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Y2K Compliance: The Countdown Begins

Health care organizations search for a cure for the millennium bug

Here's expert advice for fixing your Y2K woes

Case managers are in a uniquely uncomfortable position as the calendar continues to move relentlessly toward Jan. 1, 2000. The newspaper headlines and the nightly news reports are flooded with predictions of system failures the so-called millennium bug may cause. And, because of the many data gathering, contracting, coordination, and communication activities that are daily fare for most case managers, the sheer number of vendors, providers, and systems that must be checked for year 2000 (Y2K) compliance is daunting at best.

The term *millennium bug* refers to a host of problems that some computer programs and systems, as well as durable medical equipment, machinery, and computerized processes, may experience starting Jan. 1, 2000. Many computer programs use two-digit date codes. For example, they read "98" for 1998. When 2000 arrives, these programs will read the "00" as 1900. Any program that relies on date differences for the calculation of ages or time periods may falter or even crash when the clock strikes midnight on Dec. 31, 1999.

Jeff Bonham, MBA, vice president of the Marion,IL, consulting firm Medicare Training & Consulting, says the focus of agencies he works with — both as a consultant and as a director of the Illinois Home Care Council — is that there is more to be concerned about than whether your computer system will crash. "And even systems that don't crash may produce flawed data. It's important that people realize that any analysis or spreadsheet they run will be flawed unless someone goes back in and puts in four-digit dates."

Others agree that computer systems are just one component of the Y2K problem. For example, medical devices that use computer chips, such as IV drips, heart defibrillators, blood gas analyzers, and dialysis machines equipped with safety features requiring periodic service, may suddenly stop working on Jan. 1, 2000, because they "think" a hundred years have passed since the last calibration, explains **Albert W. Shay**, a

partner with Sonnenschein, Nath & Rosenthal's Washington, DC, office and a member of the law firm's Y2K task force.

"The other very real scenario is that the machine continues to function but gives bad data," Shay says. "This is a more insidious problem. The health care system has become very reliant on technology, and most of that technology uses embedded, date-sensitive computer chips built into them which may fail. We tell clinicians that they must empower themselves to use their own clinical judgment. If a reading seems out of line, don't accept it. Measure it by another means." **(See Y2K test plan, p. 5, for ideas on testing your own systems.)**

In addition to equipment failures directly linked to patients, there are many medical decisions physicians, case managers, and other clinicians make that depend on accurate information, Shay says. For example, computer systems may use a patient's age to determine normal or abnormal test results, or a patient's age may be critical for determining correct medication dosages or dosages for radiation therapies.

How do you determine what's worth worrying about, and how should you assess Y2K exposure? Here is some advice from attorneys, consultants, and health care executives who already have started the process:

1. Create an action plan. Before you start checking systems, you should sit down and create an action plan. Not only will this give you a road map to follow, but it could serve as proof that you took reasonable care to protect your business and your clients from harm should litigation arise from a Y2K system problem**.** **(For more on the legal liabilities your agency might face, see story, p. 7.)**

Larry Leahy, CHE, CHCE, MHA, is director of program integrity at Ruth Constant & Associates, a Victoria, TX, company that owns three home health agencies. He only recently started preparing for Y2K. One of his computer equipment vendors ran a free Y2K audit. "We knew we weren't going to be compliant," he says, noting that the agency had planned to upgrade or buy new and compliant systems in 1998 but didn't because of budgetary constraints.

After the vendor finished the audit, it developed a plan to bring Ruth Constant into compliance, says Leahy. "Our focus has been on internal operations, billing, and scheduling." Part of the solution will be a new operating system that allows seamless data input from start of service through billing and payroll. That will eliminate problems the current proprietary scheduling system and separate billing program could cause.

Written statements are not enough

Highly specialized, industry-specific software products, such as case management software, are most likely to be vulnerable to Y2K problems, adds **Greg Cirillo**, a partner with the Washington, DC, law firm of Williams, Mullen, Christian and Dobbins. "And you can't assume that just because a software product is relatively new it must be Y2K compliant. If a product was developed more than 12 months ago, I would check it out thoroughly," he says.

Leahy also plans to determine compliance with the companies with which Ruth Constant does business. He sent out letters asking them to state whether they, the goods they produce, or the services they supply will be affected by Y2K, and if so, what they are doing to remedy the problems and when they will be compliant.

