

A Guide to E-prescribing

Chapter FastFACTS

- 1. Although no one disputes the advantages of e-prescription, only 12% of office-based physicians are using it, according to one report.**
- 2. The federal stimulus package notes the importance of medication reconciliation and prevention of adverse drug interactions, which are part of some e-prescription systems.**
- 3. Stand-alone e-prescription systems are cheaper than EHRs and faster to get up and running.**
- 4. Some practices have problems with their systems because of unrealistic expectations.**
- 5. Some pharmacies still don't accept e-prescriptions.**

It wasn't easy being the first practice in his local community to begin e-prescribing, says Arizona's Dr. Adler. When his practice switched from paper five-and-a-half years ago, pharmacies refused to accept his prescriptions because they weren't geared up to handle them, he recalls. His local pharmacies now accept e-prescriptions in part because of CMS's Physician's Quality Reporting Initiative (PQRI) and because e-prescribing is a key component of the government's new meaningful-use requirements for EHRs. However, he notes, physicians who are thinking of making the switch today face additional challenges.

For example, the U.S. Drug Enforcement Administration pro-

Treat today with NAMENDA

Proven efficacy and tolerability



- Improves function, delays onset of behavioral symptoms, and provides benefits in cognition¹⁻³
- Proven safety and tolerability with low risk of gastrointestinal side effects may lead to therapy persistence^{4,5}
- Reduces caregiving time, cost, and caregiver distress^{3,6,7}
- Effective first-line and in combination with an acetylcholinesterase inhibitor^{1,2}

Broad patient access—covered on 98% of Medicare Part D formularies¹

NAMENDA® (memantine HCl) is indicated for the treatment of moderate to severe Alzheimer's disease.

NAMENDA is contraindicated in patients with known hypersensitivity to memantine HCl or any excipients used in the formulation. The most common adverse events reported with NAMENDA vs placebo ($\geq 5\%$ and higher than placebo) were dizziness, confusion, headache, and constipation. In patients with severe renal impairment, the dosage should be reduced.

Namenda 
memantine HCl

Extending memory and function

References: **1.** Reisberg B, Doody R, Stöffler A, Schmitt F, Ferris S, Möbius HJ, for the Memantine Study Group. Memantine in moderate-to-severe Alzheimer's disease. *N Engl J Med.* 2003;348:1333-1341. **2.** Tariot PN, Farlow MR, Grossberg GT, Graham SM, McDonald S, Gergel I, for the Memantine Study Group. Memantine treatment in patients with moderate to severe Alzheimer disease already receiving donepezil: a randomized controlled trial. *JAMA.* 2004;291:317-324. **3.** Cummings JL, Schneider E, Tariot PN, Graham SM, for the Memantine MEM-MD-02 Study Group. Behavioral effects of memantine in Alzheimer disease patients receiving donepezil treatment. *Neurology.* 2006;67:57-63. **4.** Data on file. Forest Laboratories, Inc. **5.** NAMENDA® (memantine HCl) Prescribing Information. Forest Pharmaceuticals, Inc., St Louis, Mo. **6.** Wimo A, Winblad B, Stöffler A, Wirth Y, Möbius HJ. Resource utilisation and cost analysis of memantine in patients with moderate to severe Alzheimer's disease. *Pharmacoeconomics.* 2003;21:327-340. **7.** Winblad B, Poritis N. Memantine in severe dementia: results of the *M-BEST Study (Benefit and efficacy in severely demented patients during treatment with memantine). *Int J Geriatr Psychiatry.* 1999;14:135-146.

 Forest Pharmaceuticals, Inc.

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For more details, please visit www.namenda.com.

Please see brief summary of Prescribing Information on the adjacent page.

62-1014307R R2

03/09

Namenda

memantine HCl



Tablets/Oral Solution
Rx Only

Brief Summary of Prescribing Information.

For complete details, please see full Prescribing Information for Namenda.

INDICATIONS AND USAGE

Namenda (memantine hydrochloride) is indicated for the treatment of moderate to severe dementia of the Alzheimer's type.

CONTRAINDICATIONS

Namenda (memantine hydrochloride) is contraindicated in patients with known hypersensitivity to memantine hydrochloride or to any excipients used in the formulation.

PRECAUTIONS

Information for Patients and Caregivers: Caregivers should be instructed in the recommended administration (twice per day for doses above 5 mg) and dose escalation (minimum interval of one week between dose increases).

