Podiatric care can improve the quality of life for senior citizens.

**Goal**

The primary goal is to provide an approach for comprehensive podogeriatric assessment and risk stratification to help prevent complications and improve the quality of life in the older patient.

**Objectives**

1) Identify primary foot and related complications associated with the older patient.

2) To describe clinical strategies to assess and stratify the “at risk” patient.

3) To recommend a protocol for comprehensive podogeriatric assessment that stresses referral, education, prevention, and care.

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**Clinical Assessment of Podogeriatric Patients**

Podiatric care can improve the quality of life for senior citizens.

**By Arthur E. Helfand, D.P.M.**

**Introduction**

Much of the ability to remain ambulatory in the period of aging is directly related to foot health. In order to accomplish this aim, practitioners must think comprehensively, and recognize that team care must be an essential part of chronic disease management in the care of the older patient. Foot health education, including programs developed by the Pennsylvania Diabetes Academy of Pennsylvania, are available to both patients and professionals, and should be employed.

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Podogeriatric...

is clear that adults with chronic disease and older patients are a high risk for foot related disease and should maintain continuing foot assessment, education, surveillance, and care. For this population, the ability to prevent complications and maintain mobility and ambulation will be reflected in their quality of life and their ability to remain mentally alert and active in their communities.

The initial clinical pedal assessment of the geriatric patient has been developed as a comprehensive podogeriatric and chronic disease assessment protocol to augment geriatric and chronic disease assessment. The objective was to develop a process to identify foot and related problems and stratify risk, for those potential foot problems that might develop as complications of chronic diseases, associated with older patients. The goal to the protocol’s application is one primarily of secondary prevention. Its utilization also stresses the need for patient and professional education as well as the need for appropriate management by those licensed to provide and maintain the highest level of quality care and concern. The protocol included a compilation of various procedures and clinical impressions that also includes Medicare’s “at-risk” criteria for management.

**Helfand Index**

The process, protocol, and its validation were supported with the assistance of a contract from the Pennsylvania Department of Health in cooperation with Temple University School of Podiatric Medicine, Pennsylvania Diabetes Academy (Foundation of the Pennsylvania Medical Society), Philadelphia Corporation for Aging, and Thomas Jefferson University. The protocol enhances the ability to document and stratify risk by the use of an appropriate clinical assessment to help patients understand the need for foot health, and provide education for both patients and professionals. The final protocol was termed the “Helfand Index” by the Department of Health.

**General Information and Methodology**

Foot problems associated with aging and as the result of disease, disability, and deformity, as well as complications associated with many chronic diseases, represent some of the most distressing, disabling and quality-of-life limiting conditions known. As society considers the basic needs of the older population and those related to chronic diseases such as diabetes mellitus, the multiple forms of arthritis, peripheral arterial disease, as well as those conditions which produce sensory, peripheral, musculoskeletal, and motor deficits, it is recognized that health is but one of those needs, and not always the highest in priority. Given an ideal set of circumstances, there are two important catalytic factors that help determine the patient’s ability to remain as a self-sufficient and reasonably independent part of society. They are a keen mind and the ability to ambulate or remain mobile.

Foot problems in the older patient and those with chronic disease are a significant health concern, both from a standpoint of incidence and prevalence. The loss of the ability to walk that result from a focal foot problem or as the result of a complication of a systemic disease, can have a significant negative and limiting impact on the patient’s ability to maintain a productive

