Clinical Insights:

Effective Care for Patients with Chronic Conditions

2007

Clinical Insights:
Effective Care for Patients with Asthma

Medications: The following medications may be recommended for patients with asthma, depending on individual circumstances:

- **Short-acting (rescue) medications:** As needed to promptly relieve acute symptoms.
- **Long-acting (controller) medications:** To maintain long-term asthma control in patients who will benefit, including patients with persistent asthma and children and infants who require symptomatic treatment two or more times per week.
  - Inhaled corticosteroids are the most potent and consistently effective long-term controller medications for asthma. In general, inhaled corticosteroids are the treatment of choice.
  - For patients treated with inhaled corticosteroids who need additional control, long-acting inhaled beta$_2$-agonists are more effective than leukotriene antagonists.
  - Abruptly stopping long-acting controller medications, particularly inhaled beta$_2$-agonists, may result in acute worsening of symptoms (withdrawal).

Demonstrate that patients are using inhalers and/or nebulizers correctly. Use spacers for children and spacer/masks for young children.

Written action plan that includes:

- Explicit, patient-specific recommendations for minimizing environmental triggers.
- How to assess changes in airflow obstruction (see Respiratory monitoring below), and adjust medication, as appropriate.
- Actions to take when medications are ineffective or if an emergency situation arises.
- Contacts for securing urgent care, if needed.

Respiratory monitoring: The nature and intensity of self-monitoring should be individualized, based on such factors as asthma severity, patient's ability to perceive or report airflow obstruction, availability of peak flow meters, and patient preferences. Components of respiratory monitoring may include the following, depending on individual needs:

- **Symptom monitoring:** For the most common forms of asthma (seasonal/allergic, mild intermittent, and mild persistent); early recognition of symptoms (cold, cough, chest tightness) and step-up in medications.
- **Peak flow measurement:** In moderate-to-severe persistent asthma, peak flow measurement may be done daily, or for two-to three-week intervals when symptoms change, as part of a symptom-based action plan.
- **Spirometry:** At diagnosis, on stabilization of peak flow, and every one to two years in patients with moderate-to-severe persistent asthma. (Regular spirometry may not be needed in mild-to-moderate asthma.)

Trigger identification and avoidance: Including environmental smoke, occupational dusts/chemicals, indoor/outdoor pollution, dust, dander, perfumes, etc.

Smoking cessation: All patients, and avoidance of secondary smoke.

Depression: The association between asthma and depression is less strong than for other chronic conditions such as cardiovascular disease or diabetes. However, screening is always appropriate for patients with any chronic condition. Screening improves the accurate identification of depression in primary care settings, and treatment of depressed adults identified in primary care settings decreases clinical morbidity. Two simple questions may be used as a screening tool ("Over the past two weeks, have you felt down, depressed, or hopeless?" and "Over the past two weeks, have you felt little interest or pleasure in doing things?").

Influenza vaccine: Annually for all patients, aged 6 months and older, with chronic lung conditions (including asthma), and for household contacts and caregivers of adults or children with chronic lung conditions (including asthma).

Pneumococcal vaccine: All adults aged 65 years and older. A second dose is recommended five years after the first for some groups, including (not a complete list) patients with chronic kidney disease, those who are immunocompromised, and those vaccinated before age 65. Asthma alone is not an indication for pneumococcal vaccination.

The material in this condition management program is based on:

National Institutes of Health, NHLBI, NIH Publication No. 97-4051 (1997). Expert Panel Report 2, Guidelines for the Diagnosis and Management of Asthma. Available at: http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf.

NAEPP. Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma-Update on Selected Topics 2002. *J Allerg Clin Immunol.* 2002;110(Suppl)*:*S141-S219. National Institutes of Health, NHLBI. NIH Publication Nos. 02-5074 (2003) and 02-5075 (2002).