Neurological Conditions

Seizures: Namenda has not been systematically evaluated in patients with a seizure disorder. In clinical trials of Namenda, seizures occurred in 0.2% of patients treated with Namenda and 0.5% of patients treated with placebo.

Genitourinary Conditions

Conditions that raise urine pH may decrease the urinary elimination of memantine resulting in increased plasma levels of memantine.

Special Populations

Hepatic Impairment

Namenda undergoes partial hepatic metabolism, with about 48% of administered dose excreted in urine as unchanged drug or as the sum of parent drug and the N-glucuronide conjugate (74%). No dosage adjustment is needed in patients with mild or moderate hepatic impairment. Namenda should be administered with caution to patients with severe hepatic impairment.

Renal Impairment

No dosage adjustment is needed in patients with mild or moderate renal impairment. A dosage reduction is recommended in patients with severe renal impairment (see CLINICAL PHARMACOLOGY and DOSAGE AND ADMINISTRATION in Full Prescribing Information).

Drug-Drug Interactions

N-methyl-D-aspartate (NMDA) antagonists: The combined use of Namenda with other NMDA antagonists (amantadine, ketamine, and dextromethorphan) has not been systematically evaluated and such use should be approached with caution.

Effects of Namenda on substrates of microsomal enzymes: *In vitro* studies conducted with marker substrates of CYP450 enzymes (CYP1A2, -2A6, -2C9, -2D6, -2E1, -3A4) showed minimal inhibition of these enzymes by memantine. In addition, *in vitro* studies indicate that at concentrations exceeding those associated with efficacy, memantine does not induce the cytochrome P450 isoenzymes CYP1A2, CYP2C9, CYP2E1, and CYP3A4/5. No pharmacokinetic interactions with drugs metabolized by these enzymes are expected.

Effects of inhibitors and/or substrates of microsomal enzymes on Namenda: Memantine is predominantly renally eliminated, and drugs that are substrates and/or inhibitors of the CYP450 system are not expected to alter the metabolism of memantine.

Acetylcholinesterase (AChE) inhibitors: Coadministration of Namenda with the AChE inhibitor donepezil HCl did not affect the pharmacokinetics of either compound. In a 24-week controlled clinical study in patients with moderate to severe Alzheimer's disease, the adverse event profile observed with a combination of memantine and donepezil was similar to that of donepezil alone.

Drugs eliminated via renal mechanisms: Because memantine is eliminated in part by tubular secretion, coadministration of drugs that use the same renal cationic system, including hydrochlorothiazide (HCTZ), triamterene (TA), metformin, cimetidine, ranitidine, quinidine, and nicotine, could potentially result in altered plasma levels of both agents. However, coadministration of Namenda and HCTZ/TA did not affect the bioavailability of either memantine or TA, and the bioavailability of HCTZ decreased by 20%. In addition, coadministration of memantine with the antihyperglycemic drug Glucovance® (glyburide and metformin HCl) did not affect the pharmacokinetics of memantine, metformin and glyburide. Furthermore, memantine did not modify the serum glucose lowering effect of Glucovance®.

Drugs that make the urine alkaline: The clearance of memantine was reduced by about 80% under alkaline urine conditions at pH 8. Therefore, alterations of urine pH towards the alkaline condition may lead to an accumulation of the drug with a possible increase in adverse effects. Urine pH is altered by diet, drugs (e.g. carbonic anhydrase inhibitors, sodium bicarbonate) and clinical state of the patient (e.g. renal tubular acidosis or severe infections of the urinary tract). Hence, memantine should be used with caution under these conditions.

Carcinogenesis, Mutagenesis and Impairment of Fertility

There was no evidence of carcinogenicity in a 113-week oral study in mice at doses up to 40 mg/kg/day (10 times the maximum recommended human dose [MRHD] on a mg/m² basis). There was also no evidence of

carcinogenicity in rats orally dosed at up to 40 mg/kg/day for 71 weeks followed by 20 mg/kg/day (20 and 10 times the MRHD on a mg/m² basis, respectively) through 128 weeks.