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**Table 1**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amyotrophic Lateral Sclerosis (ALS)</td>
<td>(335.20)</td>
</tr>
<tr>
<td>Arteriosclerosis obliterans (A.S.O., arteriosclerosis of the extremities, occlusive peripheral arteriosclerosis)</td>
<td>(440.20-440.29, 440.9)</td>
</tr>
<tr>
<td>Arteritis of the feet</td>
<td>(447.6)</td>
</tr>
<tr>
<td>Buerger’s disease (thromboangiitis obliterans)</td>
<td>(443.1)</td>
</tr>
<tr>
<td>Chronic indurated cellulitis</td>
<td>(681.10, 681.11, 682.6, 682.7, 682.9)</td>
</tr>
<tr>
<td>*Chronic thrombophlebitis</td>
<td>(451.0, 451.11, 451.19, 451.2)</td>
</tr>
<tr>
<td>Chronic venous insufficiency</td>
<td>(459.81, 443.9, 459.30-459.39)</td>
</tr>
<tr>
<td>*Diabetes mellitus</td>
<td>(250.00-250.93, 648.00-648.04)</td>
</tr>
<tr>
<td>Intractable edema—secondary to a specific disease</td>
<td>(e.g., congestive heart failure, kidney disease, hypothyroidism)</td>
</tr>
<tr>
<td>Lymphedema—secondary to a specific disease</td>
<td>(e.g., Milroy’s disease, malignancy)</td>
</tr>
<tr>
<td>Peripheral neuropathies involving the feet</td>
<td>(337.1, 357.0-357.9)</td>
</tr>
<tr>
<td>*Associated with malnutrition and vitamin deficiency</td>
<td>(266.0-266.9, 357.4)</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>(general, pellagra)</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>(265.2, 357.5)</td>
</tr>
<tr>
<td>Malabsorption</td>
<td>(celiac disease, tropical sprue)</td>
</tr>
<tr>
<td>Pernicious anemia</td>
<td>(281.0)</td>
</tr>
<tr>
<td>*Associated with carcinoma</td>
<td>(357.3)</td>
</tr>
<tr>
<td>*Associated with diabetes mellitus</td>
<td>(250.6, 357.2)</td>
</tr>
<tr>
<td>*Associated with drugs and toxins</td>
<td>(357.6-357.7)</td>
</tr>
<tr>
<td>*Associated with multiple sclerosis</td>
<td>(340)</td>
</tr>
<tr>
<td>*Associated with uremia (chronic renal disease)</td>
<td>(585)</td>
</tr>
<tr>
<td>Associated with traumatic injury</td>
<td>(959.7)</td>
</tr>
<tr>
<td>Associated with leprosy or neurosyphilis</td>
<td>(030.0-030.3, 094.0-094.87)</td>
</tr>
<tr>
<td>Associated with hereditary disorders</td>
<td>(356.0)</td>
</tr>
<tr>
<td>Hereditary sensory radiculopathy</td>
<td>(356.2)</td>
</tr>
<tr>
<td>Angiokeratoma corporis diffusum</td>
<td>(Fabry’s)</td>
</tr>
<tr>
<td>Amyloid neuropathy</td>
<td>(277.3)</td>
</tr>
<tr>
<td>Peripheral vascular disease</td>
<td>(356.0-356.9, 443.81-443.89, 447.1, 459.9)</td>
</tr>
<tr>
<td>Raynaud’s disease</td>
<td>(443.0)</td>
</tr>
</tbody>
</table>

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Continued on page 147
Podogeriatrics

Podogeriatrics is that special area of podiatric medical practice that focuses on health promotion, prevention, and the treatment and management of foot and related problems, disability, deformity, and the pedal complications of chronic diseases in later life. Podogeriatrics is a component of healthcare for older adults. Foot conditions that present in older patients require special considerations for management as to medical problems for any other system. These conditions may be local, the result of complications associated with multiple chronic diseases, local foot changes associated with the aging process itself, and the residual effects of repetitive injury over the course of an individual’s lifetime. Older persons tend to react to illness, deformity and disease differently than younger persons. Care includes an understanding of the specific syndromes that older patients experience and the complexity of being a part of a team that manages multiple diseases.

In most cases, podogeriatric care is provided as a part of a total approach to patient management that also includes consideration of issues that relate to foot complaints and their relationship to falls, confusion, neglect, and the capacity to perform the simple activities of daily living. Social support is also a consideration in patient management. In many cases, because foot and related problems are the primary complaint, the patient seeks podiatric care initially. This initial contact with the healthcare system may become the starting point for total geriatric care. Comprehensive podogeriatric assessment is a component of this process. The ability to remain pain-free and mobile is a key element to maintaining an independent quality of life.

