

# THE IHS PRIMARY CARE PROVIDER

A journal for health professionals working with American Indians and Alaska Natives



January 2003

Volume 28, Number 1

## Chronic Pain (Part 1)

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### Abstract

*Although tribal variation exists, chronic pain (CP) in Native American patients is associated with alcohol abuse, addictive disorders, orthopedic morbidity, chronic diseases, and emotional and physical disability.<sup>1,2,3,4</sup> Studies show that CP causes nervous system changes that result in persistent pain even after correction of the original injury. Patient evaluation and management involves a multidisciplinary approach that focuses on the whole patient, including pain symptoms, functional disabilities, comorbid illnesses, and medication use or overuse. Treatment for CP involves a comprehensive approach using medications and functional rehabilitation, including education, identification and management of co-morbidities, the collaborative determination of reachable goals, and regular reassessment.*

### Introduction

The purpose of this article is to help clinicians focus on the whole patient and address key issues in treatments and strategies available for chronic pain, while considering some of the common problems and epidemiological profiles presented by patients in the Indian health care system.

Chronic pain (CP) is defined as pain lasting more than 3-6 months. In the author's experience, patients with CP are encountered frequently in clinical practice in IHS; indeed, most pain texts cite multiple references describing pain as the number one reason patients present for care in the ambulatory setting.<sup>5</sup> CP patients are five times more likely to use the health care system than those without pain.<sup>6</sup> Many patients have complicated presentations with significant orthopedic injuries, chronic diseases, addictive disorders, psychiatric comorbidity, and social problems.<sup>7</sup>

Recent Joint Commission for Accreditation of Healthcare

Organizations (JCAHO) and Agency for Healthcare Policy and Research (AHCPR; now the Agency for Healthcare Research and Quality, AHRQ)) recommendations increase the focus on the patient's right to effective pain management, while leaving providers with new questions concerning how these patients can be safely managed. Some state medical boards are now requiring CME in pain management as a condition for relicensure. Other incentives to attend to pain treatment are recognition that pain is harmful and that improved pain management is cost-effective.<sup>5</sup> Several studies show improving pain management costs less than continuing practices that result in inadequate treatment.<sup>8</sup> As pain treatment benefits are becoming more clearly described, many third party payers now cover the cost of treatment and will continue to do so.

While the rights of patients with pain have expanded, the science of pain and its treatment have also grown. For example, new findings reveal that the memory of pain can be more damaging than the pain experience itself. These and other findings are leading to rapid changes in clinical practice with more use

### In this Issue...

- 1 Chronic Pain (Part 1)
- 7 How Do We Screen for and Diagnose Dementia in AI/AN Elders?
- 9 Memory Disorders in Primary Care
- 11 Introducing PCC+
- 15 Hypertension and Chronic Kidney Disease
- 17 The Indian Health Service 15<sup>th</sup> Annual National Research Conference.
- 19 15<sup>th</sup> Annual Research Conference Call for Papers – Abstracts.
- 21 4<sup>th</sup> Annual Advances in Indian Health
- 22 Position Vacancies
- 25 Meetings of Interest

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of preemptive analgesia whenever possible.<sup>9</sup> Pain practice treatment has become a specialty, and yet the responsibility for pain treatment rests with all clinicians.

### **Barriers to Treatment**

Historically, there have been many barriers to effective pain treatment. These stem from patient issues, provider issues, and systems problems. Patient barriers include fear of addiction; a belief, in some, that pain is to be expected and borne in silence; and a belief, in others, that alcohol is an acceptable treatment either alone, or in addition to analgesic medications. Evidence also suggests that seeking disability status presents barriers to recovery and effective treatment.<sup>10</sup>

Provider barriers have stemmed from not seeing pain treatment as a priority; lack of understanding of how to assess and treat pain patients; fears of addiction; fears of respiratory depression; fear of regulatory scrutiny; and fears concerning the use of opioids. A significant provider barrier to CP treatment is the misconception about patients' motives or legitimacy. Unlike some chronic diseases, where treatment effectiveness can be measured by objective tests, pain control depends on patients' self-reports. Feeling vulnerable relying upon self-reports because of possible deception, providers often become suspicious of patients for illogical reasons. For instance, diabetic patients are expected to take self-responsibility in knowing about their medications and blood sugar levels, but when patients with CP show knowledge and expertise about their medicines and pain, providers become upset and suspicious.<sup>11</sup>

System barriers include not holding providers accountable for pain control; not recognizing the harmful and expensive consequences of untreated pain; and responding too slowly to new and better science in pain treatment.

Pain management is improved when it is founded on science and not on personal opinion or anecdotal reports. But a paradox arises when providers realize that one of the most humbling and challenging aspects of pain treatment is to accept that the sensation of pain is completely subjective, and that the most useful clinical definition of pain is *whatever the patient says it is, whenever the patient says it*.<sup>5</sup> The provider's role is to accept the patient's report and take it seriously.

Since pain can neither be proved nor disproved, all providers are ultimately vulnerable to being fooled by patients who are deceptive. The American Society of Addiction Medicine, in its public policy statement<sup>12</sup> says that the physician who is never duped by such patients may be denying appropriate relief to patients with significant pain. Hence, accepting what patients say about pain will sometimes result in some getting analgesia that do not have pain, but it also insures that those who do have pain will get a serious evaluation and response.

### **Understanding Pain**

The current heuristic understanding of pain is conceptualized as complex, biopsychosocial nociception resulting in individually unique pain experiences.<sup>13,14</sup> Earlier pain practices were based on a reductionist view that "real" pain resulted from

specific organic causes while "functional" pain was psychological in origin and not deserving of pain treatment. Patients with functional pain were often sent to psychiatry, where they felt blamed for their pain. Mayer and Gatchel<sup>15</sup> have shown that radiographic findings are not reliable indicators of low back pain. Most cases of back pain are ill defined and physically unverifiable. Even the correlation between documented disc space narrowing, disc rupture, and disc herniation is less than 50%.<sup>16</sup> Numerous studies by Jensen, Brant-Zawadzki, Obuchowski, et al<sup>17</sup> show that clinical, radiographic, and physiologic findings alone are not good indicators of CP or predictors of the development of CP.

These studies highlight the biopsychosocial perspective of CP, where the variables occur separately while interacting uniquely in every patient. All of the variables must be considered for successful treatment outcomes. The most important advice in the science of pain treatment is that it is more important to know about the patient who has the disease than it is to know about the disease the patient has.