However, Y2K consultants caution that written statements of compliance are not enough. "If it's a vendor or provider you depend on in your practice, demand that they 'demonstrate' not simply 'state' their Y2K compliance, advises **Sandra Bell**, an Atlanta-based attorney and Y2K consultant.

In addition, if a vendor is essential to your operations, consider a face-to-face meeting to discuss Y2K compliance, suggests Cirillo. "You

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should have a sliding scale based on how integral a vendor is to your daily operations. For some vendors, a telephone call or letter confirming their Y2K compliance may be satisfactory. For other vendors, a meeting may be necessary. And no matter what you are told about a product's or system's functionality on Jan. 1, 2000, you still have to run your own tests."

In addition, if a vendor or provider reports concerns about Y2K compliance or reports that they're still working on a troubling Y2K problem, case managers should consider using someone else, advises **John Gilliland**, JD, of the law firm Gilliland & Associates in the Cincinnati suburb of Crestview Hills, KY.

Leahy is checking Ruth Constant's communications system, which is a key area. "Everyone in home care depends on cell phones and pagers," he says. "We are talking to phone companies, our stationary phone system providers, our cell phone companies, and pager providers to find out where they stand. If those systems go down, we have to find an alternative form of communications," he says. That alternative plan will be included not just in the Y2K program, but also in Ruth Constant's emergency plan.

In addition, he has contacted the power company to see whether it is prepared. "If we have a patient on oxygen and power goes off, we have a problem," he says. So far, the utilities have calmed his fears.

An Atlanta-based Y2K group to which Bell belongs has spent several months unsuccessfully attempting to get Y2K compliance information from Atlanta-area utilities, she says. "We have a utilities subcommittee that has been calling and writing the utilities on a daily basis. Hospitals and other health care providers cannot function without utilities. There are predictions of nationwide utility outages that last anywhere from a few days to a few months," she explains. "Do you have a contingency plan for operating without water or electricity?" Holiday Inns of America, for example, has developed an aggressive contingency plan that includes digging wells at many locations because the hotel chain doesn't believe the water supply is going to be dependable, she adds.

2. Assess your exposure. Joe Cortese, director of management information systems at Montefiore Medical Center Home Health in Bronx, NY, largely has completed the systems upgrades his agency needs to comply with Y2K. He says he received help from the agency's affiliated hospital and his colleagues in deciding what to put on his checklist. Such networking can be key in finding programs, machines, and systems you might not otherwise think to check**. (An equipment checklist appears on p. 6.)**

One area of concern is whether your organization can survive the millennium bug's financial impact. "From my standpoint, the financial aspect is most important," says Bonham. "You have to worry if you will have access to funds you have in the bank, whether your payroll program will run."

There also is the big question of whether payments will come in on time. The Health Care Financing Administration (HCFA) in Baltimore has announced that its systems are not Y2K-compliant. This could be particularly troublesome for health plans with Medicare and Medicaid product lines. Financially, you should consider whether and how you will survive if you are cut off from funding for three to four months, Bonham advises.

Frail elderly are at-risk

If you work as a case manager in a home health agency, rehabilitation hospital, skilled nursing facility, or tertiary care hospital with a high percentage of Medicare or Medicaid patients, you should consider building reserves between now and Jan. 1, 2000, Bonham says. "You may have some salvation if you live in a market where you can diversify now, bring down your reliance on Medicare and start doing work that is paid for from other sources. If the market is there, that might also give you a better chance."

Leahy agrees cash flow is a potential problem. "If the HCFA system crashes, then the checks stop coming," he says. "We get electronic deposits every two weeks. We have to look at our lines of credit to ensure we can keep going." He is less worried about fund disbursement from private sources and the state of Texas, which make up about 35% of Ruth Constant's business.