Continued on page 148

TABLE 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>030.0-030.3</td>
<td>Leprosy</td>
</tr>
<tr>
<td>094.0-094.87</td>
<td>Neurosyphilis</td>
</tr>
<tr>
<td>*250.00-250.93</td>
<td>Diabetes mellitus</td>
</tr>
<tr>
<td>265.2</td>
<td>Pellagra (added July 15, 2002)</td>
</tr>
<tr>
<td>*266.0-266.9</td>
<td>Deficiency of B-complex components (added July 15, 2002)</td>
</tr>
<tr>
<td>272.7</td>
<td>Lipoides</td>
</tr>
<tr>
<td>277.3</td>
<td>Amyloioidosis</td>
</tr>
<tr>
<td>281.0</td>
<td>Pernicious anemia</td>
</tr>
<tr>
<td>335.20</td>
<td>Amyotrophic lateral sclerosis</td>
</tr>
<tr>
<td>337.1</td>
<td>Peripheral autonomic neuropathy in disorders classified elsewhere (added July 15, 2002)</td>
</tr>
<tr>
<td>*340</td>
<td>Multiple Sclerosis</td>
</tr>
<tr>
<td>356.0-356.9</td>
<td>Hereditary and idiopathic peripheral neuropathy</td>
</tr>
<tr>
<td>357.0</td>
<td>Acute infective polyneuritis</td>
</tr>
<tr>
<td>*357.2</td>
<td>Polyneuropathy in diabetes</td>
</tr>
<tr>
<td>*357.3</td>
<td>Polyneuropathy in malignant disease</td>
</tr>
<tr>
<td>*357.4</td>
<td>Polyneuropathy in other diseases classified elsewhere</td>
</tr>
<tr>
<td>357.5</td>
<td>Alcoholic polyneuropathy</td>
</tr>
<tr>
<td>*357.6</td>
<td>Polyneuropathy due to drugs</td>
</tr>
<tr>
<td>*357.7</td>
<td>Polyneuropathy due to other toxic agents</td>
</tr>
<tr>
<td>357.81-357.89</td>
<td>Inflammatory and toxic neuropathy, other</td>
</tr>
<tr>
<td>357.9</td>
<td>Inflammatory and toxic neuropathy, unspecified</td>
</tr>
<tr>
<td>*400.20-400.29</td>
<td>Atherosclerosis of native arteries of the extremities</td>
</tr>
<tr>
<td>400.9</td>
<td>Generalized and unspecified atherosclerosis (added July 15, 2002)</td>
</tr>
<tr>
<td>443.0</td>
<td>Raynaud’s syndrome</td>
</tr>
<tr>
<td>443.1</td>
<td>Thromboangiitis obliterans (Buerger’s disease)</td>
</tr>
<tr>
<td>443.81-443.89</td>
<td>Other specified peripheral vascular diseases</td>
</tr>
<tr>
<td>443.9</td>
<td>Peripheral vascular disease, unspecified</td>
</tr>
<tr>
<td>447.1</td>
<td>Stricture of artery (added July 15, 2002)</td>
</tr>
<tr>
<td>447.6</td>
<td>Arteritis, unspecified (use for arteritis of the feet)</td>
</tr>
<tr>
<td>*451.0</td>
<td>Phlebitis and thrombophlebitis of superficial vessels of lower extremities</td>
</tr>
<tr>
<td>*451.11</td>
<td>Phlebitis and thrombophlebitis of femoral vein (deep) (superficial)</td>
</tr>
<tr>
<td>*451.19</td>
<td>Phlebitis and thrombophlebitis of deep vessels of lower extremities, other</td>
</tr>
<tr>
<td>*451.2</td>
<td>Phlebitis and thrombophlebitis of lower extremities, unspecified</td>
</tr>
<tr>
<td>457.1</td>
<td>Other lymphedema (added July 15, 2002)</td>
</tr>
<tr>
<td>459.2</td>
<td>Compression of vein (added July 15, 2002)</td>
</tr>
<tr>
<td>459.30-459.39</td>
<td>Chronic venous hypertension (idiopathic)</td>
</tr>
<tr>
<td>459.81</td>
<td>Venous (peripheral) insufficiency, unspecified</td>
</tr>
<tr>
<td>459.9</td>
<td>Unspecified circulatory system disorder (added July 15, 2002)</td>
</tr>
<tr>
<td>579.0</td>
<td>Celiac disease</td>
</tr>
<tr>
<td>579.1</td>
<td>Tropical sprue</td>
</tr>
<tr>
<td>579.9</td>
<td>Unspecified intestinal malabsorption</td>
</tr>
<tr>
<td>*585</td>
<td>Chronic renal failure</td>
</tr>
<tr>
<td>*648.00-648.04</td>
<td>Other current conditions in the mother classifiable elsewhere, but complicating pregnancy, childbirth, or the puerperium, diabetes mellitus</td>
</tr>
<tr>
<td>681.10, 681.11</td>
<td>Cellulitis and abscess of toe</td>
</tr>
<tr>
<td>682.6</td>
<td>Other cellulitis and abscess, leg, except foot (added July 15, 2002)</td>
</tr>
<tr>
<td>682.7</td>
<td>Other cellulitis and abscess, foot, except toes</td>
</tr>
<tr>
<td>682.9</td>
<td>Other cellulitis and abscess, unspecified site (added July 15, 2002)</td>
</tr>
<tr>
<td>757.0</td>
<td>Hereditary edema of legs (added July 15, 2002)</td>
</tr>
<tr>
<td>782.3</td>
<td>Edema (added July 15, 2002)</td>
</tr>
<tr>
<td>959.7</td>
<td>Injury, knee, leg, ankle, and foot</td>
</tr>
</tbody>
</table>

Note: Those diagnostic codes identified by asterisks (*) require that the patient have been seen by the physician treating the risk disease, within six months prior to the podiatric visit.
Foot health and foot care are an important and many time overlooked component of an older person’s overall health and well-being. Foot problems may hinder a person’s ability to be free of pain and discomfort, to maintain proper mobility, and to enjoy interpersonal relationships, a positive self-image, and to maintain activity and a high quality of independence and life. Many chronic diseases such as diabetes mellitus, peripheral arterial insufficiency, arthritis, other metabolic diseases and conditions which produce pain, vascular limitations, and a diminished sensation, are more prevalent in the older population with increased symptoms as individuals age. These patients are at higher risk for chronic complications and comorbidities, which increase the potential for marked limitation of activity, hospitalization, and limb loss.

Foot health has a direct relationship to older persons being able to maintain their activities of daily living. These contribute to the development of conditions associated with disability, from arthritis and ulceration. Foot problems are common in the older population as a result of disease, deformity, complications, and neglect, resulting from a lack of preventive service, at the primary, secondary and tertiary levels. They contribute to disability and can reduce an older person’s independence and quality of life.