Comprehensive pain assessment and individualized treatment plans are imperative. Without appropriate, early, aggressive diagnosis and treatment, many acute pain patients will develop difficult to treat CP and permanent neuropathic damage. Current research indicates that actual nerve damage results from chronic unrelieved pain.<sup>18</sup> Arnstein<sup>19</sup> reported that if severe pain is allowed to persist for more than 24 hours, neuroplastic changes associated with intractable pain syndromes are evident.

Neuronoplasticity refers to the ability of neurons to alter their structure and function in response to internal and external stimuli, so that new stimulus-response relationships develop. Even though the original injury heals, the nervous system continues to send pain signals from somatic tissue. The central nervous system reacts to the memory of the original injury with a constant signal of ongoing pain. Thus, CP becomes a disease of the nervous system and needs to be treated like any disease. When CP is not successfully treated, patients often become psychologically "stuck" and lose control of their lives to pain. Patients who are "stuck" utilize enormous organizational resources without benefit. Frequently, both providers and patients become deadlocked in a struggle over increasing doses of medications instead of focusing on stabilization, rehabilitation, and functional improvement. Appropriate, early and repeated assessment, treatment, and reassessment, in a collaborative approach, offer the keys to successful treatment.

### **Presentation**

According to studies done by Cleeland, et al,<sup>20</sup> most patients are more afraid of pain than death. Additionally, providers usually underrate patients' pain. Minorities and females and the elderly are even less likely to receive adequate treatment. Multiple misconceptions and fears of addictions plague providers and prevent adequate pain treatment.<sup>5</sup> When patients present for treatment, it is unwise to assume what

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patients want; it is better to ask what they need or want.

If patients with pain present with alcohol problems, ask if they want to get clean and sober. If they do not, the situation presents the opportunity to confront patients with the limitations in treatment that medicine can safely offer. Recommend to patients that they stop drinking, based on your medical assessment,<sup>21</sup> while instituting pain treatment. Once patients realize that pain treatment cannot be done safely with untreated addictions, they are often more motivated to seek intervention and take steps toward rehabilitation. In patients who do not have addictions, 79% believe that they will become addicted to pain medications, and resist adequate pain treatment.<sup>22</sup>

It is important to identify risk factors in patients who are likely to develop disabling CP so that risks can be controlled. Risk factors include obesity, addiction, untreated/unidentified or incompletely treated orthopedic problems, uncontrolled chronic disease, occult psychological issues, poor social situations, physical/emotional abuse, lack of preventative health care services, and acute pain that has been undertreated, uncontrolled, and protracted. All risks need to be assessed while understanding that some people develop disabling CP who have no identifiable risk factors.

### Pain Assessment

The most important caveat of pain treatment is that if pain is not assessed early and properly, it cannot be treated properly. During the assessment, the provider should aim for understanding whether the pain is primarily idiopathic, bone, cancer, nociceptive, neuropathic, or of mixed etiology. Guidelines for treatment can be obtained free, from the Agency for Healthcare Research and Quality (AHRQ) in searchable format on the Web at [www.ahrq.gov](http://www.ahrq.gov).

Nociceptive pain is caused by tissue injury. It is short-lived and easily treated in most cases. In contrast, neuropathic pain is caused by injury to nerves that may be distant from the actual site of pain, and it is difficult to treat. In the author's experience, neuropathic pain is common in IHS patients. Neuropathy ensues from constant electrical excitation of neurons and depletion of the action potential. Neuropathic pain is often described by patients as burning, tingling, radiating, sharp, stabbing, shooting, lancinating, electrical, or numbing. Neuropathic pain frequently occurs in situations such as diabetic neuropathy, post mastectomy, postherpetic neuralgia, orthopedic radiculopathy, and the phantom limb pain of amputation.

Although the type of pain can often be identified, most patients do not have one type of pain alone. Usually there are multiple levels/types of pain. CP patients usually have some type of constant background pain that is overlain with intermittent and episodic pains with different characteristics and etiologies. Commonly, CP patients develop muscle spasms when they develop antalgic postures and gaits as a result of pain or efforts to avoid pain. Overlaying pain syndromes often confuse the examination and complicate treatment.

The acronym CHLORIDES is a simple and elegant

mnemonic for the comprehensive assessment of the type of pain and the dynamics underlying it. C = character, L = location, O = onset, R = radiation, I = intensity, D = duration, E = eases, S = sleep/suffering. *Character* will help to determine if the pain is mostly nociceptive or neuropathic in nature; i.e., throbbing versus tingling/radiating. *Location* of the pain will help to determine if it is symptomatic of disease, organ damage, infection, or impending damage. *Onset* will help discriminate acute from chronic conditions and remind the provider to check for cycles or patterns. *Radiation* is a classic characteristic of neuropathic pain. It is also common in visceral organ pain. Gall bladder disease often causes chronic, recurrent pain that radiates through the midsection to the right scapula. Pancreatitis, liver cancer, and hepatitis can also cause chronic visceral pain that radiates to the right shoulder.

*Intensity* is the patient's perception of pain severity. Many hospitals use the 0 - 10 scale for adolescents and adults, where 1 is the least and 10 is the worst possible pain. In all patients, it is important to set parameters when assessing intensity so that patients do not consistently report pain at a level of 10 when it is not. Parameters can be established best through giving examples and guidelines for accurate answers: "If 1 is the least pain you could feel and 10 is the very worst pain any person could ever feel, for any reason, tell me where your pain level is right now."

*Duration* is useful in determining the amount of pain a person may be experiencing and the likelihood of depression. Does the patient ever get any relief? When was the last time? Pain durations of more than six months almost always result in depression, emotional despair, preoccupation with the pain, and diminished coping skills.

Treatments, actions, or medications that *ease* or affect pain need to be assessed and listed to help decide which should be used and which need to be stopped. Sometimes patients have been tried on medications such as gabapentin, but they were never titrated up to therapeutic dose ranges (2700 mg). At other times, patients were not on the medications long enough to make fair judgments about efficacy (4-6 wks). Sometimes, medications were discontinued because of side effects without the opportunity for tolerance to develop or without appropriate intervention. Occasionally, physical therapy treatment failed because the treatment was begun before reasonable pain control was established.

Sleep evaluation is crucial in pain assessment. Patients in pain do not sleep well or restfully. Patients who are unable to sleep lose their psychological energy for coping with pain, healing is impaired, and complications become more severe and difficult to manage.

Remember that patients with addictive disorders in remission will be at much higher risk to relapse.

Patients need to be assessed for coping strategies. Most patients improve their success in dealing with pain when they identify and develop coping strategies. It is helpful to patients to summarize the evaluation of their condition by cataloging

their strengths, weaknesses, needs, and coping skills. Patients benefit from being reminded of their self-efficacy and personal strengths while having their effective behaviors recognized and employed in the treatment plan.