Memantine produced no evidence of genotoxic potential when evaluated in the *in vitro* S. typhimurium or E. coli reverse mutation assay, an *in vitro* chromosomal aberration test in human lymphocytes, an *in vivo* cytogenetics assay for chromosome damage in rats, and the *in vivo* mouse micronucleus assay. The results were equivocal in an *in vitro* gene mutation assay using Chinese hamster V79 cells.

No impairment of fertility or reproductive performance was seen in rats administered up to 18 mg/kg/day (9 times the MRHD on a mg/m² basis) orally from 14 days prior to mating through gestation and lactation in females, or for 60 days prior to mating in males.

Pregnancy

Pregnancy Category B: Memantine given orally to pregnant rats and pregnant rabbits during the period of organogenesis was not teratogenic up to the highest doses tested (18 mg/kg/day in rats and 30 mg/kg/day in rabbits, which are 9 and 30 times, respectively, the maximum recommended human dose [MRHD] on a mg/m² basis).

Slight maternal toxicity, decreased pup weights and an increased incidence of non-ossified cervical vertebrae were seen at an oral dose of 18 mg/kg/day in a study in which rats were given oral memantine beginning pre-mating and continuing through the postpartum period. Slight maternal toxicity and decreased pup weights were also seen at this dose in a study in which rats were treated from day 15 of gestation through the post-partum period. The no-effect dose for these effects was 6 mg/kg, which is 3 times the MRHD on a mg/m² basis.

There are no adequate and well-controlled studies of memantine in pregnant women. Memantine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers

It is not known whether memantine is excreted in human breast milk. Because many drugs are excreted in human milk, caution should be exercised when memantine is administered to a nursing mother.

Pediatric Use

There are no adequate and well-controlled trials documenting the safety and efficacy of memantine in any illness occurring in children.

ADVERSE REACTIONS

The experience described in this section derives from studies in patients with Alzheimer's disease and vascular dementia.

Adverse Events Leading to Discontinuation: In placebo-controlled trials in which dementia patients received doses of Namenda up to 20 mg/day, the likelihood of discontinuation because of an adverse event was the same in the Namenda group as in the placebo group. No individual adverse event was associated with the discontinuation of treatment in 1% or more of Namenda-treated patients and at a rate greater than placebo.

Adverse Events Reported in Controlled Trials: The reported adverse events in Namenda (memantine hydrochloride) trials reflect experience gained under closely monitored conditions in a highly selected patient population. In actual practice or in other clinical trials, these frequency estimates may not apply, as the conditions of use, reporting behavior and the types of patients treated may differ. Table 1 lists treatment-emergent signs and symptoms that were reported in at least 2% of patients in placebo-controlled dementia trials and for which the rate of occurrence was greater for patients treated with Namenda than for those treated with placebo. No adverse event occurred at a frequency of at least 5% and twice the placebo rate.

Table 1: Adverse Events Reported in Controlled Clinical Trials in at Least 2% of Patients Receiving Namenda and at a Higher Frequency than Placebo-treated Patients.

Body System Adverse Event	Placebo (N = 922) %	Namenda (N = 940) %
Body as a Whole		
Fatigue	1	2
Pain	1	3
Cardiovascular System		
Hypertension	2	4
Central and Peripheral Nervous System		
Dizziness	5	7
Headache	3	6
Gastrointestinal System		
Constipation	3	5
Vomiting	2	3
Musculoskeletal System		
Back pain	2	3
Psychiatric Disorders		
Confusion	5	6
Somnolence	2	3
Hallucination	2	3
Respiratory System		
Coughing	3	4
Dyspnea	1	2

Other adverse events occurring with an incidence of at least 2% in Namenda-treated patients but at a greater or equal rate on placebo were agitation, fall, inflicted injury, urinary incontinence, diarrhea, bronchitis, insomnia, urinary tract infection, influenza-like symptoms, abnormal gait, depression, upper respiratory tract infection, anxiety, peripheral edema, nausea, anorexia, and arthralgia.

The overall profile of adverse events and the incidence rates for individual adverse events in the subpopulation of patients with moderate to severe Alzheimer's disease were not different from the profile and incidence rates described above for the overall dementia population.

Vital Sign Changes: Namenda and placebo groups were compared with respect to (1) mean change from baseline in vital signs (pulse, systolic blood pressure, diastolic blood pressure, and weight) and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. There were no clinically important changes in vital signs in patients treated with Namenda. A comparison of supine and standing vital sign measures for Namenda and placebo in elderly normal subjects indicated that Namenda treatment is not associated with orthostatic changes.