**Routine Foot Care**

Medicare may provide coverage for what is defined as primary “foot and nail care” or “routine foot care” if the criteria of vascular and sensory deficits are met. There are systemic conditions that permit coverage. The primary chronic risk diseases identified by Medicare, that usually present with pedal complications and coverage in the adult and older population include those listed in Table 1.

In addition, Medicare has identified a series of codes that support coverage requirements for medical necessity listed as Table 2.

Other and equally important chronic diseases or conditions that provide an equal level of risk include those listed in Table 3 as examples.

In addition, several clinical findings, defined as Class Findings of Risk Factors for Medicare, are also needed to qualify patients for primary foot care management. They are listed in Table 4 and are also included as a part of the protocol.

An additional specialized category of risks are identified in Table 5 as they usually present with sensory and vascular deficits.

There are many other factors that also contribute to the development of foot problems of the adult population, including the aging process itself, as well as abuse and neglect. Some of these considerations include:

- The degree of ambulation

**TABLE 3**

<table>
<thead>
<tr>
<th>Acromegaly</th>
<th>Alzheimer’s Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis—DJD</td>
<td>Arthritis—RA</td>
</tr>
<tr>
<td>Gout</td>
<td>Cerebral Palsy</td>
</tr>
<tr>
<td>Coagulation Defect—Hemophilia</td>
<td>CVA</td>
</tr>
<tr>
<td>Phlebitis</td>
<td>Sickle-Cell Anemia</td>
</tr>
<tr>
<td>Sarcoidosis</td>
<td>Previous Amputation—Foot</td>
</tr>
<tr>
<td>Pre-ulcerative Hyperkeratosis</td>
<td>History of Prior Ulcer</td>
</tr>
<tr>
<td>Foot Deformity</td>
<td>Vascular Insufficiency</td>
</tr>
<tr>
<td>Reflex Sympathetic Dystrophy</td>
<td>Coagulation Defects, Anticoagulants</td>
</tr>
<tr>
<td>Chronic Obstructive Pulmonary Disease</td>
<td>Hypertension</td>
</tr>
<tr>
<td>Post-Trauma</td>
<td>Hansen’s Disease</td>
</tr>
<tr>
<td>Mental Illness</td>
<td>Mental Retardation</td>
</tr>
<tr>
<td>Hemophilia</td>
<td>Patients on Anticoagulant Therapy</td>
</tr>
<tr>
<td>Paralysis</td>
<td>Post-Stroke Patients</td>
</tr>
<tr>
<td>Ambulatory Dysfunction</td>
<td>Parkinson’s Disease</td>
</tr>
</tbody>
</table>

**Social support is also a consideration in patient management.**

The duration of prior hospitalization

- Limitation of activity
- Prior institutionalization
- Episodes of social segregation
- Prior care
- Emotional adjustments to disease and life in general
- Multiple medications and drug interactions
- Complications and residuals associated with risk diseases.

**Assessment Protocol**

The historical evolution of this assessment protocol began with a federally funded program which was conducted by the Philadelphia Department of Health and St. Luke’s & Children’s Medical Center (James C. Giuffre Medical Center) between 1962 and 1965. The format was also utilized in a seven-year longitudinal study conducted in cooperation with the Pennsylvania Department of Welfare in 1967 and 1974 at the South Mountain Restoration Center. The protocol was restructured for two programs in the last ten years and was supported by the Pennsylvania Department of Health, Pennsylvania Diabetes Academy, and the Philadelphia Corporation for Aging. The assessment instrument was designed to provide a reasonable and efficient way of assessing the most common foot problems associated with adult chronic disease and aging, stratify risk, and provide a means for patient education and referral for care. The concept was based upon the precept of the secondary prevention of chronic disease, i.e. by finding complications at their earliest onset, preventing the progress of disease to minimize complications.

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Discussion

The process contains information related to demographics; primary medical facilities and management; a history of present problems; pertinent past medical history; a systems review; current medications; foot dermatologic, foot orthopedic, peripheral vascular and neurological evaluation; neurological risk stratification; peripheral arterial risk stratification; footwear evaluation; a primary assessment; an initial plan and referral direction; the recording of Medicare’s class findings; risk stratification of onychomycosis and other related nail conditions; plantar pressure keratotic patterns; ulcer classification; and the classification of mechanical or pressure hyperkeratotic lesions.

The evaluation process may be limiting ambulation and helping maintain a higher quality of life and independence.

The current Comprehensive Podogeriatric and Chronic Disease Assessment Protocol, Appendix I includes a process to assess and evaluate common foot problems, and stratify “at-risk” patients. Once risks are identified and foot conditions noted, a direction for care, education and preventive measures can be prescribed.

Those notations marked A-1 through C-5, denote Class Findings for Medicare, which are used as qualifiers for primary foot care coverage for those patients with identified “at risk” chronic diseases and/or conditions.