### History

The previous treatment history needs to be elaborated and assessed. If the pain has been undertreated, it needs effective treatment; if the cause had not been established, this needs continuing investigation. Patients with substance abuse disorders, including, alcohol/drug abuse, need treatment for addictions at the inception of treatment. Many patients commonly believe that it is acceptable to treat pain with alcohol. Some patients deny knowing that beer is alcohol and that it can be harmful and cause addiction, or cause complications with pain medicines.

### Physical Examination

An examination for diagnosing and treating CP requires at least 45 minutes and cannot be effectively done in a 10- or 20-minute time frame. When a patient is first encountered with a complaint of CP, it is wise to either refer the patient to a pain specialist for the initial evaluation or schedule ample time for the exam to be completed. Pain control treatment and medication that are appropriate for the level of pain the patient is experiencing should be given at the time of the first encounter, especially when pain is moderate to severe. This will require a brief, initial assessment (see CHLORIDES, above). In order to have a good chance for future pain control, aim first to break the pain cycle and capture the pain with an aggressive approach. Intramuscular ketorolac (Toradol) 30 mg, for NSAID-tolerant patients, is often a good capture medication. A good strategy is to allow patients to rest in the clinic for a period of 30-45 minutes, post medication. This strategy allows evaluation of efficacy and response and improves the patient's ability to productively participate in the evaluation without the distraction of uncontrolled pain. Early, aggressive treatment also affirms to patients that their complaint has been taken seriously, while opening the door to improved communication.

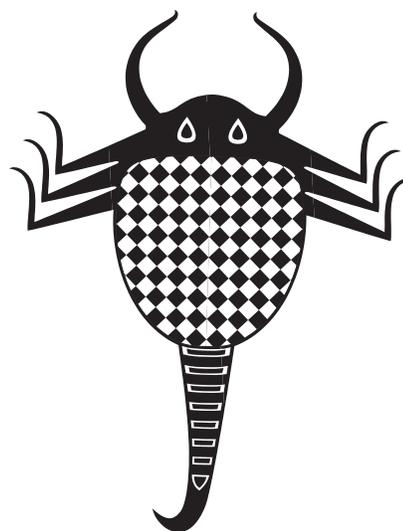
Simple observation in evaluating CP patients should not be overlooked. Observe for antalgic gait or posture, ease of ambulation, ease of verbalization, affect, speech patterns, eye contact, demeanor, hostility, sobriety, and abnormal vital signs. Good observations help provide good clues to the degree of pain, location of pain, and presence of depression as a complicating factor. Patients who present under the influence of alcohol, or out of emotional control, should be referred to the emergency department and should not be seen in a clinic setting until sober and in control.

Patients with complaints of low back pain or leg pain should have the wear pattern of the shoe soles evaluated. Often, this is a clue to leg length or skeletal discrepancies (congenital or surgical) that can lead to CP, especially when coupled with age, obesity, or diabetes. X-rays for leg length discrepancies

can be obtained. Once established, these problems are sometimes easily treated with podiatric interventions and orthotics that promote adjustment for the skeletal/structural abnormalities.

Palpation for focal pain, trigger points, crepitus in joints, arthritic nodules, and increased skin temperature are useful. Impaired mobility, strength, and range of motion (ROM) should be documented. Patients presenting with headaches, upper back pain, neck pain, and/or scapular pain need to be examined for temporomandibular joint disorder (TMD). The TMD pain syndrome is a common problem and should not be treated with long-term pain medications in lieu of good dental care, tooth replacement, or orthodontic intervention. Many patients lack TMD support because of tooth loss, asymmetrical tooth-surface contact, and/or bruxism.

TMD evaluation can easily be done by placing the index fingers in the external otic canal, behind the joint, while exerting anterior pressure. Have the patient open and close the mandible. Patients with TMD complain of pain in the joint with the maneuver. Many have tenderness in the masseter and trapezius muscles. These patients may need tooth replacement, dietary alteration, oral exercises specific for TMD syndrome, a nocturnal bite block (a mandibular splint that properly seats the mandibular occlusion with the maxilla), or investigation into possible anxiety-provoked bruxism. Many female patients present with referred TMD pain that is aggravated by carrying heavy shoulder bags.



Other patients with occult psychological issues carry emotional problems as burdens on their shoulders. They frequently present with the same trigger point tenderness and spasm shown by persons carrying actual physical burdens. These are the patients who are “translating” (somatizing) their psychological issues into physical pain. This is especially true of persons with post-traumatic stress disorders or histories of childhood physical or sexual abuse. There is a strong, empirically demonstrated relationship between childhood physical and sexual abuse and CP.<sup>7</sup> Most of these patients have developed automatic fight/flight responses to stress and are completely unaware that they are tightening skeletal muscles, unconsciously, when under stress. Most of these patients are depressed, and many somatize their suffering into physical complaints that are somehow more acceptable than the outright symptoms of depression.

Most CP patients have multiple pathologies and several levels of pain that sometimes are of different etiologies and characteristics. It is common to find undertreated pain patients with multiple secondary tender trigger points and muscle spasms. With complex pain presentations, treatment becomes more of an art and less of a science.

### Psychological Assessment

CP patients need psychological assessment at the time of presentation. The family practice provider can conduct such assessments. Over 90% of patients with pain longer than three months are depressed.<sup>14</sup> Fifty percent of patients have thought about suicide. Ask patients if they believe they might take action on their thoughts, while reassuring them that suicidal thoughts are common and not a sign that they are “crazy.” Providers should tell patients that suicidal thinking is a symptom of depression and that it can and should be treated.

Make note about what the patient says and what they identify as preventing them from suicidal actions. Ask patients to list the reasons they have for living. Ask family members, or patients themselves, to remove guns or weapons from the home. Reassure them that help is available if the problem worsens or if they are afraid. It is risky to simply refer patients to mental health and leave assessment of suicide risk to other professionals. In many IHS facilities, it may be many weeks before patients are able to gain access to mental health services. In these situations, active listening, availability, frequent inquiry about suicide, initiation of aggressive treatment for pain and depression, and a caring attitude will improve outcomes and reduce risks. If patients admit to current suicidal plans, and cannot be safely discharged, they need emergent psychiatric assessment.

### Functional Assessment

In order to have measures of treatment efficacy, the most important assessment is the functional assessment. The overall goal for treating CP patients is not to cure pain but to improve functional ability. When patients restore function, they are able to reclaim control and move on in spite of pain. This is a sig-

nificant milestone, especially in those cases where the pain can never be completely controlled and patients will need to learn to accept pain in order to move on with life. Most patients need some time to move into the psychological state of acceptance. Simply telling patients they will have to live with pain is not helpful. Instead, acceptance is facilitated when the provider can help the patient to focus on functional rehabilitation. It is useful to characterize the provider’s role in working with these patients as that of a “coach” who can assist them in “opening a door” so that they will be able to attain the strength and endurance to reclaim their lives.