Full update available at: http://www.nhlbi.nih.gov/guidelines/asthma/asthmafullrpt.pdf
Quick reference available at: http://www.nhlbi.nih.gov/guidelines/asthma/execsumm.pdf

American Academy of Allergy, Asthma, & Immunology, Inc. (AAAAI). Pediatric Asthma, Promoting Best Practice, Guide for Managing Asthma in Children. ©1999-2004. AAAAI Web site. Available at:
http://www.aaaai.org/members/resources/initiatives/pediatricasthmaguidelines/default.stm

U.S. Preventive Services Task Force. Screening for Depression: Recommendations and Rationale. *Ann Intern Med.* 2002*;*136:760-764. Available at: http://www.ahrq.gov/clinic/3rduspstf/depression/depressrr.htm

Pignone MP, Gaynes BN, Rushton, JL, et al. Screening for Depression in Adults: A Summary of the Evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2002;136(10):765-776. Available at: http://www.ahrq.gov/clinic/3rduspstf/depression/depsum.pdf

Karasu TB, Gelenberg A, Merriam A, et al. *Practice Guideline for the Treatment of Patients with Major Depressive Disorder.* 2nd ed. Arlington, VA: American Psychiatric Association; 2000:1-87. Available at:
http://www.psych.org/psych_pract/treatg/pg/Practice%20Guidelines8904/MajorDepressiveDisorder_2e.pdf

Fochtmann LJ and Gelenberg AJ. Guideline Watch: Practice Guideline for the Treatment of Patients With Major Depressive Disorder, 2nd ed. *FOCUS: The Journal of Lifelong Learning in Psychiatry*. 2005;3:34-42. Available at:
http://www.psych.org/psych_pract/treatg/pg/MDD_Watch_031005.pdf

Fiore MC, Bailey WC, Cohen SJ, et al. *Treating Tobacco Use and Dependence.* Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. June 2000. Available at:
http://www.surgeongeneral.gov/tobacco/treating_tobacco_use.pdf

Recommended Adult Immunization Schedule—United States, October 2006-September 2007. *MMWR*, 55(40):Q1-Q4. Available at:
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5540a10.htm?s_cid=mm5540a10_e

Recommended Immunization Schedules for Persons Aged 0–18 Years—United States, 2007. *MMWR*, 55(51):Q1-Q4. Available at:
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5551a7.htm?s_cid=mm5551a7_e

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Clinical Insights:

Effective Care for Patients with Chronic Obstructive Pulmonary Disease (COPD)

Smoking cessation: All patients.

Medications: The following medications may be recommended for patients with COPD, depending on individual patient circumstances, such as response to therapeutic trials:

- **Bronchodilators:** Given as needed or on a regular basis to prevent or reduce symptoms.
  - The principal bronchodilators are short-acting and long-acting beta$_2$-agonists and anticholinergics or a combination of these.
  - Although methylxanthines (e.g., theophylline) are not recommended as part of routine care, they may be added or substituted if patients have limited benefit and/or intolerable side effects with bronchodilators and/or inhaled corticosteroids.
  - Abruptly stopping daily-use bronchodilators may result in acute worsening of symptoms (withdrawal).
- **Corticosteroids:** Inhaled corticosteroids may reduce frequency of exacerbations and slow declines in health status in severe or very severe COPD with frequent exacerbations (three or more in past three years). Try to limit oral corticosteroid therapy to short-course treatment of exacerbations.

Written symptom response plan for dealing with new, different or worsening symptoms.

Long-term oxygen therapy if:

- **$PaO_2 < 55$ mm Hg**
- **$SaO_2 < 88$ percent,** or
- **PaO_2 56-59 with signs of pulmonary hypertension, peripheral edema suggesting heart failure, or polycythemia (hematocrit > 55 percent).**

NIPPV: Non-invasive positive pressure ventilation is particularly beneficial for COPD exacerbations associated with hypercapnia or respiratory failure.

Pulmonary rehabilitation or exercise: Specific components (patient education; self management strategies; nutritional support; respiratory muscle training) and exercise prescription vary. Benefits of programs lasting at least six weeks can include improved exercise tolerance, decreased dyspnea and decreased fatigue.

Respiratory monitoring: Spirometry is recommended for diagnosis and staging, and may be helpful for significant change in symptoms or a complication; periodic testing may help monitor changes over time.

Trigger avoidance: Including environmental smoke, occupational dusts/chemicals, indoor/outdoor pollution.

Surgical treatments: For carefully selected patients, consideration of bullectomy and lung volume reduction surgery may be appropriate.