He also says the company's relationship with the local bank will stand him in better stead in any kind of fiscal crunch than if Ruth Constant banked with a big national player. **(For more on where HCFA stands on Y2K compliance, see p. 9.)**

However, even other payers have concerns about HCFA's failure to update its systems. GuideStar Health Systems in Birmingham, AL, has elderly members who depend on Medicare as their primary insurance. "We pay what HCFA doesn't cover for these patients. We can't make payment until HCFA pays. If HCFA doesn't pay, we can't pay," says **Karen Chambers Knight**, RN, CCM, CDMS, director of utilization management for GuideStar. "I'm wondering whether providers will continue to provide care if Medicare fails to pay. In addition, these members receive food stamps and other benefits they depend on. I'm wondering if they'll develop nutrition problems or be unable to have their prescriptions filled. Even if payments and benefits are only delayed for one to two weeks, it could be critical for the frail elderly."

The risk to patients is as important as your financial risk, Cortese says. He suggests that one of your first assessments should be of any equipment that has direct contact with patients or impact on patient care. "If a patient gets sick, or worse, if the equipment stops working, that should be a big priority for you," he says.

In addition to equipment failures, Bell notes that distribution systems may fail. "I consult with many physician practices and tell my clients that they should stock at least six months' supply of any product or drug that is essential to their practices," she says. "Most people don't realize that distribution tracking and monitoring systems are run by satellites, which may fail and prevent products from being delivered."

Did your supplies arrive?

GuideStar Health Systems plans to track whether patients who have supplies delivered to their homes receive them as scheduled during the first few months of 2000, notes Chambers Knight. "We have patients who have supplies sent out on a monthly basis. There are also patients who rely on deliveries from mail order pharmacies. We are identifying those patients with critical needs. We plan to keep a list of those patients for whom it's critical that supplies are delivered on schedule and track whether those supplies arrive. The list will have to be continually revised based on current acuity as we move closer to the year 2000," she says. "Luckily, our system allows us to track scheduled deliveries."

You also will want to look at the less vital aspects of your business, such as your scheduling system. If any of your systems are proprietary, you need to ask the developer or programmer if they're Y2K-compliant. If you can't locate that person, says Cortese, contact one of the many consultants who can evaluate and modify what you have. But don't forget to ask for references. "There are consultants and technical testing companies all over the Internet. These people are coming out of the woodwork. Ask for references and check them before you hire a Y2K consultant," Cirillo says.

3. Start remediation program. Once you know your risk, you need to create a plan for operating with noncompliant programs. Contingency plans can be simple. For instance, if you are worried about whether your computer payroll program will work, have a checkbook, pen, and calculator at hand, says Bonham. You may even want to consider having enough cash on hand to pay your staff because your bank may not be compliant and may be unable to honor your checks, he notes.

But keep in mind there could be tax liability problems in keeping more cash on hand at the end of the year, Leahy warns. "I think our approach will be to ensure we have good lines of credit that will see us through one quarter."

A fax machine that won't date stamp your incoming and outgoing faxes automatically can be dealt with by having a manual date stamp on hand. Voice mail systems can include a reminder for callers to include the date and time they called.

Remediation programs also can be complex and involve the purchase of new computer systems, securing a bank loan or line of credit, or trying to change your patient mix so you rely less on Medicare and Medicaid payments.

If you haven't done anything yet, your first step should be to develop contingencies, says **Greg Solecki**, vice president of home health care for Henry Ford Health System Home Health in Detroit. "Assume you will go down and develop a plan for that," he says. "Then, with whatever time you have left, go back and attack the issues."

Solecki offers a picture of the future with less gloom and doom than others do. "I think that the worst thing that will happen is that your computer systems will crash. If you have a contingency plan for some sort of manual record keeping, I think you'll be fine. We were there before, we can do it that way again." ■

One provider's Y2K journey

Draw a map and then follow it

Before embarking on the road to the new millennium, make sure you have a good map, suggests **Greg Solecki**, vice president of home health care for Henry Ford Health System Home Health. He developed a chart that started at the end, where he wants to be on Jan. 1, 2000, and worked backward to see which tasks had to be done and when.

The first step was to ask his operational managers to inventory anything they thought might be vulnerable to year 2000 (Y2K) glitches. He added those elements to a list the health system had provided. The managers then had to determine which pieces of listed equipment were compliant and which were not. "That inventory took months," Solecki says. "I really had to push people to provide it."

"The window is closing. If we don't get into it, we're already probably too late."

Henry Ford diagnosed its software and hardware using off-the-shelf programs that are available for as little as $50. These programs run on your computer system to determine whether you have a Y2K-compliant program. Other machinery and equipment were more difficult to diagnose, requiring letters and calls to vendors and manufacturers.