It is easy to measure improvements in functional ability, for example, by comparing how far the patient can walk at each visit, whether or not they use assistive devices. When the kinds of activities the patient can no longer do, because of pain, are documented at the inception of treatment (such as stooping, bending, lifting, reaching, climbing, carrying, pushing, pulling, sitting, or standing), functional advances are much easier to assess. The best functional assessments are probably those done by physical therapists (PT). Early PT involvement improves outcomes, accuracy in diagnosis, and patient rehabilitation. PT evaluations and recommendations are especially useful in complicated cases of CP with functional impairment.



## Goal Setting

Goals of treatment need to be established collaboratively with the patient. Give the patient choices wherever possible, from the outset. Have the patient determine the unique, individual pain score/level that would give him or her the ability to function. Most patients will pick an intensity level between 3 - 6/10 for their functional goal. If the cause of the pain has not been identified, this should be an ongoing goal, to the extent possible. It is usually easier for patients to accept a known cause over an unknown cause. Most patients become less able to respond to treatment interventions if told, "There is nothing wrong." A better reply is simply telling patients, "We have not yet been able to find the cause of the pain but we will continue to look while leaving no stone unturned."

The patient and provider must become partners in the art of making good treatment decisions. In the treatment of malignant pain, quality of life becomes the salient goal. In non-malignant pain, functional improvement takes priority. The patient needs to decide which functional milestone he/she needs to set for the first goal. In the case of one of our CP patients, the patient had a 15-year history of multiple sclerosis with chronic, degenerative disc disease, alcohol abuse, and severe, disabling back pain. The patient's goal was to be able to do something, "like I used to do." He considered his treatment a success when he was able to put up his Christmas decorations for the first time in 15 years. The patient did not relapse and has since had successful spinal surgery. His pain is still not gone but his functional ability has increased dramatically, and he has resumed control of his life.

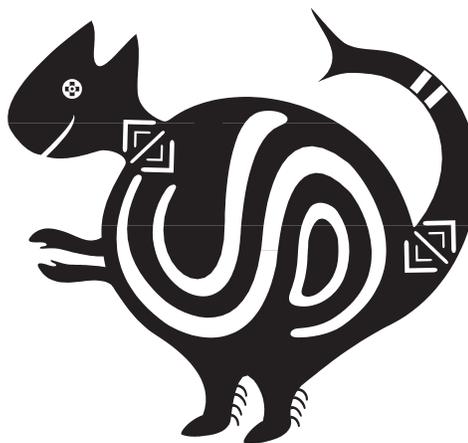
Patients should identify both short-term and long-term goals. Have them vividly describe what it is they want to be doing that they cannot do now. Some patients are completely unrealistic. The more unrealistic the goals, the more likely the patient is to be indulging in immature, wishful thinking that is not grounded in reality. Point out to patients that unrealistic goals result in a loss of psychological energy and lead them to being "stuck." Most patients do not realize that they are setting themselves up for failure. These patients are likely to benefit from concurrent psychotherapy or pain group therapy.

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Part 2 of this article, focusing on management of chronic pain, will appear in a subsequent issue of The Provider.



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# How Do We Screen for and Diagnose Dementia in AI/AN Elders?

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The mental status examination is an essential part of geriatric assessment, key to providing appropriate care for our elderly patients. The Mini-Mental Status Exam (MMSE, also referred to as the Folstein<sup>1</sup>) is often taught as a way to objectively and reproducibly assess and follow a person's cognitive function. Like most primary care clinicians, I rarely use it. As a screening test it is cumbersome and uncomfortable. Although commonly used to establish a diagnosis of dementia, it was not designed for this purpose and does not have the required accuracy.<sup>2</sup>

There are really two issues of concern: how do we screen for cognitive impairment and how do we diagnose dementia. These are critical issues; there is continuing evidence that as clinicians, we often do not recognize dementia in our elderly patients.<sup>3</sup>

The mechanics of administering the MMSE often seem disrespectful to the elders we see. The random and seemingly trivial nature of the questions, usually asked by a person younger than the patient, contributes to that perception. While we do need to understand the cognitive capacity of the older patient, we most definitely want to determine this in the most respectful manner possible.

The literature on the MMSE is very clear in demonstrating that the test is literacy and culture dependent.<sup>4,5</sup> Attempts have been made to adjust for educational level, but these have not been tested in American Indian and Alaska Native (AI/AN) populations. In my experience with the MMSE, I find that scores results suggest a diagnosis of dementia in many elders who are not impaired, and this perception is supported in the literature.<sup>2</sup>

Several years ago a student and I tried to modify the MMSE by substituting more culturally relevant questions for those asked in the original test. For example, rather than asking the elder to count serial sevens to assess calculation ability, we asked that they count and calculate change. The form seemed more sensible, but the discomfort with "testing" the elder was the same. Moreover, we lost the ability to score the exam when we modified it.

I will suggest below a reasonable clinical approach to screening and diagnosis of dementia in AI/AN elders. While not formally tested, this approach does have support in the literature.

In all elder patients I periodically ask about functional status. We know that in elders who are showing a decline in function there is a high rate of dementia.<sup>6</sup> Furthermore, function

has meaning for elders and their families. A decline in function suggests to them as well as to us the need to investigate further.

In every visit I try to assess cognition within the clinical interaction. We can obtain a great deal of information within the frame of normal conversation if we are attentive. We can usually assess, at least in a limited way, attention, speech fluency, memory, and executive function (planning) within the course of a conversation. We have all been fooled, however, by the individual with good social skills who successfully masks significant deficits within the brief clinic visit. For that reason, when assessing an elder in a more comprehensive way (at the yearly comprehensive elder exam, for example), I also do an objective screen. In addition to the conversation-based assessment, I also assess registration and short-term memory directly, by asking the elder to repeat and remember three items in translation. For this I use words that have "old" meanings in the native language (e.g., horse, tree, moon). I also use the clock-drawing task, unscored, as a screening test of visuospatial function, executive function, and attention.<sup>7</sup>

If an elder demonstrates evidence of possible dementia or cognitive impairment on the screen, either with functional impairment unexplained by other conditions or with errors on the three-item recall and/or the clock-drawing task, they need a more detailed cognitive examination.