Depression: Chronic disease is a risk factor for depression. Screening improves the accurate identification of depression in primary care settings, and treatment of depressed adults identified in primary care settings decreases clinical morbidity. Two simple questions may be used as a screening tool ("Over the past two weeks, have you felt down, depressed, or hopeless?" and "Over the past two weeks, have you felt little interest or pleasure in doing things?"). In addition, anxiety associated with chronic respiratory distress may be a major cause of decreased quality of life for patients with COPD, and appropriate treatment may improve outcomes.

Influenza vaccine: Annually for all patients, aged 6 months and older, with chronic respiratory conditions (including COPD); and for household contacts and caregivers of adults or children with chronic respiratory conditions (including COPD).

Pneumococcal vaccine: All adults aged 65 years and older. All patients, aged 2 years and older, with chronic cardiovascular or lung conditions (including COPD). A second dose is recommended five years after the first for some groups, including (not a complete list) patients with chronic kidney disease, those who are immunocompromised, and those vaccinated before age 65.

The material in this condition management program is based on:

Global Imitative for Chronic Obstructive Lung Disease (GOLD). Global Strategy for Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease, 2006. GOLD Web site. Available at: http://www.goldcopd.org/Guidelineitem.asp?l1=2&l2=1&intId=989

U.S. Preventive Services Task Force. Screening for Depression: Recommendations and Rationale. *Ann Intern Med.* 2002;136:760-764. Available at: http://www.ahrq.gov/clinic/3rduspstf/depression/depressrr.htm

Pignone MP, Gaynes BN, Rushton, JL, et al. Screening for Depression in Adults: A Summary of the Evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2002;136(10):765-776. Available at: http://www.ahrq.gov/clinic/3rduspstf/depression/depsum.pdf

Karasu TB, Gelenberg A, Merriam A, et al. *Practice Guideline for the Treatment of Patients with Major Depressive Disorder.* 2nd ed. Arlington, VA: American Psychiatric Association; 2000:1-87. Available at: http://www.psych.org/psych_pract/treatg/pg/Practice%20Guidelines8904/MajorDepressiveDisorder_2e.pdf

Fochtmann LJ and Gelenberg AJ. Guideline Watch: Practice Guideline for the Treatment of Patients With Major Depressive Disorder, 2nd ed. *FOCUS: The Journal of Lifelong Learning in Psychiatry*. 2005;3:34-42. Available at: http://www.psych.org/psych_pract/treatg/pg/MDD_Watch_031005.pdf

Fiore MC, Bailey WC, Cohen SJ, et al. *Treating Tobacco Use and Dependence.* Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. June 2000. Available at: http://www.surgeongeneral.gov/tobacco/treating_tobacco_use.pdf

Recommended Adult Immunization Schedule—United States, October 2006-September 2007. *MMWR*, 55(40):Q1-Q4. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5540a10.htm?s_cid=mm5540a10_e

Recommended Immunization Schedules for Persons Aged 0–18 Years—United States, 2007. *MMWR*, 55(51):Q1-Q4. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5551a7.htm?s_cid=mm5551a7_e

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Clinical Insights:
Effective Care for Patients with Coronary Heart Disease (CHD)

Medications: The following medications may be recommended for patients with CHD, depending on individual circumstances:

- **ACE inhibitors** (or angiotensin-2 receptor blockers, if ACEI not tolerated)
- **Beta blockers** (or calcium-channel blockers, if beta blockers not tolerated)
- **Aspirin (low-dose)** and/or other antiplatelet agent. Dual antiplatelet therapy with both clopidogrel and aspirin is recommended for one year following drug-eluting stent placement.
- **Statins**

NOTE: If needed to achieve blood pressure control, **diuretics** may be added to initial therapy.

Written action plan for responding to new, different or worsening symptoms.

Management of lipid levels: Regardless of baseline LDL levels, most patients with CHD will benefit from statin therapy to reduce LDL by 30 to 40 percent. Some expert guidelines recommend higher doses of statins (as tolerated) to reach specific LDL targets (e.g., below 100 or below 70), based on trials comparing lower doses vs. higher doses of statins. However, based on current evidence, the majority of the benefit of statins is achieved by lowering LDL by 30 to 40 percent. Measure lipid profile at least annually. Repeat lipid profiles at about four to six weeks after hospitalization and two to three months after initiation of or change in lipid-lowering medications.