"One thing you have to do is determine if you want to be conservative or liberal in how your prioritize your needs," Solecki advises. "The fax machine not having the right date may seem small, but to us, a fax of a physician order without a date is a big deal. We need that date to show compliance."

The phone system not having correct dates on the voice mail isn't as critical, he adds. "You just have to change your greeting to ask for the date and time the person called."

The next step is the hardest, he says. "We have to wait to see whether our vendors are compliant." Letters have been sent out to them, and many have assured Henry Ford verbally that Y2K is not an issue for the product or service they supply. "Now we have to wait for written confirmation. But that doesn't mean we'll get it in our time frame. If we don't, do we get a new system? We have to balance the scrapping and moving-forward costs. The window is closing. If we don't get into it, we're already probably too late." **(For additional information on checking for vendor compliance and assessing potential Y2K problems, see p. 6.)**

As he waits, Solecki is developing contingency plans for Henry Ford Home Health. "We assume we will go down on Jan. 1, 2000, and figure out how we will work," he says. Some of the plans are easy: If the fax machine doesn't put a date on top of the fax, a manual date stamp can be used. Software will be backed up before midnight on Dec. 31, 1999. ■

Hospital shares its Y2K testing process

The systems and products you test for year 2000 (Y2K) compliance and how you test them depend on your specific practice setting. The Hospital of Saint Raphael in New Haven, CT, developed the following Y2K test plan. The hospital notes that this plan is a work in progress and continues to evolve as the calendar moves closer to Jan. 1, 2000.

Year 2000 Test Plan

The item being tested will be certified year 2000 compliant if it can pass the following tests:

1. The product must operate with dates that are less than, equal to, or greater than 2000 when the system is 1999 or less.
2. The product must operate with dates that are less then, equal to, or greater than 2000 when the system is 2000 or less.
3. The product must work when the system date rolls between 12/31/99 and 01/01/2000.
4. If the product is passing a date that contains a year less than four digits to another application or system, it must pass enough information for the receiving system to comply with items one through three.

5. If the product is receiving data that contains a year less than four digits to another application or system, it must be able to interpret the date received to comply with items one through three.

6. The product must recognize the correct day of the week where required.

7. Date values stored, calculated, imported, exported, or displayed with less than a four-digit year must be completely unambiguous.

8. Date values must sort correctly. Sorting routines will recognize that dates containing years equal to or greater than 2000 are later than dates in the 1900s.

9. Date value calculations must operate and provide correct results. All date-related calculations will recognize that dates containing years equal to or greater than 2000 are later than dates in the 1900s. Enter various date formats to ensure they all work and the system can covert dates from one format to another.

10. The product must recognize year 2000 as a leap year and process 02/28, 02/29, and 03/01, 2000 properly.

11. Installations that are sensitive to file date-stamps will update files correctly. Installations will recognize that files stamped with years equal to or greater than 2000 are newer than those stamped with years in the 1900s.

Consider checking these systems for Y2K compliance

- ✔ **Computer systems:** including laptops, host computers, file servers, mass data storage, off-the-shelf computer programs, desktop software, and area-specific application software (such as billing and financial).
- ✔ **Office machines:** fax machines, photocopiers, scanners, printers, telephones, telephone switches, electronic personal reminders, electronic personal calendars, pagers, cash registers.
- ✔ **Medical devices:** infusion pumps, glucometers, fetal monitors.
- ✔ **Physical plant items:** ventilation systems, refrigeration units, security systems, wireless communications.
- ✔ **Electronic data supply partners:** third-party payers, administrators, auditors, banks.
- ✔ **Vendors:** licensed software vendors, maintenance agreement providers, utility companies, trash collectors, medical waste collectors, suppliers (such as pharmaceuticals, medical supplies, devices, housekeeping, dietary, and office).

Source: Henry Ford Home Health Care, Detroit.

Year 2000 Test Procedure

1. If the system represents dates in any variable as an offset from a base date/time, determine the following and accept or reject based on the functionality and expected lifetime of the application:

• maximum value for dates using this representation;

• minimum value of dates using this representation [using the base date].