In the detailed cognitive exam, I again try to assess cognition in a mix of conversation and direct questioning. I can usually assess attention, judgment, speech fluency, long-term memory, and executive function (planning) in conversation. I assess registration and short-term memory directly, with the three-item recall, and indirectly, by asking about medications, recent meals, family members, and other items for which I have external validation of the answer. I often ask for the months forward and backward (i.e., January-December and then December-January) as a way to evaluate attention and as a surrogate for calculation. I sometimes ask an elder to count a handful of change. Orientation may be assessed in conversation, but I am not shy about asking the elder where he or she is, what day it is, who I am, or who he or she is with. The less clear I am about how clear the elder is, the more questions I ask. The MMSE has been helpful to me is as a mental template or outline of the areas of cognition I should assess.

I document my findings in such a way that others can understand how I've arrived at my clinical conclusion (e.g., "Mr. Smith has scanty recall of his work history, repeatedly referring to only a single recent experience, suggesting long term memory deficit with attempt to compensate."). I am also willing to be tentative when there is doubt about the reliability of my findings. Dementia is generally a progressive process, so we eval-

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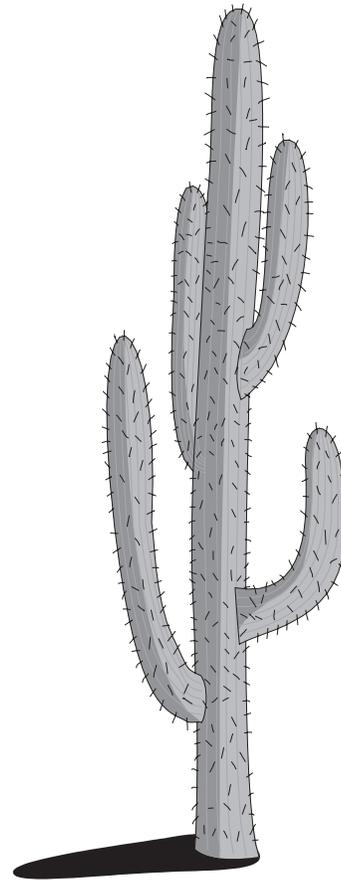
uate repeatedly over time. Obviously, history provided by family can be a key element in this evaluation.

It is also worth pointing out that the diagnosis of dementia requires both cognitive deficits and impact of these deficits on function.<sup>8</sup> Not uncommonly we are left with the impression of cognitive impairment without a clear diagnosis of dementia. This can be classified as mild cognitive impairment (MCI), a clinical condition that, although well recognized, does not have standardized diagnostic criteria.<sup>9</sup> Mild cognitive impairment can be coded as “310.01, Cognitive Impairment, NOS.”<sup>10</sup>

The chapter on mental status examination in the American Psychiatric Press *Textbook of Geriatric Neuropsychiatry*, 2<sup>nd</sup> Edition, referenced below, has an excellent discussion of the mental status examination and is very readable as well.<sup>11</sup>

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## Memory Disorders in Primary Care

*This is the second in an intermittent series of clinical pearls from clinicians with expertise in geriatric care.*

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There is a paucity of data on the prevalence of memory disorders among Native Americans. Furthermore, the diagnosis of cognitive impairment can be confounded by a number of cultural factors. Commonly used screening tests, such as the Mini Mental Status exam, have limited utility in populations whose first language is not English and in patients who may lack more formal education. Nonetheless, recognizing the presence of a potentially devastating memory disorder among our patients is extremely important. Our elders should be screened for memory problems as a part of their comprehensive annual elder exam.

Early recognition of a memory problem can be challenging. Alzheimer's disease, still felt to be the most prevalent of the dementias, can have a very subtle onset. One may identify early temporo-parietal lobe dysfunction, heralded by prominent short-term memory impairment, word-finding difficulties, reduced category fluency, or visuospatial problems. A common quick test of category fluency involves asking a person to name, for example, as many fruits and vegetables or animals as he or she can within a timed minute. Theoretically, inability to name at least 25 items would prompt further testing. Visuospatial problems can manifest by a person getting lost or disoriented in previously familiar territory. Of note, a person with Alzheimer's disease initially experiences less impairment of social skills and judgment so, early on, may be able to hide such deficits well.

In order to officially meet the criteria for Alzheimer's disease, one must exhibit deficits in multiple cognitive domains. This would include memory impairment PLUS one or more of the following: aphasia, apraxia, agnosia (failure to recognize or identify objects despite intact sensory function), and/or a decline in executive function (the ability to plan, organize, sequence, or abstract). Moreover, these deficits must represent a decline from baseline, must interfere with function, and must not be caused by another medical or psychiatric condition. Testing for such deficits is possible cross-culturally with the use of good history taking, brief physical examination maneuvers, and the use of trained translators whenever the patient does not speak English.

When working up a memory disorder, there are a number

of red flags to look for that may suggest a diagnosis other than Alzheimer's disease. The prevalence of vascular dementias is not precisely known and has been estimated to be responsible for from 10 to 40 percent of dementing illnesses. A stepwise, deteriorating course with focal neurologic signs or symptoms can be a tip-off. Emotional lability may be present as can risk factors for cerebrovascular disease. Although neuroimaging in cases of suspected Alzheimer's is controversial, it is indicated in suspected cases of vascular dementia. Magnetic resonance imaging (MRI) of the brain is more sensitive than computed tomography (CT) scan for detection of small infarcts. It is felt that at least 10 to 20 percent of patients will have a mixed multi-infarct dementia and Alzheimer's type dementia. Not surprisingly, vascular dementia added to Alzheimer's dementia results in a worse clinical picture. Thus, the presence of lacunar infarcts or periventricular white matter infarcts would support the control of hypertension, and treatment with antiplatelet agents is recommended for most such patients.

An additional clear indication for neuroimaging would be if a person presented with a progressive cognitive decline along with slowed, restricted movements, particularly of gait, and more so if it is wide-based and ataxic. Urinary incontinence is seen in under half of these patients and a CT of the brain should be obtained to rule out normal pressure hydrocephalus. Finally, it is very appropriate to obtain a CT scan for any cognitive changes with a more acute onset, in contrast to the expected gradual development over years seen in Alzheimer's disease.

Marked new cognitive changes of several weeks' or months' duration would deserve further investigation, including neuroimaging. One concern would be to rule out a subdural hematoma. Due to brain atrophy as one ages, head trauma in the elderly can cause a subdural hematoma from shearing of subdural vessels, causing mental status changes, including cognitive deficits or personality changes.