Those notations marked with asterisks, denote qualifiers for therapeutic shoes under Medicare’s program for “at-risk” patients with diabetes mellitus. Those criteria include:

- History of partial or complete amputation of the foot
- History of previous foot ulceration
- History of pre-ulcerative callus
- Peripheral neuropathy with evidence of callus formation
- Foot Deformity
- Poor Circulation

The evaluation process may be enhanced by the use of accessible instrumentation, such as a C-128 tuning fork; neurologic hammer; percussion hammer; Babinski hammer; biothesiometer to determine vibration perception threshold (VPT); monofilament sensory testing (MFT) devices such as the Semmes-Weinstein 5.07 nylon monofilament, Norton monofilament, or the West enhanced sensory test—Tacticon; Doppler; radiometer—infrared surface temperature scanner for skin perfusion assessment; oscilloscope; and/or plethysmography.

The section on the history of present illness includes primary foot problems and their relationship to chronic disease and activities. The section on past history includes the most common systemic diseases, but needs to be augmented by primary and secondary risks as the evaluation evolves. The sections on systems review and medications provide a cross-reference to potential risk diseases.

Dermatological Exam

The dermatologic section provides a focus on multiple changes that affect pressure and mechanical keratosis, changes that occur in the toenail, infections and pre-ulcerative states. The foot orthopedic section highlights the most common foot deformities and syndromes identified in the older patient and patients with chronic diseases, such as arthritis or hallux valgus. Anterior imbalance identifies inappropriate weight bearing and correlates with the plantar keratoma pattern noted later in the examination. Digit flexus identified hammertoes and rotational deformities and correlates to both immobility.

TABLE 4

<table>
<thead>
<tr>
<th>CLASS A FINDINGS</th>
<th>CLASS B FINDINGS</th>
<th>CLASS C FINDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nontraumatic amputation of foot or integral skeletal portion thereof</td>
<td>Absent posterior tibial pulse</td>
<td>Claudication</td>
</tr>
<tr>
<td>Absent dorsalis pedis pulse</td>
<td>Advanced trophic changes as: (three required)</td>
<td>Temperature changes (e.g., cold feet)</td>
</tr>
<tr>
<td>Hair growth (decrease or absence)</td>
<td>Nail changes (thickening)</td>
<td>Edema</td>
</tr>
<tr>
<td>Pigmentary changes (discoloration)</td>
<td>Skin texture (thin, shiny)</td>
<td>Paresthesias (abnormal spontaneous sensations in the feet)</td>
</tr>
<tr>
<td>Skin color (rubor or redness)</td>
<td></td>
<td>Burning</td>
</tr>
</tbody>
</table>

Medicare requires one class A, two class B, or one class B and two class C to meet basic coverage requirements.

TABLE 5

<table>
<thead>
<tr>
<th>Vascular Grafts</th>
<th>Joint Implants</th>
<th>Heart Valve Replacement</th>
<th>Active Chemotherapy</th>
<th>Renal Failure—Dialysis</th>
<th>Anticoagulant Therapy</th>
<th>Hemorrhagic Disease</th>
<th>Chronic Steroid Therapy</th>
<th>Immunosuppressive States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vascular Grafts</td>
<td>Joint Implants</td>
<td>Heart Valve Replacement</td>
<td>Active Chemotherapy</td>
<td>Renal Failure—Dialysis</td>
<td>Anticoagulant Therapy</td>
<td>Hemorrhagic Disease</td>
<td>Chronic Steroid Therapy</td>
<td>Immunosuppressive States</td>
</tr>
</tbody>
</table>
Podogeriatric...

balance, prominent metatarsal heads and Morton’s syndrome, which is an anatomical shortening of the first metatarsal segment producing improper weight distribution and pressure areas. Soft tissues inflammation is also noted.

The classification of mechanical or pressure keratosis is a modification of the program outlined by Merriman and Tollifield. The ulcer classification was adapted from Simms, Cavanaugh and Ulbrecht and provides an earlier identification of risk. The onychial grades at risk that was modified and adapted from Strauss, Hart and Winant recognizes earlier risk. This assessment instituted to reduce the complications of chronic disease and adheres to the principles of secondary prevention of disease.

Vascular Exam

The vascular evaluation identifies those symptoms associated with arterial insufficiency and ischemia. DP refers to the dorsalis pedis pulse and PT to the posterior tibial pulse. Amputation, if present, is noted as above the knee (AKA), below the knee (BKA), FF (forefoot), and T (toes), which are particularly important in patients with diabetes and arterial insufficiency. The Neurological Evaluation identifies primary reflect and sensory changes.

Vascular and risk stratification is noted following initial evaluation. Footwear information, assessment and initial plan are also noted. Class findings refer to those findings, identified by Medicare, as qualifiers for primary foot care for those patients with primary risk diseases noted in Tables 1, 2, and 3. It should be noted that all of the information listed in Table 4 should qualify in a similar manner at some point in the future. The criteria for onychomycosis débridement coverage are also mandates of Medicare.

The final impression may not be a final diagnosis, but it identifies problems requiring management, surfaces latent risk factors and potential complications, provides a direction for education and prevention, and increases the awareness of foot health and care as an essential element for comprehensive patient care.