2. Reset date to 6/23/2000. Exercise as much of the system functionality as possible, especially functions that would include date processing. Verify that system can be backed up before 01/01/2000, and restored after 01/01/2000.

3. Reset date and clock at least two minutes before midnight on 12/31/1999. Let unit run through midnight and at least two minutes past midnight. Ensure the following:

• date and clock continue to run with expected display values;

• verify that display and printed dates are correct.

A. Repeat Test 3 with power off during the transition.

B. Repeat Test 3 by setting date to some time after 01/01/2000.

C. Repeat Test 3A by setting date to some time after 01/01/2000.

D. Repeat Test 3 by setting date to 12/31/1899.

E. Repeat Test 3A by setting date to 12/31/1899.

4. Verify that in all instances when the system passes a date that contains a year less than four digits to another system, it passes enough information for the receiving system to interpret the date properly.

5. Verify that in all instances when the system receives a date that contains a year less than four digits from another system, it must be able to interpret the date received properly.

6. Verify the following information:

- 01/01/2000 is a Saturday;
- 02/29/2000 is a Tuesday;
- 03/01/2000 is a Wednesday;
- 02/28/2001 is a Wednesday.

7. Find the input limits to the date values the program accepts. Determine if these limits are acceptable.

A. Verify that the display of two-digit years reflect the correct century.

B. Review output reports for examples where the century "19" is hard coded. Determine if this is important.

C. Verify if there are any examples in the program where "00" or "99" mean something special, e.g. end of file, does not expire, etc.

D. Reset date to 09/09/1999. Exercise as much of the system functionality as possible, especially functions that would include date processing.

E. Test system date edits by entering the following:

- day = 0, day = 32, day = blank, day = alpha characters;
- month = 0, month = 13, month = blank, month = alpha characters.

8. Sort various dates in the 1850 to 2100 range and verify that years equal to or greater than 2000 are later than dates in the 1900s.

A. Test various reports with a year sort or a pagination by year across year 2000.

9. Calculate the number of days between two dates over 01/01/2000 and over 02/29/2000.

A. Enter various dates and ensure that they can be properly represented in the following formats:

- month/day/year;
- day/month/year;
- day/month;
- month/year;
- year/month;
- year/day.

10. Reset date and clock to 02/28/2000, 11:59 p.m. and verify that date and clock roll over to 02/29/2000.

A. Reset date and clock to 02/29/2000, 11:59 p.m. and verify that date and clock roll over to 03/01/2000.

B. Repeat tests 10 and 10A with power off during the transition.

11. Verify that files date-stamped with years equal to or greater than 2000 are newer than those date-stamped with years in the 1900s. ■

Are you at legal risk due to the millennium bug?

Here's how to protect yourself from litigation

Most businesses have to worry about management and technical issues surrounding the millennium bug. Health care organizations have to worry about liability issues, too. **(For more information about the Y2K problem, see stories, pp. 1-7, 8, and 9.)**

According to **John Gilliland**, JD, of the law firm Gilliland & Associates in the Cincinnati suburb of Crestview Hills, KY, you face liability issues if a system failure causes harm to a patient. For example, a home health nurse may miss a crucial visit to a patient because scheduling software was not year 2000 (Y2K) compliant.

In such cases, you first need to determine if the software manufacturer is liable for that mistake, rather than you, Gilliland says. "The problem is that while the Universal Commercial Code states that someone who makes a product gives an implied warranty, software companies typically have language with their product stating that you waive that warranty," he explains. "If you are buying a turn-key computer system, as many health care organizations do, you have to look in the contract to see what promises have been made."

If you haven't waived the warranty, then you must worry about which state law will apply — the one from the state in which the program was made, sold, or run. If you have a contract with a software company, language in the contract usually addresses the problem.

Get it in writing

Even if you have waived your warranty, you may still have recourse, Gilliland says. If you have written information from the company stating its product is Y2K compliant, and if a failure of that program or system causes injury to a patient, you probably have a good case to claim back damages.

Compucare, a health care information technology company in Reston, VA, provided its customers with a written warranty that its products are Y2K compliant, notes **Steven Russell,** senior

Where to go for Y2K help

Worried about where to find more information on the year 2000 problem and how it might affect you? There are plenty of World Wide Web sites full of facts. Among them are these:

❑ **www.year2000.com**. This site provides good general information and an ongoing discussion group with more than 1,800 subscribers.