Early extrapyramidal signs such as limb tremor, increased tone in the trunk or extremities, or gait impairment could indicate a number of disorders that may include Parkinson's disease, progressive supranuclear palsy (especially with prominent eye findings), striatonigral degeneration, spinocerebellar degeneration, or other system atrophies. Dementia with Lewy bodies can present with Parkinsonism (although there may only be mild rigidity). These patients have prominent psychi-

atric symptoms including delusions and hallucinations. Lewy body disease is also marked by an initial fluctuating course and an exquisite sensitivity to neuroleptics. Red flags such as the above, of course, should be sought out during one's initial investigation.

A review of the medication list, including over-the-counter medications or herbal treatments, is imperative. Drug-drug, drug-disease and disease-disease interactions can be important to exclude. Psychotropics, anticholinergics, antihypertensives, anticonvulsants, certain cardiac medications, and others can be culprits in cognitive impairment. Long term alcohol use should also be explored. Prominent apathy and frontal lobe dysfunction (i.e., disinhibition, personality changes) can be suggestive. Symptoms may partially remit if abstinence can be maintained.

Depression is another very important part of the differential diagnosis of memory impairment. Ten to 15 percent of depressed patients exhibit intellectual, memory, and behavior changes indistinguishable from dementia. A person may revert to normal with antidepressant therapy. Of note is the fact that patients whose depression resulted in cognitive impairment do have a higher prevalence of true dementing illnesses five years later.

Basic laboratory testing that can be done includes a complete blood cell count, electrolyte panel, metabolic panel (bicarbonate and renal function), thyroid function test, vitamin B<sub>12</sub> and folate levels, and possibly serologic testing for syphilis and human immunodeficiency virus (HIV) antibody testing — although the last two are widely debated.

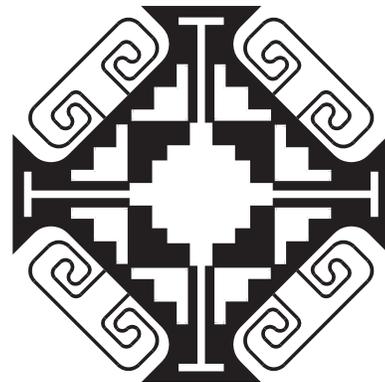
The goals of early recognition are to detect and treat the reversible causes enumerated above and to maintain cognition by attempting to slow disease progression and treat comorbidities. As mentioned earlier, small vessel disease and other types of dementia are felt to be additive; therefore, good blood pressure control can potentially delay progression of cognitive impairment.

If the person is believed to have Alzheimer's type dementia, a trial with an acetylcholinesterase inhibitor is warranted. Questions remain about the use of antioxidants such as vitamin E or ginkgo biloba. The studied dose of vitamin E is 2000 IU a day; however, concerns about hypercoaguability exist when using supraphysiologic doses. The role of nonsteroidal antiinflammatory drugs (NSAIDs) and HMG-CoA reductase inhibitors ("statins") as possibly playing a protective role in the development of dementia remains to be clarified. Certainly, treatment of hypertension, atrial fibrillation, and other stroke risk factors is prudent.

A team approach, along with patient and family education, is helpful to try to maximize independence and safety. Attention to other geriatric issues is also crucial, such as addressing vision, hearing impairment, falls, osteoporosis, foot care, nutrition, depression, finances, elder abuse, advance directives and so on. At later stages of the disease, other concerns arise and include safety, driving, wandering, sleep disturbance, agitation and depression. Not to be forgotten is the significant

stress placed on caregivers and this should be explored without fail. Caregiver exhaustion leading to ineffective caregiving styles and symptoms of major depression in as many as half of caregivers is very significant and mandates our attention.

Nationwide, the prevalence of Alzheimer's disease is between 6 and 8 percent for those age 65 and older. The prevalence doubles roughly every five years, and almost one third of the population over the age of 85 has Alzheimer's. Notably, this statistic does not even include other forms of dementia. The average life span after onset of symptoms is 8 to 10 years. Although we cannot say for sure what the prevalence of dementia is in our American Indian and Alaska Native population, it certainly is a significant problem, and will become an even more pressing issue as life expectancy improves and the population ages. Screening for cognitive impairment in the primary care setting is essential. We should strive for early recognition and thorough evaluation, as described above, in order to try to intervene and modify the disease progression. Attention to issues of quality of life and support for caregivers are also important goals as we seek to promote the health and well-being of our patients.



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# Introducing PCC+

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## Introduction

This is the second article on PCC+ and includes information on specific objectives as well as metrics for this application. The next article (Part III) will provide actual outcome measurements from sites that have been using PCC+ for a period of time. We will also describe the why and how of business process changes, as well as how the introduction of PCC+ can lead to improved revenue, decreased cost, and improved quality of patient care. The fourth and final article will discuss future considerations and new versions of PCC+.

## PCC+ Overview

As previously described, PCC+ is a modification as well as an enhancement of the Patient Care Component (PCC) of the Resource and Patient Management System (RPMS) that provides a seamless, real time connection for each patient visit between the RPMS database, Microsoft Word, and PCC+; it also integrates the clinical and billing functions into one encounter form. This customized two-page encounter form, or template, typically printed front and back, links via a mail merge capability, the following data elements:

- ICD-9 diagnoses by site, by clinic, by provider, and by patient demographic (infants, pediatric, and male and female teens, adults, and elders).
- Orderables such as CPT, treatments, procedures, supplies, laboratory tests, x-rays, immunizations, etc.
- Real time updates of demographics, insurance information, medications, and health summary reference reminders.

Data are automatically updated at the point-of-care during the registration process into RPMS, printed onto a PCC+ form, and presented to the nurse and provider prior to the patient care encounter. In addition to the above information, PCC+ provides an easy-to-use area for the provider to review and/or update the problem list. Simply by adding an “A” the problem is retained as active; an “I” indicates inactive. Besides this information, if the clinic is connected with Point of Sale Pharmacy, all the active and chronic medications, by names, dosage, and refill amounts will be printed on the PCC+. Both the pharmacy staff and providers have reacted positively to this information on the PCC+, not only for legibility advantages, but also for improved communication between the provider and pharmacist.

## Objectives

The objectives of PCC+ are as follows:

- To improve the quality of patient care and population health through an integrated health summary function, diagrams, and built-in clinical reminders and check blocks for providers.
- Enhance provider’s ability to see the ‘whole patient’ by incorporating previous results, active problem lists, and active medications onto one integrated encounter form.
- Improve data entry quality and productivity by standardizing the format and location of data, improving the provider’s legibility and descriptions, and embedded CPT and ICD-9 coding for commonly used visits, procedures, lab tests, and x-rays.