Laboratory Changes: Namenda and placebo groups were compared with respect to (1) mean change from baseline in various serum chemistry, hematology, and urinalysis variables and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. These analyses revealed no clinically important changes in laboratory test parameters associated with Namenda treatment.

ECG Changes: Namenda and placebo groups were compared with respect to (1) mean change from baseline in various ECG parameters and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. These analyses revealed no clinically important changes in ECG parameters associated with Namenda treatment.

Other Adverse Events Observed During Clinical Trials

Namenda has been administered to approximately 1350 patients with dementia, of whom more than 1200 received the maximum recommended dose of 20 mg/day. Patients received Namenda treatment for periods of up to 884 days, with 862 patients receiving at least 24 weeks of treatment and 387 patients receiving 48 weeks or more of treatment.

Treatment emergent signs and symptoms that occurred during 8 controlled clinical trials and 4 open-label trials were recorded as adverse events by the clinical investigators using terminology of their own choosing. To provide an overall estimate of the proportion of individuals having similar types of events, the events were grouped into a smaller number of standardized categories using WHO terminology, and event frequencies were calculated across all studies.

All adverse events occurring in at least two patients are included, except for those already listed in Table 1, WHO terms too general to be informative, minor symptoms or events unlikely to be drug-caused, e.g., because they are common in the study population. Events are classified by body system and listed using the following definitions: frequent adverse events - those occurring in at least 1/100 patients; infrequent adverse events - those occurring in 1/100 to 1/1000 patients. These adverse events are not necessarily related to Namenda treatment and in most cases were observed at a similar frequency in placebo-treated patients in the controlled studies.

Body as a Whole: *Frequent:* syncope. *Infrequent:* hypothermia, allergic reaction.

Cardiovascular System: *Frequent:* cardiac failure. *Infrequent:* angina pectoris, bradycardia, myocardial infarction, thrombophlebitis, atrial fibrillation, hypotension, cardiac arrest, postural hypotension, pulmonary embolism, pulmonary edema.

Central and Peripheral Nervous System: *Frequent:* transient ischemic attack, cerebrovascular accident, vertigo, ataxia, hypokinesia. *Infrequent:* paresthesia, convulsions, extrapyramidal disorder, hypertonia, tremor, aphasia, hypoesthesia, abnormal coordination, hemiplegia, hyperkinesia, involuntary muscle contractions, stupor, cerebral hemorrhage, neuralgia, ptosis, neuropathy.

Gastrointestinal System: *Infrequent:* gastroenteritis, diverticulitis, gastrointestinal hemorrhage, melena, esophageal ulceration.

Hemic and Lymphatic Disorders: *Frequent:* anemia. *Infrequent:* leukopenia.

Metabolic and Nutritional Disorders: *Frequent:* increased alkaline phosphatase, decreased weight. *Infrequent:* dehydration, hyponatremia, aggravated diabetes mellitus.

Psychiatric Disorders: *Frequent:* aggressive reaction. *Infrequent:* delusion, personality disorder, emotional lability, nervousness, sleep disorder, libido increased, psychosis, amnesia, apathy, paranoid reaction, thinking abnormal, crying abnormal, appetite increased, paroniria, delirium, depersonalization, neurosis, suicide attempt.

Respiratory System: *Frequent:* pneumonia. *Infrequent:* apnea, asthma, hemoptysis.

Skin and Appendages: *Frequent:* rash. *Infrequent:* skin ulceration, pruritus, cellulitis, eczema, dermatitis, erythematous rash, alopecia, urticaria.

Special Senses: *Frequent:* cataract, conjunctivitis. *Infrequent:* macula lutea degeneration, decreased visual acuity, decreased hearing, tinnitus, blepharitis, blurred vision, corneal opacity, glaucoma, conjunctival hemorrhage, eye pain, retinal hemorrhage, xerophthalmia, diplopia, abnormal lacrimation, myopia, retinal detachment.

Urinary System: *Frequent:* frequent micturition. *Infrequent:* dysuria, hematuria, urinary retention.