❑ **www.y2k.com**. There are some great links to other sites at this address, as well as information on seminars, conferences, and special areas that deal with issues faced by small business owners — legal, management, and technical.

❑ **www.s390.ibm.com/vse/vsehtmls/vse2000.htm**. This address provides information of a more technical nature, particularly for programs that use COBOL.

❑ **www.Rx2000.org**. This site is a great resource for health-care-specific Y2K information.

❑ **www.nstl.com/html/nstl_Y2K_main.html**. This site offers testing programs that can be downloaded from the Web. However, the programs won't test critical operating-system software.

❑ **www.sba.gov/y2k**. This is a free site designed to help small business owners.

❑ **www.bytewise.com/altyear2000/**. This site includes information from a year 2000 users group in Atlanta that includes representatives from several large Atlanta-based corporations, such as Coca Cola. ■

vice president for Compucare's field operations. "We saw this issue coming and developed our products to function with Jan. 1, 2000, in mind. The way we test it is to simply put various dates in the system and check the output. It's something that organizations can do for themselves. It's just tedious and time-consuming."

Another potential legal problem could arise if you can't make payroll because you have a cash flow problem. "Most states have laws requiring that payroll be made regularly, and if you fail to make payroll, you can be subject to penalties and fines," Gilliland says.

"Make sure that you have a way to deal with the situation if there are three or four months where money isn't coming in. You can hope that enforcement agents will be a little understanding of the problem, but you can't count on that," he explains.

There also may be legal liability issues for disability insurers, notes **Sandra Bell**, an Atlanta-based attorney and Y2K consultant. "If those disability checks don't go out due to a Y2K-related failure, are you prepared to hire someone to type checks manually with a typewriter? I advise clients to have enough cash on hand to operate for a month, whatever their operating costs might be," she says.

Computer glitch or negligence?

The issues that concern most clinicians and case managers are those that directly affect patient care. For example, who is liable if medical equipment fails?

"I don't anticipate that there will be a generalized standard of care for every case manager that requires that every piece of medical equipment recommended for a patient is Y2K compliant," Gilliland says. "However, I do see a problem if a case manager is aware of a Y2K compliance issue with a particular piece of equipment and still recommends or approves it.

"Of course, no lawyer knows yet what the next few years will bring. However, I feel that there's not an affirmative duty for case managers to check every product, vendor, or provider for Y2K compliance," he says. "There is a duty to check up on any product, vendor, or provider for which you were aware there was a problem."

"It may seem far-fetched now to check for Y2K compliance of a piece of equipment you recommend, but you can't simply dismiss it," says **Greg Cirillo**, a law partner with the firm of Williams, Mullen, Christian, and Dobbins in Washington, DC. "Put yourself in the position of a jury in the year 2001 when a special computerized drip device failed to work and your patient died as a result. It's going to look like a lot more like negligence."

Law firms already are gearing up for what they expect to be a passel of millennium bug claims, says Gilliland. The best way to protect yourself is to start a Y2K compliance program and be able to document you have shown reasonable care to prevent a problem. ■

Y2K health care survey results

A recent survey of 55 health care organizations active in year 2000 (Y2K) issues revealed:

- 97% of respondents agreed that Y2K issues have significant potential to negatively impact the quality of health care.
- 94% agreed that Y2K issues have significant potential to create errors leading to unnecessary deaths in health care.
- 69% agreed health care lags behind most other industries in addressing Y2K issues.
- 62% already have experienced Y2K failures in their organizations.

Source: Rx2000 Solutions Institute. This information is available on the Rx2000 Web site at www.Rx2000.org.

GAO reports HCFA woefully noncompliant

If your health plan or organization works with Medicare or Medicaid patients, you must prepare for the probability that HCFA's systems will fail on Jan. 1, 2000. In a Sept. 28, 1998, report to Congress, the General Accounting Office (GAO) in Washington, DC, reported on the year 2000 compliance status of the Health Care Financing Administration (HCFA) in Baltimore. Findings included:

• HCFA has not developed an adequate overall schedule or a critical path that identifies and ranks year 2000 tasks and helps ensure they can be completed in a timely manner.

• HCFA has not implemented risk management processes necessary to highlight potential technical and managerial weaknesses that could impair project success.