Blood pressure management to achieve goal <140/90 with lifestyle changes and medications as needed. Blood pressure should be measured at each physician visit.

Exercise: Encourage at least 30 minutes of activity three to four days per week (preferably daily), as tolerated.

Weight management to achieve or maintain BMI 18.5 to 24.9 kg/m^2. When BMI exceeds 25, target waist circumference is 40 inches or less in men or 35 inches or less in women.

Smoking cessation: All patients.

Depression: Chronic disease in general, and coronary heart disease in particular, is a risk factor for depression. Screening improves the accurate identification of depression in primary care settings, and treatment of depressed adults identified in primary care settings decreases clinical morbidity. Two simple questions may be used as a screening tool ("Over the past two weeks, have you felt down, depressed, or hopeless?" and "Over the past two weeks, have you felt little interest or pleasure in doing things?").

Influenza vaccine: Annually for all patients, aged 6 months and older, with chronic cardiovascular conditions (including CHD), and for household contacts and caregivers of adults or children with chronic cardiovascular conditions (including CHD).

Pneumococcal vaccine: All adults aged 65 years and older. All patients, aged 2 years and older, with chronic cardiovascular conditions (including CHD). A second dose is recommended five years after the first for some groups, including (not a complete list) patients with chronic kidney disease, those who are immunocompromised, and those vaccinated before age 65.

The material in this condition management program is based on:

Smith SC Jr, Allen J, Blair RO, et al. AHA/ACC Guidelines for Secondary Prevention for Patients With Coronary and Other Atherosclerotic Vascular Disease: 2006 Update. *Circulation* 2006;113:2363-2372. Available at: http://circ.ahajournals.org/cgi/reprint/113/19/2363

Gibbons RJ, Abrams J, Chatterjee K, et al. ACC/AHA 2002 Guideline Update for the Management of Patients with Chronic Stable Angina. *Circulation.* 2003;107;149-158
Full text available at: http://www.acc.org/qualityandscience/clinical/guidelines/stable/stable_clean.pdf
Summary article available at: http://circ.ahajournals.org/cgi/reprint/107/1/149.pdf

Balady GJ, Ades PA, Comoss P, et al. Core Components of Cardiac Rehabilitation/Secondary Prevention Programs. *Circulation.* 2000;102:1069-1073. Available at: http://circ.ahajournals.org/cgi/reprint/102/9/1069.pdf

Mosca L, Banka CL, Benjamin EJ, et al. Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women: 2007 Update. *Circulation* [serial online]. 2007;1-21. Available at: http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.107.181546

Harrington RA, Becker RC, Ezekowitz TW, et al. Antithrombotic Therapy for Coronary Artery Disease: The Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. *Chest*. 2004;126:513-548. Available at: http://www.chestjournal.org/cgi/reprint/126/3_suppl/513S

Grundy SM, Cleeman JI, Bairey CN, et al. Implications of Recent Clinical Trials for the National Cholesterol Education Program Adult Treatment Panel III Guidelines. *Circulation.* 2004;110:227-239. Available at: http://circ.ahajournals.org/cgi/reprint/110/2/227

National Institutes of Health, NHLBI. NIH Publication No. 02-5215 (2002) and 01-3670 (2001). Third Report of the NCEP Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III).
Final Report available at: http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3full.pdf
Executive Summary available at: http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3xsum.pdf

Fletcher K, Berra K, Ades P, et al. AHA Scientific Statement Managing Abnormal Blood Lipids: A Collaborative Approach. *Circulation.* 2005;112:3184-3209. Available at: http://circ.ahajournals.org/cgi/content/full/112/20/3184

U.S. Preventive Services Task Force. Screening for Depression: Recommendations and Rationale. *Ann Intern Med.* 2002;136:760-764. Available at: http://www.ahrq.gov/clinic/3rduspstf/depression/depressrr.htm

Pignone MP, Gaynes BN, Rushton, JL, et al. Screening for Depression in Adults: A Summary of the Evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2002;136(10):765-776. Available at: http://www.ahrq.gov/clinic/3rduspstf/depression/depsum.pdf