Events Reported Subsequent to the Marketing of Namenda, both US and Ex-US

Although no causal relationship to memantine treatment has been found, the following adverse events have been reported to be temporally associated with memantine treatment and are not described elsewhere in labeling: aspiration pneumonia, asthenia, atrioventricular block, bone fracture, carpal tunnel syndrome, cerebral infarction, chest pain, cholelithiasis, claudication, colitis, deep venous thrombosis, depressed level of consciousness (including loss of consciousness and rare reports of coma), dyskinesia, dysphagia, encephalopathy, gastritis, gastroesophageal reflux, grand mal convulsions, intracranial hemorrhage, hepatitis (including increased ALT and AST and hepatic failure), hyperglycemia, hyperlipidemia, hypoglycemia, ileus, increased INR, impotence, lethargy, malaise, myoclonus, neuroleptic malignant syndrome, acute pancreatitis, Parkinsonism, acute renal failure (including increased creatinine and renal insufficiency), prolonged QT interval, restlessness, sepsis, Stevens-Johnson syndrome, suicidal ideation, sudden death, supraventricular tachycardia, tachycardia, tardive dyskinesia, thrombocytopenia, and hallucinations (both visual and auditory).

ANIMAL TOXICOLOGY

Memantine induced neuronal lesions (vacuolation and necrosis) in the multipolar and pyramidal cells in cortical layers III and IV of the posterior cingulate and retrosplenial neocortices in rats, similar to those which are known to occur in rodents administered other NMDA receptor antagonists. Lesions were seen after a single dose of memantine. In a study in which rats were given daily oral doses of memantine for 14 days, the no-effect dose for neuronal necrosis was 6 times the maximum recommended human dose on a mg/m² basis. The potential for induction of central neuronal vacuolation and necrosis by NMDA receptor antagonists in humans is unknown.

DRUG ABUSE AND DEPENDENCE

Controlled Substance Class: Memantine HCl is not a controlled substance.

Physical and Psychological Dependence: Memantine HCl is a low to moderate affinity uncompetitive NMDA antagonist that did not produce any evidence of drug-seeking behavior or withdrawal symptoms upon discontinuation in 2,504 patients who participated in clinical trials at therapeutic doses. Post marketing data, outside the U.S., respectively collected, has provided no evidence of drug abuse or dependence.

OVERDOSAGE

Signs and symptoms associated with memantine overdose in clinical trials and from worldwide marketing experience include agitation, confusion, ECG changes, loss of consciousness, psychosis, restlessness, slowed movement, somnolence, stupor, unsteady gait, visual hallucinations, vertigo, vomiting, and weakness. The largest known ingestion of memantine worldwide was 2.0 grams in a patient who took memantine in conjunction with unspecified antidiabetic medications. The patient experienced coma, diplopia, and agitation, but subsequently recovered.

Because strategies for the management of overdose are continually evolving, it is advisable to contact a poison control center to determine the latest recommendations for the management of an overdose of any drug.

As in any cases of overdose, general supportive measures should be utilized, and treatment should be symptomatic. Elimination of memantine can be enhanced by acidification of urine.



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Rev. 04/07

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hibits physicians from sending Class 2 controlled substances electronically; and a few states and mail-order pharmacies still insist on faxed, rather than electronic, signatures, says Dr. Adler, who, as medical director of HIT for Arizona Community Physicians, has helped 21 practices implement EHRs. Another potential barrier for a practice without an EHR is making sure that patient demographic information interfaces with your practice management system, he adds. Otherwise, demographic data has to be entered twice for every patient prescription.

Despite these issues, Dr. Adler says the transition away from paper is not only worth the effort, but is fast becoming a necessary part of practicing medicine and improving care. “[E-prescription] will become the standard of care because it’s been shown to be safer, and there’s a strong sense that it increases quality,” he says.

Those sentiments are backed by new government incentives. Therefore, if you’re not already e-prescribing—and the odds are you haven’t jumped in, according to a recent report—perhaps now is the time to start planning. Experts say the combination of those incentives and pending universal product standards should convince you to investigate either a stand-alone system or one that is part of a complete EHR system suitable for your practice. However, it may be prudent to wait for further details about government incentives before making your purchase.

A Changing Landscape

No one disputes the advantages of e-prescribing: the ability to electronically send an accurate and understandable prescription from the point of care. The idea started to gain acceptance in 2003 when e-prescribing was included in the Medicare Modernization Act. Adoption became more widespread in 2006 when the Institute of Medicine highlighted e-prescribing as a critical tool in reducing dangerous medication errors.

