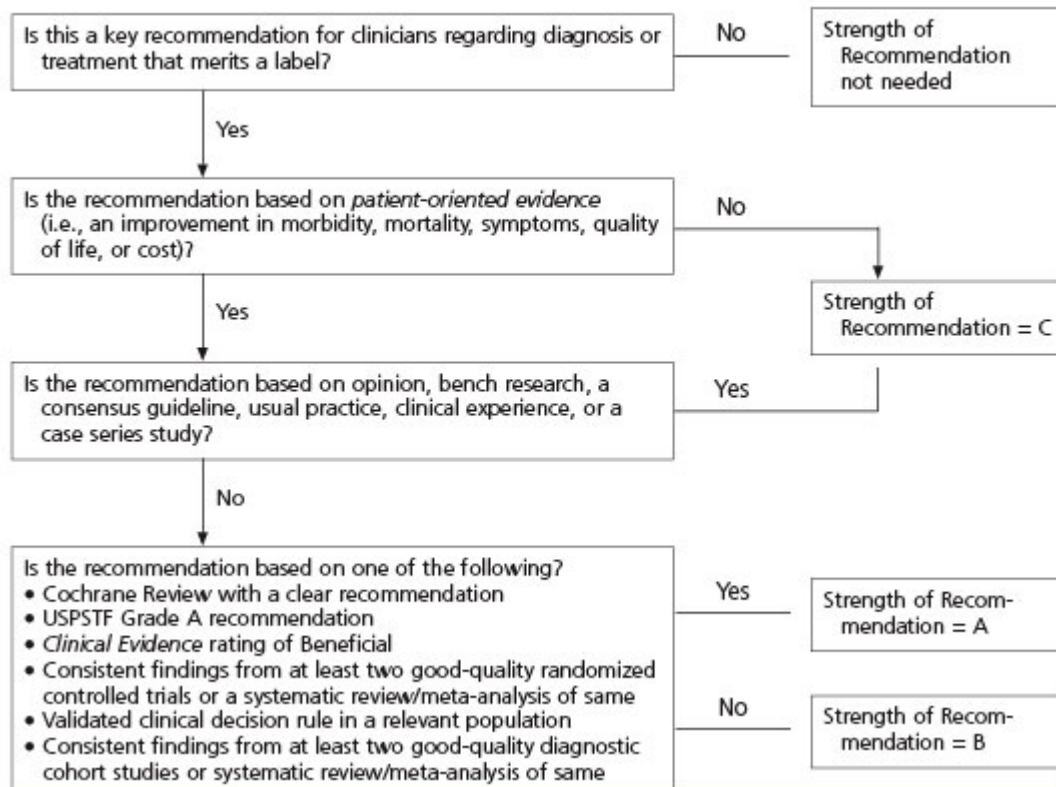


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)