Karasu TB, Gelenberg A, Merriam A, et al. *Practice Guideline for the Treatment of Patients with Major Depressive Disorder.* 2nd ed. Arlington, VA: American Psychiatric Association; 2000:1-87. Available at: http://www.psych.org/psych_pract/treatg/pg/Practice%20Guidelines8904/MajorDepressiveDisorder_2e.pdf

Fochtmann LJ and Gelenberg AJ. Guideline Watch: Practice Guideline for the Treatment of Patients With Major Depressive Disorder, 2nd ed. *FOCUS: The Journal of Lifelong Learning in Psychiatry*. 2005;3:34-42. Available at: http://www.psych.org/psych_pract/treatg/pg/MDD_Watch_031005.pdf

National Institutes of Health, NHLBI. NIH Publication Nos. 04-5230 (2004) and 03-5233 (2003). The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.
Full text available at: http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf
Express available at: http://www.nhlbi.nih.gov/guidelines/hypertension/express.pdf

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Pi-Sunyer FX, Becker DM, Bouchard C, et al. Clinical Guidelines On The Identification, Evaluation, And Treatment Of Overweight And Obesity In Adults. NIH, NHLBI, NIH Publication Nos. 98-4083 (1998) and 00-4084 (2000).
Full Guidelines available at: http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf
Practical Guide available at: http://www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf

Fiore MC, Bailey WC, Cohen SJ, et al. *Treating Tobacco Use and Dependence.* Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. June 2000. Available at: http://www.surgeongeneral.gov/tobacco/treating_tobacco_use.pdf

Recommended Adult Immunization Schedule—United States, October 2006-September 2007. *MMWR*, 55(40):Q1-Q4. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5540a10.htm?s_cid=mm5540a10_e

Recommended Immunization Schedules for Persons Aged 0–18 Years—United States, 2007. *MMWR*, 55(51):Q1-Q4. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5551a7.htm?s_cid=mm5551a7_e

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Clinical Insights:
Effective Care for Patients with Diabetes Mellitus (DM)

Medications: The following medications may be recommended for patients with diabetes, depending on individual circumstances:

- **Oral hypoglycemic agents**
- **Insulin**
- **ACE inhibitors** (or angiotensin-2 receptor blockers, if ACEI not tolerated): Reduce blood pressure, slow progression of diabetic nephropathy and reduce cardiovascular mortality.
- **Diuretics, beta blockers and/or calcium-channel blockers:** As needed to control hypertension and reduce cardiovascular events.
- **Statins** (and/or other lipid-lowering agents as needed): Reduce risk of cardiovascular events, including mortality.
- **Aspirin (low-dose)** (or other antiplatelet agent if aspirin is contraindicated): Reduce risk of cardiovascular events in patients over age 40 and those with history of or risk factors for cardiovascular disease.

Written action plan for responding to hypoglycemia, hyperglycemia and sick day management.

Patients with diabetes are at high risk of developing vascular disease including coronary artery disease, peripheral vascular disease and stroke. In those with type 2 diabetes, the mortality benefit from treating hypercholesterolemia and hypertension is greater than the mortality benefit from treating elevated blood glucose. Control of hypertension also reduces the risk of microvascular complications, including nephropathy and retinopathy.

Blood pressure management to achieve goal <130/80. Blood pressure should be measured at each physician visit.

Management of lipid levels: Regardless of baseline LDL levels, most patients with diabetes will benefit from statins to reduce LDL by 30 to 40 percent. Some expert guidelines recommend higher doses of statins (as tolerated) to reach specific LDL targets (e.g., below 100 or below 70). Lipid profile should be measured at least annually. Lipid profile may be measured every two years in patients under age 40 with low-risk lipid values (LDL<100; HDL>50; TG<150).

- **Patients with diabetes and overt cardiovascular disease:** Statin therapy is recommended.
- **Patients with diabetes aged 40 and older without cardiovascular disease:** Assess risks and consider statin therapy to achieve an LDL reduction of 30 to 40 percent.
- **Patients with diabetes under age 40 without cardiovascular disease**: Assess risks and consider statin therapy for those at increased risk. There is less evidence to support the use of statins in this group.
- **Pediatric diabetes:**
  - **Type 2:** Assess lipid profile at diagnosis but after glycemic control is achieved in children aged 2 years and older. Repeat every two years; or every five years if low risk and no family history. LDL goal is below 100 in children aged 2 years and older with cardiovascular risk factors in addition to diabetes.
  - **Type 1:** Assess lipid profile at diagnosis but after glycemic control is achieved if risk factors present, otherwise the initial lipid profile can be done at puberty or around age 12.