These combined objectives enable clinics to improve charge capture and revenue, clinical data capture and outcomes, form compliance and usability by providers and nurses, and compliance with GPRA, JCAHO, and other standards and requirements through detailed documentation and metric measurements; it also will reduce errors with the data entry/coding staff in interpreting provider’s care and orders. Overall, PCC+ streamlines the documentation process and places increased emphasis on data quality.

## PCC+ Forms

Attached is a PCC+ model form that is available from the PCC+ website ([http://www.ihs.gov/misc/links\\_gateway/download.cfm?doc\\_id=1292&app\\_dir\\_id=4&doc\\_file=Women\\_template.pdf](http://www.ihs.gov/misc/links_gateway/download.cfm?doc_id=1292&app_dir_id=4&doc_file=Women_template.pdf)). While the unmerged form contains no specific patient information, the sample merged form that accompanies this article on pages 13-14 demonstrates the features of PCC+ by adding some specific patient information. Several such templates are available on the PCC+ website.

## Measuring PCC+ Outcomes

The ITSC PCC+ team designed specific outcome measurements for both the business and clinical process to determine if PCC+ positively or negatively impacted the clinical care and business operations of the clinic. Metrics are based on baseline data obtained *prior* to the implementation of PCC+ and then remeasured and compared to the original baseline figures several months after implementation. The measurement process through RPMS reports, QMAN reports, or manual audits can determine if PCC+ along with workflow changes has improved documentation, coding, patient care outcomes, revenue, GPRA compliance, or any other relevant factors.

Some of the business metrics measure the following “before” and “after” data or statistics:

- Backlogs in data entry or billing
- Coding accuracy
- Compliance in form completion by provider
- Reduction of error reports
- Revenue changes
- Decrease in lost superbills

The clinical metrics comply with internal and national clinical quality guidelines and standards such as GPRA and JCAHO, and may or may not have been indicated or collected prior to the implementation of PCC+. Several of the clinical metrics are:

- Data quality of the health summary, such as what should or should not be included in the health summary reminder, updating the problem list, deleting irrelevant notes, listing abnormal results, moving medications to the pharmacy section and making the health summary a more usable reference guide to the provider
- Form usability and provider satisfaction with it
- Routine foot checks and education of diabetics
- Child and adult immunizations

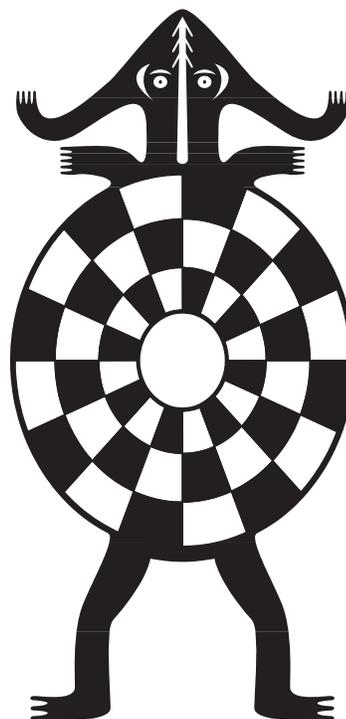
PCC+ is an excellent resource to document patient information, to gather specific data elements, and to use as a quality assurance tool to support JCAHO, NCAAA, and GPRA requirements. Measurements and standards are required to support quality clinical care to the AI/AN population and to assure preventive care such as immunizations, vaccinations, screenings, and examinations are rendered in a routine, scheduled manner. Once documented, these data will enable IHS, IHS Area Offices, and HHS as a whole to measure the outcomes and results of the patient care provided. Typical questions would be: have the diabetic complications declined through earlier detection, preventive care, and clinical interventions? Has the access to dental care and sealants reduced tooth decay for the children? Will preventive screenings using pap smears and mammograms reduce the incidence of cancer? Has earlier detection through preventive examinations and diagnostic tests reduced the cost of chronic interventions?

The reminders built into the PCC+ form for providers can improve performance and documentation of diagnostic and screening tests and results. Final tallied statistics will not only determine if the provider and facility comply with the requirements set forth by GPRA or JCAHO, but also will provide a data tool to measure the success or failure rate of the services rendered to the Indian population.

PCC+ is an integrated legal document of the visit, but also a robust data tool that can provide the needed data and results that have in the past not been documented, were poorly documented, or were documented incorrectly, causing skewed outcome results.

## Summary

All information on PCC+ to include metrics and metric calculations are listed on the PCC+ web site at [www.ihs.gov/ciopccplus](http://www.ihs.gov/ciopccplus). For any additional information, please contact [theresa.cullen@mail.ihs.gov](mailto:theresa.cullen@mail.ihs.gov) or [carol.miller@mail.ihs.gov](mailto:carol.miller@mail.ihs.gov).







# Hypertension and Chronic Kidney Disease

*This is the fifth in the series of 12 one-page articles about chronic kidney disease.*

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*Andrew S. Narva, MD; and Theresa A Kuracina, MS, RD, CDE, both of the Indian Health Service Kidney Disease Program, Albuquerque, New Mexico*

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High blood pressure is both a cause and complication of chronic kidney disease (CKD). Uncontrolled high blood pressure can accelerate the loss of glomerular filtration rate (GFR). Routine monitoring of blood pressure is recommended for all patients with CKD. The classification of high blood pressure should be based on the average of two or more readings at each of two or more visits after an initial screening. The following techniques are recommended:

- The patient should refrain from smoking or ingesting caffeine for 30 minutes prior to measurement.
- Seat patient in a chair with back supported, arms bared and supported at heart level.
- The patient should be allowed to rest for five minutes in the chair prior to measurement.
- Use an appropriate size cuff.

## **Treatment of High Blood Pressure**

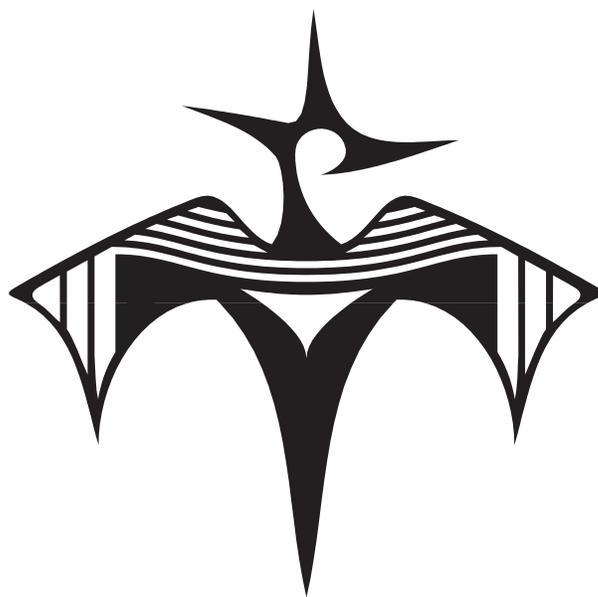
Specific targets for blood pressure control should be discussed with the patient. A goal of 130/85 is recommended for patients without proteinuria (<1 g/day), while the suggested goal for patients with diabetic kidney disease or proteinuria > 1 g/day is 125/75.