Summary

Foot impairment, including diseases and disorders of the foot, are common in elderly patients and may impact general health and functioning of older patients. Periodic comprehensive podogeriatric assessment is recommended for older patients. Practitioners should be aware of those local conditions and the complications of systemic diseases, such as diabetes mellitus, peripheral arterial disease, arthritic changes, neurological deficiencies and mental health symptoms that manifest foot symptoms and signs. Geriatricians should recognize the common clinical findings and should refer patients for podiatric care and management in a timely and appropriate manner as indicated. Inasmuch as a majority of geriatric foot problems cannot be totally prevented, the concept of secondary prevention, i.e., finding the disorder or disease at its earliest manifestation, and managing the disorder properly, can significantly improve the quality of life for older citizens.

NOTE 1

Foot Care services for Medicare purposes must be provided by practitioners who are permitted by state license to render examination, diagnosis, and treatment of foot diseases.

NOTE 2

Services furnished for the evaluation and management of a diabetic patient with diabetic sensory neuropathy, resulting in a loss of protective sensation (LOPS) must include the following:

1. a diagnosis of LOPS
2. a patient history
3. a physical examination consisting of findings regarding at least the following elements:
   a. visual inspection of the forefoot, hindfoot, and toe web spaces
   b. evaluation of protective sensation
   c. evaluation of foot structure and biomechanics
   d. evaluation of vascular status
   e. evaluation of skin integrity
   f. evaluation and recommendation of footwear
4. patient education

NOTE 3

The Podogeriatric and Chronic Disease Assessment Protocol (Helfand Index) provides the components for the existing requirements provided that state licensure laws are met.

NOTE 4

Feet First, If The Shoe Fits, and Assessing The Older Diabetic Foot (CD) are available from the Pennsylvania Department of Health, Harrisburg, Pennsylvania.

NOTE 5

Highmark Blue Shield (Pennsylvania) has identified the following information from the American Diabetes Association: Foot care—Amputation and foot ulceration are one of the most common consequences of diabetic neuropathy and a major cause of morbidity and disability in people with diabetes. Early recognition and management of independent risk factors can prevent or delay adverse outcomes. The risk of ulcers or amputations is increased in people who have had diabetes >10 years, are male, have poor glucose control, or have cardiovascular, retinal, or renal complications. The following foot-related risk conditions are associated with an increased risk of amputation:

- Peripheral neuropathy with loss of protective sensation
- Altered biomechanics (in the presence of neuropathy)
- Evidence of increased pressure (erythema, hemorrhage under a callus)
- Bony deformity
- Peripheral vascular disease (decreased or absent pedal pulses)
- A history of ulcers or amputation
- Severe nail pathology

Targeted patient education and appropriate footwear can reduce the risk of ulceration. For a detailed review of the evidence and further discussion, see the American Diabetes Association's technical review and position statement titled “Preventive Foot Care in Persons With Diabetes” (61,62).

Bibliography

APPENDIX I

PODOGERIATRIC ASSESSMENT AND CHRONIC DISEASE PROTOCOL

DATE OF SERVICE ___________________________ MR # ___________________________

PATIENT NAME ___________________________________________________________________________ Date of Birth ___________________________ SOCIAL SECURITY # ___________________________

ADDRESS _______________________________________________________________________ CITY ___________________________ STATE ___________________________ ZIP CODE ___________________________

SEX M F RACE B W A L N A WEIGHT ___________ LBS HEIGHT ___________ IN MARITAL STATUS M S W D SEP ___________________________

NAME OF PRIMARY PHYSICIAN/HEALTH CARE FACILITY ___________________________________________________________________________ DATE OF LAST VISIT ___________________________

HISTORY OF PRESENT ILLNESS

___ Swelling of Feet ___ Infections ___ Duration
___ Painful Feet ___ Cold Feet ___ Context
___ Hyperkeratosis ___ Other ___ Modifying Factors
___ Onychial Changes ___ Location ___ Associated Signs & Symptoms
___ Burns ___ Quality ___ Severity
___ Painful Toe Nails ___ Severity

PAST HISTORY

___ Heart Disease ___ Thyroid ___ Hypercholesterol
___ High Blood Pressure ___ Allergy ___ Gout
___ Arthritis ___ Diabetes Mellitus ___ History: Smoking: OH
___ * Circulatory Disease ___ * IDDM ___ * NIDDM ___ * Family—Social

SYSTEMS REVIEW

___ Constitutional ___ Hematologic ___ Neurologic
___ ENT ___ Card/Vasc ___ Endocrine
___ Eyes ___ Musculo-Skeletal ___ GI
___ Skin/Hair ___ GYN ___ Immunologic
___ Respiratory ___ Lymphatic ___ GU
___ * Psychiatric ___ * GU

MEDICATIONS

___ Antihypertensives ___ Anticoagulants ___ Antidystrophic Drugs
___ Antidiabetes ___ Anticholesterol ___ Antithyroid Drugs
___ tranquilizers ___ Antihistamines ___ Antidepressants
___ Antispasmodics ___ Antiinflammatories ___ Corticosteroids