• HCFA has not planned for or scheduled end-to-end testing to ensure that Medicare wide renovations will work as planned.

The report adds, "Given the magnitude of the task and risks ahead, and the limited time remaining, it is highly unlikely that all of the Medicare systems will be compliant in time to ensure the delivery of uninterrupted benefits and services into the year 2000."

[See: Medicare Computer Systems: Year 2000 Challenges Put Benefits and Services in Jeopardy. Letter Report, 09/28/98, GAO/AIMD-98-284.] ■

CMs help MD group keep seniors home

Office staff trained in early intervention

A San Francisco-based medical group wants to prove that case management keeps seniors healthier and more independent. Researchers still are crunching the raw data, but patient satisfaction surveys show the program is already popular with patients referred to Brown & Toland's Identification and Early Intervention program.

In a survey of 130 Brown & Toland patients receiving help from Seniors-At-Home, 88% said the service helps them feel safer at home. Seniors-At-Home is a community service agency operated by Jewish Family and Children's Services of San Francisco, the Peninsula, and Marin and Sonoma Counties that provides case management for the group's at-risk seniors. In addition, 82% report the service helps them remain independent in their own homes, and 97% simply are grateful their doctor's staff reach out to them.

"We didn't actually do a pre-intervention study to determine whether our costs for our seniors were extremely high, but there was a strong feeling that we had a growing need to help our seniors remain independent," says **Susan Roth,** MS, RN, director of geriatric programs for Brown & Toland. The medical group launched its Identification and Early Intervention program just over three years ago to provide preventive social services to at-risk members, and more than 1,300 of Brown & Toland's 16,000 seniors have received case management services so far, she adds.

More than 50% of referrals come from local hospitals. Brown & Toland receives a daily printout of geriatric admissions to California Pacific Medical Center in San Francisco. The printout provides patient age, diagnosis, and most recent admission date. "That's important information. If an 86-year-old patient is admitted for a fall and was just in the hospital two months ago, I see red flags," she says.

Brown & Toland also trains members of their physicians' office staff to act as geriatric resource

specialists. "We target physician practices with a high percentage of seniors,"' Roth says. She holds quarterly training sessions for physician staff members designed to help them identify problems earlier.

The 10-hour training sessions cover the following:

- normal and abnormal signs of aging;
- advance directives;
- elder abuse;
- polypharmacy;
- finances;
- communicating with individuals who have sensory impairment;
- local area services for seniors.

Education is ongoing

Geriatric resource specialists receive a binder of information to help them identify signs of cognitive problems and other frailties common in the elderly. "We don't give geriatric resource specialists a list of specific 'red flags.' I feel there has to be more thinking going on," Roth says. "Not every patient needs a referral." In addition to their initial training, geriatric resource specialists receive a newsletter and quarterly inservices to continue their training.

Brown & Toland patients identified as at-risk are referred to the Seniors-At-Home program for case management. A case manager visits patients referrals within 48 hours to complete a thorough at-home assessment, which includes functional ability, support systems, and health status.

"From that home visit, we make recommendations to Brown & Toland about what services patients need and how long case management should continue," notes **Eileen Goldman**, LCSW, director of the Seniors-At-Home program. "A patient may have a good social support system and need no more than a meal delivered daily, transportation to the physician's office, or a good adult day-care program."

The two levels of case management Seniors-At-Home provides for the majority of Brown & Toland patients are:

- **Limited risk case management**. "A patient who needs limited case management might be a patient who needs a few services, such as meal delivery, but who follows directions well and has a good support system," says Goldman. "These patients are able to manage well with some education, a few home visits, and a referral or two to local services."

Patients in this level typically receive three home visits from a case manager. "We make the telephone referrals to social services and write a final report for the patient's physician," she says.

- **Moderate risk case management**. "A patient who needs moderate case management might be a patient with some cognitive or emotional impairment that makes it harder to provide case management for them. This is typically also a person with a weaker support system," Goldman explains.

Patients in this level typically receive five home visits with follow-up telephone calls. "At the end of that time, if we think the patient still needs case management, we can ask the physician to authorize six months of monitoring or to reauthorize case management at the same level," she says. "If a case manager is monitoring a patient, typically that means a monthly home visit and weekly telephone calls."