Nonetheless, according to a recent report from Surescripts, a national network connecting prescribers with pharmacies, only 12% of office-based physicians are using e-prescription. The report found e-prescription transmissions grew from 29 million to 68 million between 2007 and 2008; yet that represents only 4% of all prescriptions. In addition, a 2008 *New England Jour-*

nal of Medicine article showed that smaller practices are less likely to adopt a system (see “Rates of Adoption of EHRs by Practice Size,” below).

Cost is one factor, especially because most major medical groups urge their members to invest in a complete EHR system that includes e-prescribing even though stand-alone systems can be more reasonably priced. Buying the entire system represents a much higher cost, one that many physicians have been reluctant to make while government standards and incentives are still in flux.

Compatibility issues with the technology also are causing some hesitation. “We know that many physicians aren’t using the e-prescribing functionality, and the problem to date has been the great variation in systems,” says Ms. Torda of the NCQA.

But those problems will resolve once the government’s universal standards for certification come into play. Experts predict the vendor landscape will shift dramatically as a result. Physicians will benefit by being able to buy pieces of EHR systems incrementally—thus less expensively—when all certified products are compatible. “The hope is that it will get a lot simpler to implement EHRs,” Dr. Kibbe says.

The ONC interim rule details what comprises a modular EHR and specifically recommends that practices take that approach. “That will likely have a significant effect on the market over the

Rates of Adoption of EHRs by Practice Size

No. of physicians	Fully functioning system	Basic system	No system
1–3	2%	7%	91%
4–5	3%	11%	86%
6–10	6%	17%	77%
11–50	8%	22%	71%
>50	17%	33%	50%

Source: “Electronic Health Records in Ambulatory Care—A National Survey of Physicians,” *New England Journal of Medicine*, July 8, 2008. Copyright© 2008 Massachusetts Medical Society. All rights reserved.

next few years because vendors that sold comprehensive EHRs are no longer relevant,” Dr. Kibbe says.

How the Incentives Work

In 2009, Medicare tried to boost the ranks of e-prescribers by offering incentives. Here’s how they work: If at least 10% of the provider’s Part B services come from a Medicare-approved list of office-based service codes, and if they comply with meaningful use for 90 continuous days in 2011, they are eligible for incentives equal to 2% of their total Medicare Part B payments in 2010, 1% in 2011 and 2012, and 0.5% in 2013. After that, the bonus program will be phased out. Providers who do not e-prescribe will be subject to penalties of 1% in 2012, 1.5% in 2013, and 2% in 2014 and thereafter. Starting this year, providers in group practices may also qualify to earn incentives equal to 2% of the group’s total Part B payments. For more information, see “Claims-based Reporting Principles for the 2010 eRx Incentive Program,” http://www.cms.hhs.gov/ERxIncentive/06_E-Prescribing_Measure.asp.

The newest incentive for e-prescription comes from the stimulus package. In order to qualify for stimulus money, physicians must meet meaningful-use criteria for EHRs that are part of the HITECH legislation (see Chapter 1). E-prescription is a key element in Stage 1 of those criteria. The legislation also stresses the importance of medication reconciliation and prevention of adverse drug interactions, functions that are embedded in some e-prescription systems. Note that some e-prescription products do not meet the criteria; specific information on what does and does not qualify is available on Surescripts’s e-prescribing resource center at <http://www.surescripts.com/certification-status.html>.

Whether the product currently meets incentive criteria may not matter if you’re buying a relatively inexpensive stand-alone system that you could replace if necessary. However, some experts suggest waiting to buy a full system (with e-prescription embedded) until the ONC finalizes the new criteria for vendor certification (at press time the interim final rule was to become final on Feb. 13, followed by a 60-day public comment period) and a new list of approved products becomes available. Check CCHIT’s Website (<http://www.cchit.org/products>) for an updated list of certified vendors that meet meaningful-use criteria.

“You want to be assured that the product will meet meaningful use, and you don’t want to buy from a company that has features you don’t need,” Dr. Kibbe says. “Practices might want to hold off until it’s really clear who the certified vendors and products will be.” Until then, he suggests that physicians start the planning process so they are ready to take advantage of stimulus money in 2011.