Glycemic control, with a goal of achieving A1C levels < 7 percent, or as close to normal as possible without significant episodes of hypoglycemia for individuals. A1C levels should be measured twice yearly in patients who are achieving glycemic goals; quarterly in patients who are not achieving goals or for whom therapy has changed.

  - Less stringent targets (e.g., A1C < 8 percent) may be appropriate for frail older adults, those with life expectancy less than 10 years and no current evidence of eye or kidney disease, and others for whom the potential risks (including polypharmacy) of intensive glycemic control may exceed the benefits.
  - More stringent goals (i.e., A1C < 6 percent) may be considered for patients who can tolerate tighter glycemic control and those who already have evidence of microvascular complications (nephropathy and retinopathy).

- **Pediatric diabetes:** Some studies suggest that both recurrent severe hypoglycemia and chronic hyperglycemia may impair cognitive development in young children. Glycemic goals in children may need to be modified in order to achieve control while avoiding hypoglycemic episodes.

Eye care: Dilated retinal exams are recommended annually or more frequently if retinopathy is progressing. Less frequent exams (every two to three years) may be considered in patients with a normal dilated retinal exam at baseline. For patients with type 2 diabetes, begin annual screening shortly after diagnosis. For adults and children aged 10 years and older with type 1 diabetes, begin annual screening three to five years after diagnosis.

- **Pediatric diabetes:** Screening is generally not recommended before age 10. Diabetes-related eye disease that is severe enough to threaten vision is rare before puberty, but the duration of diabetes before puberty may increase the risk of diabetic retinopathy, so it is important to consider each case individually.

Renal care: Annual screening tests for **microalbuminuria** are recommended starting at diagnosis for all patients with type 2 diabetes. In patients with type 1 diabetes, begin annual screening five years after diagnosis. Annual screening is not necessary in patients on ACEI or ARB therapy. Some experts recommend continued annual screening after detection of microalbuminuria (even in patients on ACEI or ARB); however this recommendation is controversial and not supported by trial evidence. Experts also recommend annual measurement of **serum creatinine** for estimating GFR.

- **Pediatric diabetes:** Begin annual screening at age 10 or five years after diagnosis.

Weight management (goal: BMI 25 or below): Weight loss improves glucose tolerance, reduces blood pressure, improves lipid levels, and reduces cardiovascular risks.

Nutrition: Implement dietary changes as needed to achieve and maintain goals for glycemic control, lipid profile, blood pressure, body mass index, and renal function.

Foot care: Patients, especially those at high risk for foot conditions (e.g., with peripheral vascular disease or neuropathy), should examine their own feet daily. Experts suggest visual inspections at each diabetes office visit and a comprehensive foot examination annually.

Smoking cessation: All patients.

Depression: Chronic disease is a risk factor for depression. Screening improves the accurate identification of depression in primary care settings, and treatment of depressed adults identified in primary care settings decreases clinical morbidity. Two simple questions may be used as a screening tool ("Over the past two weeks, have you felt down, depressed, or hopeless?" and "Over the past two weeks, have you felt little interest or pleasure in doing things?").

Influenza vaccine: Annually for all patients, aged 6 months and older, with diabetes; and for household contacts and caregivers of adults or children with diabetes.

Pneumococcal vaccine: All adults aged 65 years and older. All patients, aged 2 years and older, with diabetes. A second dose is recommended five years after the first for some groups, including (not a complete list) patients with chronic kidney disease, those who are immunocompromised, and those vaccinated before age 65.

The material in this condition management program is based on:

American Diabetes Association. Standards of Medical Care in Diabetes—2007. *Diabetes Care.* 2007;30(Suppl 1):S4-S41. Available at: http://care.diabetesjournals.org/cgi/reprint/30/suppl_1/S4. [NOTE: Health Dialog Clinical Guidelines include the Standards of Care and accompanying supplemental materials.]