DERMATOLOGIC

___ Hyperkeratosis ___ Onychodystrophy ___ Hematoma
___ Onychauxis B-2-b ___ * Cynosis ___ * Rubor
___ Infection ___ Xerosis ___ * Predermatitic
___ * Ulceration ___ * Tinea Pedis ___ * Discolored
___ * Onychomycosis ___ * Verruca

FOOT ORTHOPEDIC

___ Hallux Valgus ___ * Pes Valgoplanus ___ * Prominent Met Head
___ * Anterior Imbalance ___ * Pes Cavus ___ * Charcot Joints
___ * Digit Flexus ___ * Hallux Rigidus-Limitus ___ Other
___ * Pes Planus ___ * Morton’s Syndrome Burritos

VAScular EVALUATION

___ Coldness C-2 ___ * Night Cramps ___ * Amputation
___ * Trophic Changes B-2-a ___ * Edema C-3 ___ * AKA BKA FF T A-1
___ * DP Absent B-3 ___ * Claudication C-1 ___ * Atrophy B-2-d
___ * PT Absent B-1 ___ * Varicosities

NEUROLOGIC EVALUATION

___ * Achilles ___ * Paresthesia C-4 ___ * Burning C-5
___ * Vibratory ___ Superficial Plantar ___ Other
___ * Sharp/Dull ___ * Joint Position

RISK CATEGORY—NEUROLOGIC

0 = No Sensory Loss ___ 2 = Sensory Loss & Foot Deformity
___ 1 = Sensory Loss ___ 3 = Sensory Loss, Ulceration, & Deformity

RISK CATEGORY—VASCULAR

0-0 NO CHANGE ___ 1-4 ISCHEMIC REST PAIN
___ 1-2 MODERATE CLAUDICATION ___ 4-6 MINOR TISSUE LOSS
___ 1-3 SEVERE CLAUDICATION ___ 5-6 MAJOR TISSUE LOSS

CLASS FINDINGS

___ A1 Nontraumatic Amputation ___ B2a Skin Color (rubor or redness)
___ B1 Absent Posterior Tibial ___ B3 Absent Dorsalis Pedis
___ B2 Advanced Trophic Changes ___ C1 Claudication
___ B2a Hair Growth (decrease or absent) ___ C2 Temperature Changes (cold)
___ B2b Nail Changes (thickening) ___ C3 Edema
___ B2c Pigmentary Changes (discoloration) ___ C4 Paresthesia
___ B2d Skin Texture (thin, shiny) ___ C5 Burning

ONYCHOMYCOsis: Documentation of mycosis/dystrophy causing secondary infection and/or pain, which results or would result in marked limitation of ambulation.

Discoloration Onycholysis
Hypertrophy Secondary Infection
Subungual Debris Limitation of Ambulation and Pain

CLASSIFICATION OF MECHANICAL OR PRESSURE HYPERKERATOSIS

GRADE DESCRIPTION
0 NO LESION
1 NO SPECIFIC TYLOMA PLAQUE, BUT diffuse or pinch hyperkeratotic tissue present
OR IN NARROW BANDS
2 CIRCUMSCRIBED, PUNCTATE OVAL, OR CIRCULAR, WELL DEFINED THICKENING OF KERATINIZED TISSUE
3 HELOMA MILLIARDE OR HELOMA DURUM WITH NO ASSOCIATED TYLOMA
4 WELL DEFINED TYLOMA PLAQUE WITH A DEFINITE HELOMA WITHIN THE LESION
5 EXTRAVASCULAR, MACERATION AND EARLY BROKEN DOWN OF STRUCTURES UNDER THE TYLOMA OR CALLUS LAYER
6 COMPLETE BROKEN DOWN OF STRUCTURE OF HYPERKERATOTIC TISSUE, EPIDERMIS, EXTENDING TO SUPERFICIAL DERMAL INVOLVEMENT

PLANTAR KERATOMATA PATTERN

LT 1 2 3 4 5 RT 1 2 3 4 5

ONYCHIAL GRADES AT RISK

Grade I NORMAL Grade IV HYPERTROPHIC
Grade II MILD HYPERTROPHY Grade III HYPERTROPHIC
Grade III HYPERTROPHIC Grade IV DEFORMED
Grade IV Dystrophic Grade V DYSTROPHIC
Grade V MYCOTIC
MYCOTIC
INFECTED
INFECTED
ONYCHODYSPLASIA

FOOTWEAR SATISFACTORY HYGIENE SATISFACTORY

YES NO YES NO

STOCKINGS: NYLON COTTON WOOL OTHER NONE

ASSESSMENT

PLAN
___ PODIATRIC REFERRAL ___ MEDICAL REFERRAL ___ VASCULAR STUDIES ___ IMAGING
___ PATIENT EDUCATION ___ SPECIAL FOOTWEAR ___ CLINICAL LAB ___ Rx