Stand-alone Systems

It’s not surprising that most physicians who have purchased e-prescription systems are using stand-alone software—70% vs. 30% who purchased e-prescription as part of an EHR package, according to Surescripts. These systems are much cheaper than fully functioning EHRs and can be purchased either as a software package or through an e-prescription ASP, which charges monthly fees for Web-based access. Depending on upfront and ongoing costs, financing options, or incentives, such a system can cost anywhere from \$500 to \$2,500 annually, according to the AMA.

Many physicians choose to start with a stand-alone e-prescription package as a way to get used to the technology before purchasing a full EHR system. Others maintain that the advantages of e-prescribing multiply when the function is embedded in a fully functioning EHR with access to patient medication and problem lists.

Another advantage of stand-alone systems is that it’s easy to get your system up and running. All you need is high-speed Internet access and the necessary hardware, such as desktop, laptop, or tablet computers and handheld devices. But before you buy a system, experts advise asking vendors these questions, according to the Center for Improving Medication Management’s (CIMM) “A Clinician’s Guide to Electronic Prescribing”:

Get instant medication safety/hazard alerts and instant error reporting tools from the Institute for Safe Medication Practices (ISMP) and the latest expert practice management tips from **Doctor’s Digest**. Just text DIGEST to 87415 or visit www.doctorsdigest.net to sign up for this free service.



- What are the monthly maintenance fees?
- What training is provided?
- Can your system access demographics in my practice management system?
- Does the system manage both new prescriptions and renewals electronically?
- What kind of support do you provide?

The guide also outlines what tasks your system should be able to perform. For details, see “What Your System Should Do,” opposite, and go to <http://www.amaassn.org/ama1/pub/upload/mm/472/electronic-e-prescribing.pdf>.

Expect Some Limitations

While most physicians who use e-prescription report that their systems save time and increase productivity, the systems do have limitations. Some practices run into problems due to unrealistic expectations, according to the AMA. For example, in order to consider lab results and prescription history, your system must interface with lab systems, the AMA says. Here are other reality checks according to CIMM:

- Alerts and reminders won't pop up unless your system has been programmed for these functions.
- E-prescription is not necessarily faster than writing a paper prescription; but steps can be taken to make it more efficient, such as setting up lists of commonly ordered medications.
- To ensure that your system meets expectations, make sure that it has the right features and functions to accomplish your goals. For example, e-prescription software that prints to a printer, producing a script that must then be faxed to the pharmacy, will not lead to hoped-for efficiencies. Look for systems that both send and receive electronically.
- If you have a stand-alone system, you must separately document all prescriptions in the paper charts.
- Schedule 2 controlled substances cannot be transmitted electronically; Schedule 3 controlled substances usually can be transmitted electronically with some restrictions. Check to make sure your EHR vendor is compliant with your state's regulations.
- In 2012, computer-generated fax prescriptions will no longer

What Your System Should Do

Whether you use a stand-alone e-prescription system or one within an existing EHR, your system must be able to perform certain functions, according to the CIMM 's "A Clinician's Guide to Electronic Prescribing":

- **Review patients' current medication list and medication history information:** Update and correct medication history and reconcile with multiple history sources.
- **Work with an existing medication:** View details of a medication, discontinue or remove a medication, change dosages, and renew medications.
- **Prescribe or add new medication:** Search for a medication from quick choices/favorites by name (generic or trade), by indication, and by formulary; display medications with prefilled, known, favorite, or standard dosing; select medication; review warnings; enter SIG and other parameters; and automatically populate and update favorites list of drugs with prefilled known dosing based on frequency of utilization by clinician.
- **Complete the prescription and authorize (electronically sign):** One or multiple items; items created by ancillary staff, residents, or others.
- **Transmit prescriptions:** Choose print, fax, transmit options in real-time or batch mode; print formats and prescription information, conforming to state regulations; handle restrictions on certain medications (e.g., Class II controlled substances); and ensure prescription is sent to preferred patient pharmacy (identified by practice staff prior to interaction with prescriber).

be in compliance with Medicare Part D.

In addition, although most pharmacies accept electronic prescriptions, some don't. To check, go to www.surescripts.com and search for pharmacies within your ZIP code that can send and receive requests electronically. CIMM suggests that you ask your vendor to pre-load your system with the pharmacies that you frequently use. Pharmacies will start sending you electronic renewal requests after you have sent five new prescriptions to them electronically.