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Final Report available at: http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3full.pdf
Executive Summary available at: http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3xsum.pdf

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National Institutes of Health, NHLBI. NIH Publication Nos. 04-5230 (2004) and 03-5233 (2003). The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.
Full text available at: http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf
Express available at: http://www.nhlbi.nih.gov/guidelines/hypertension/express.pdf

U.S. Preventive Services Task Force. Screening for Depression: Recommendations and Rationale. *Ann Intern Med.* 2002;136:760-764. Available at: http://www.ahrq.gov/clinic/3rduspstf/depression/depressrr.htm

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Clinical Insights:
Effective Care for Patients with Heart Failure (HF)

NOTE: The material in these Insights is primarily intended for use in patients with left ventricular systolic dysfunction. Treatment objectives for patients with primarily diastolic dysfunction (i.e., those with diastolic abnormalities of the left ventricle, regardless of ejection fraction or symptoms) are similar at this time; trials are under way to determine optimal evidence-based management strategies for this population. Management approaches differ for patients with heart failure secondary to valvular causes; these are not discussed here.

Fluid balance: Changes in volume status often precede onset of clinical exacerbations by several days. Patients are advised to record their weight daily. A **written action plan** may instruct patients to notify their physician or adjust medication (diuretic) doses in response to predetermined changes in body weight and/or symptoms.

Medications: The following medications may be recommended for patients with HF, depending on individual circumstances:

- **Diuretics:** Regulate volume status and improve symptoms.
  - Patients who have persistent symptoms despite optimal treatment with other medications may benefit from addition of an aldosterone antagonist (e.g., spironolactone).
- **ACE inhibitors** (or angiotensin-2 receptor blockers, if ACEI not tolerated): Relieve symptoms, improve clinical status, and reduce mortality and hospitalization.
- **Beta blockers:** Reduce symptoms, improve clinical status, and reduce mortality and hospitalization.
- **Digitalis (in many cases):** Improve symptoms, exercise tolerance, and quality of life in patients with severe symptoms.
- **Isosorbide dinitrate plus hydralazine**: Reduce mortality and hospitalizations and improve quality of life in African-American patients.
- **Aspirin (low-dose):** When otherwise indicated (i.e., HF of ischemic origin) to reduce risk of cardiovascular events.
- **Statins**: As appropriate for lipid management per NCEP guidelines.

Blood pressure management: To achieve goal <130/80, if tolerated. In trials, optimal outcomes are seen at SBP 110 to 130. Blood pressure should be measured at each physician visit. Particularly in elderly patients, care should be taken to avoid postural hypotension. [NOTE: neither JNC-VII nor 2005 ACC/AHA CHF guideline specifies a particular BP goal.]

Management of lipid levels with therapeutic lifestyle changes and medications, if needed, in accordance with recommended guidelines. For patients with co-morbid CHD and CHD-risk equivalents, LDL goal is <100. Lipid profile should be measured at least annually.

Exercise: Aerobic exercise (20-45 minutes, three to five days/week; supervised as appropriate), if tolerated, to increase exercise tolerance and lessen symptoms. Alternatively, several short periods per day, as tolerated.

Smoking cessation: All patients.

Depression: Chronic disease is a risk factor for depression. Screening improves the accurate identification of depression in primary care settings, and treatment of depressed adults identified in primary care settings decreases clinical morbidity. Two simple questions may be used as a screening tool ("Over the past two weeks, have you felt down, depressed, or hopeless?" and "Over the past two weeks, have you felt little interest or pleasure in doing things?"). In addition, anxiety associated with chronic respiratory distress may be a major cause of decreased quality of life for patients with HF, and appropriate treatment may improve outcomes.

Influenza vaccine: Annually for all patients, aged 6 months and older, with chronic cardiovascular conditions (including HF); and for household contacts and caregivers of adults or children with chronic cardiovascular conditions (including HF).

Pneumococcal vaccine: All adults aged 65 years and older. All patients, aged 2 years and older, with chronic cardiovascular conditions (including HF). A second dose is recommended five years after the first for some groups, including (not a complete list) patients with chronic kidney disease, those who are immunocompromised, and those vaccinated before age 65.

The material in this condition management program is based on:

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