0-0 NO LESION
1 NO SPECIFIC TYLOMA PLAQUE, BUT diffuse or pinch hyperkeratotic tissue present
OR IN NARROW BANDS
2 CIRCUMSCRIBED, PUNCTATE OVAL, OR CIRCULAR, WELL DEFINED THICKENING OF KERATINIZED TISSUE
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Grade III HYPERTROPHIC Grade IV DEFORMED
Grade IV Dystrophic Grade V DYSTROPHIC
Grade V MYCOTIC
MYCOTIC
INFECTED
INFECTED
ONYCHODYSPLASIA

FOOTWEAR SATISFACTORY HYGIENE SATISFACTORY

YES NO YES NO

STOCKINGS: NYLON COTTON WOOL OTHER NONE
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Podogeriatrics...

10. Centers for Medicare & Medicaid Services (CMS), Department of Health and Human Services (DHHS), Program Memorandum, Carriers, Transmittal B-02-091, Requirements for Payment of Medicare Claims for Foot and Nai...
1) Which one of the following disorders is not a qualifier for “foot care” with class findings under Medicare?
   A) Parkinson’s disease
   B) Diabetes mellitus
   C) Peripheral arterial insufficiency
   D) Diabetes with neuropathy

2) Of the following foot deformities, which one is considered as a degenerative arthritis?
   A) Plantar fasciitis
   B) Pes planus
   C) Hallux rigidus
   D) Hallux varus

3) Which one of the following is considered as an onychodystrophic change?
   A) Onychomycosis
   B) Onychorrhexis
   C) Onychia
   D) Paronychia

4) Which one of the following changes is an associated clinical finding in the older diabetic patient?
   A) Achilles Reflex Loss
   B) Onychomycosis
   C) Hallux valgus
   D) Hallux limitus

5) The primary initial measurement for diabetic neuropathy in the older patient today is:
   A) Reflex loss
   B) Achilles reflex loss
   C) Loss of protective sensation
   D) Vibratory loss

6) The number of pairs of “therapeutic shoes” that are covered by Medicare per year is?
   A) 1
   B) 2
   C) 3
   D) 4

7) Which one of the following is not a “class finding” under Medicare?
   A) Edema
   B) Hallux valgus
   C) Paresthesia
   D) Burning

8) The appropriate term for excessive dryness of the feet of an older patient is?
   A) Keratosis
   B) Hyperkeratosis
   C) Hyperpigmentation
   D) Xerosis

9) Which of the following is not considered as relevant for the coverage of the débridement of onychomycosis?
   A) Subungual hematoma
   B) Subungual debris
   C) Onycholysis
   D) Discoloration

10) Which one of the following toenail disorders usually indicates a prescription for antibiotics?
    A) Onychorrhexis
    B) Onychodysplasia
    C) Paronychia
    D) Onychomadesis

11) Which one of the following disorders is not a qualifier for “foot care” with class findings under Medicare?
    A) Alzheimer’s disease
    B) Leprosy
    C) Pellagra with malnutrition
    D) Arteritis of the feet

12) Which one of the following disorders is not a qualifier for “foot care” with class findings under Medicare?
    A) Buerger’s disease
    B) Chronic indurated cellulitis
    C) Alcoholic polyneuropathy
    D) Post-stroke patients

13) Which one of the following disorders is not a qualifier for “foot care” with class findings under Medicare?
    A) Intractable edema associated with congestive heart failure
    B) Mental retardation
    C) Peripheral neuropathy associated with uremia
    D) Amyotrophic lateral sclerosis

14) Which of the following is not a qualifier for “therapeutic shoes”?
    A) Hallux valgus
    B) Digiti flexus
    C) Onychogryphosis
    D) Pes cavus

15) Utilizing the Sims, Cavanaugh & Ulbrecht Classification of Ulcers, hyperkeratotic lesion with evidence of a sub-keratotic hematoma would be classed as which grade?
    A) 0
    B) 1
    C) 2
    D) 3

Continued on page 154
16) Which one of the following disorders is not a qualifier for “foot care” with class findings under Medicare?
   A) Arteriosclerosis obliterans
   B) Raynaud’s disease
   C) Gout
   D) Diabetes mellitus–Type II

17) Which of the following usually is defined as a “chronic infection”?
   A) Paronychia
   B) Onychia
   C) Onychocryptosis
   D) Onychomycosis

18) Which of the following is usually defined as an “acute infection”?
   A) Paronychia
   B) Onychomycosis
   C) Onychia
   D) Onychauxis

19) Which of the following is usually defined as an “onychodystrophy”?
   A) Onychocryptosis
   B) Onychia
   C) Paronychia
   D) Onychogryphosis

20) Which of the following terms is considered in the listing of Class Findings?
   A) Onychia
   B) Hallux valgus
   C) Onychauxis
   D) Pes cavus

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18. A B C D  
19. A B C D  
20. A B C D

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Please indicate the date you completed this exam

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_____ Somewhat  _____ Not at all

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