Lifestyle modification and drug therapy are the cornerstones for treating high blood pressure. Lifestyle modifications for prevention and treatment of hypertension include:

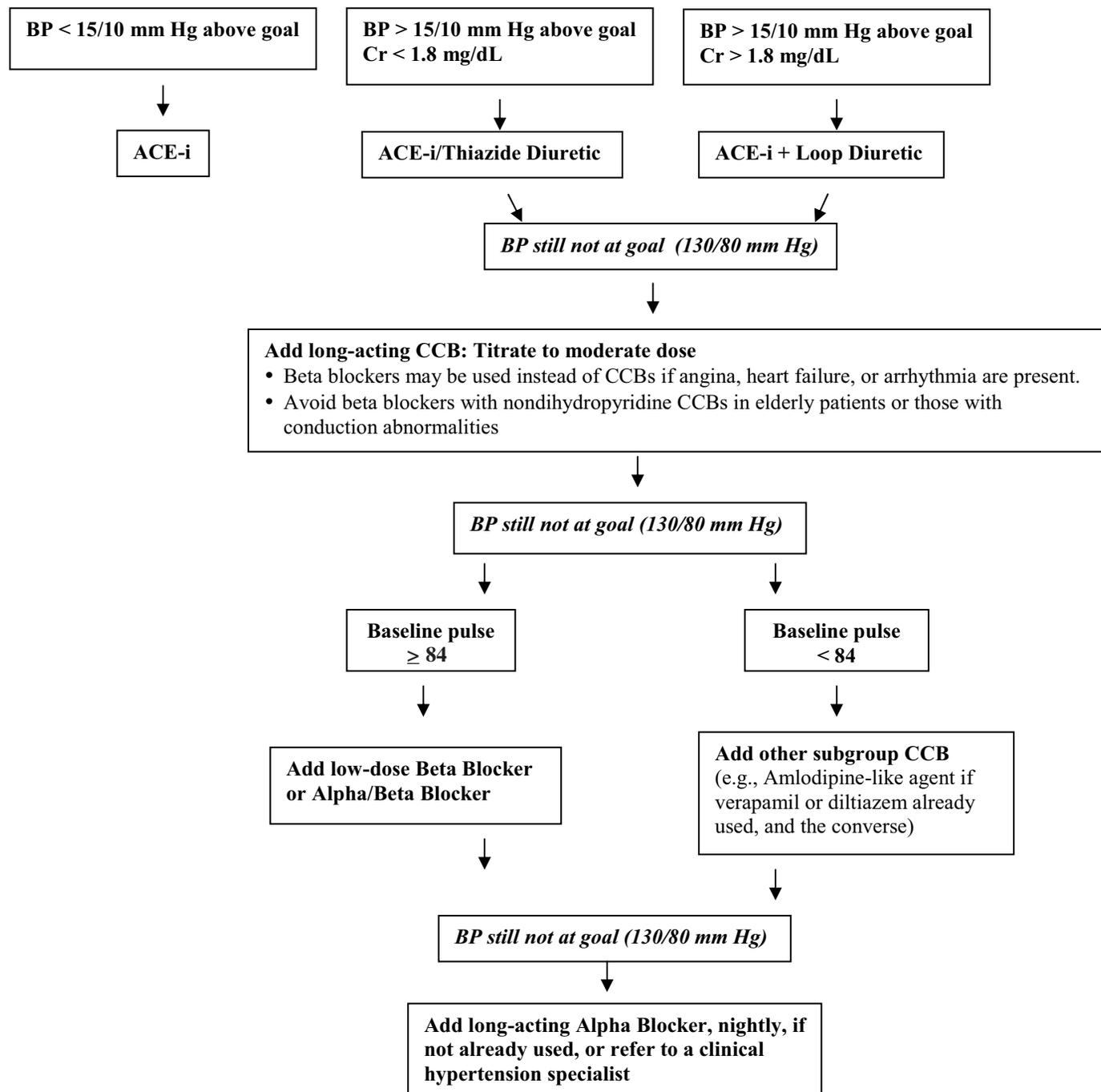
- Weight loss if overweight (BMI > 27).
- Limit alcohol intake to no more than 1 oz ethanol (24 oz beer, 10 oz wine, or 2 oz of 100 proof whiskey) per day, or 0.5 oz ethanol per day (12 oz beer, 5 oz wine, or 1 oz 100 proof whiskey) for women and lighter weight men.
- Increase aerobic physical activity (30 - 45 minutes most days of the week).
- Reduce sodium intake to no more than 100 mmol per day (2.4 g sodium or 6 g NaCl).
- Maintain adequate potassium intake (about 90 mmol per day).
- Maintain adequate intake of dietary calcium and magnesium for general health.
- Stop smoking and eat less saturated fat and cholesterol for overall cardiovascular health.
- DASH diet: 9 servings fruits and vegetables a day, 2 - 3 servings of low fat dairy products a day, and 4 - 5 servings of nuts, seeds, and legumes per week.

Angiotensin-converting enzyme inhibitors (ACE-inhibitors) and angiotensin receptor antagonists (ARBs) have been shown to slow the progression of CKD. These medications lower glomerular capillary blood pressure as well as systemic blood pressure.

In summary, blood pressure control is key to slowing the progression of CKD. Blood pressure goals for CKD differ based on presence or absence of proteinuria. Multiple medications may be needed to control blood pressure. Dietary sodium restriction may augment pharmacologic intervention. On the following page is an evidence-based treatment algorithm recommended by the National Kidney Foundation (*Am J Kidney Dis* 2000;36:646-661).



## Suggested Paradigm For Achieving Blood Pressure Goals in CKD and/or Diabetes



ACE-i = Angiotensin Converting Enzyme Inhibitor  
CCB = Calcium Channel Blocker

- ◆ Counsel all patients with diabetes or CKD on lifestyle modifications
- ◆ Start medications if BP > 130/85 mm Hg
- ◆ Clonidine should NOT be used with beta blockers



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**Circulation:** The PROVIDER (ISSN 1063-4398) is distributed to more than 6,000 health care providers working for the IHS and tribal health programs, to medical schools throughout the country, and to health professionals working with or interested in American Indian and Alaska Native health care. If you would like to receive a copy, send your name, address, professional title, and place of employment to the address listed below.

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