Researchers at the Robert Wood Johnson Foundation in Princeton, NJ, are analyzing utilization data to determine whether case management services help reduce costs for seniors. "We have a treatment and control group, and we're looking at target areas such as emergency room use, inpatient days, skilled nursing facility admissions, and home health visits. We hope that the numbers prove that identification and early intervention help control medical costs for seniors," Roth says.

MD recommendation opens doors

Whatever the final numbers show, Roth and Goldman both are confident that the case management services have had a positive impact on Brown & Toland's seniors.

Goldman recalls one woman who fell in her home and had pain in her leg. "She was being cared for by her two brothers and they were ready to send her to the hospital," she says. Seniors-At-Home arranged to have an X-ray taken in the home. "The X-ray showed the bone wasn't broken. We arranged some respite care for the brothers and some physical therapy for the patient. The problem was easily managed at home with a good outcome."

"The beauty of this program is that the referrals come from the patient's doctor," adds Goldman. "It's often difficult to get seniors to accept social services, but if the recommendation comes from their doctor, the door opens for us to come in." ■

Making the perfect match

How to help clients select prostheses

A Missouri man recently was fitted with the nation's first SensorHand, a myoelectric hand developed by Otto Boch Orthopedic Industry in Vienna, Austria, that grips like a real hand. Fitting him with the hand was expensive, but his case manager decided the $30,000 bill was worth it.

"I really fought to get him this hand. He was a very motivated person who wanted to get back to work. He was only off work four weeks. He started back doing one-handed work until his myoelectric hand was ready. He was also young, only 35, with five children," says **Mavis Benner**, RN, BSN, CCM, case manager with The Traveler's Property Casualty in the Overland Park, KS, office.

Benner sent her client to Rehab Designs of America, an Overland Park, KS-based orthotics and prosthetics company with offices nationwide. "I sent him there simply because Rehab Designs opened a local office and one of their staff came to speak about prosthetics to a graduate class I was taking."

What Benner didn't know was that **John M. Miguelez**, CP, senior upper-extremity specialist with Rehab Designs and a prosthetic consultant in Rolling Hills, CA, recently had been asked by Otto Boch Orthopedics to beta test its new SensorHand in the United States. "We set the SensorHand down next to another prosthetic hand and asked the client to make the decision.

In the end, the client chose the SensorHand because it has several advantages over other myoelectric hands," notes Miguelez, including the following:

• **The SensorHand can be worn without a harness.** "Because it doesn't require a harness, the SensorHand allows the patient to move in any plain. This gives the wearer much greater mobility in all directions," he explains. The client had several issues that made fitting him with the SensorHand a special challenge. "He didn't want to use a harness. In those cases, we might consider using the wrist bones to grab on to. However, this client had unusually shaped wrist bones for an adult male, so we couldn't grip on to the wrists."

Miguelez designed a suction socket technique with a valve on the end and a plastic cuff that comes up over his elbow for good suspension. "The harness often creates issues with back pain, irritation, chafing, and limits range of motion," he says.

The large amount of residual limb also meant there was a smaller space to store the hand's electronic components, he points out. "At his amputation level, we had to be very creative and still keep the circumference of the prosthesis small enough that the client could pull a jacket on over his arm in cold weather."

• **The SensorHand can be cosmetically finished.** "It was clear that this patient wanted his myoelectric hand to look as similar to his natural hand as possible," Miguelez says. "The SensorHand can easily be fitted with a cosmetic finish that even includes freckles to closely match the patient's normal skin tones. The lithium ion battery in the SensorHand gives it a low profile that makes fitting it with a cosmetic cover easier."

• **Sensors in the fingers that respond to changes in force and can prevent slippage.** "For example, if you're in bed holding a book and want to reach for a glass of water with one hand, the hand automatically tightens to allow you to hold the book with one hand as you reach for the glass with the other," he says. "Normally, myoelectric hands can't respond to changes in force."

• **It only requires a couple of hours to recharge.** Other myoelectric prosthesis may take up to 16 hours.

Is there a job waiting?

Of course, case managers must consider not only the benefits of different prosthetics available on the market, but the needs and personalities of their clients as well. Factors that Miguelez and Benner suggest case managers consider when helping clients select a prosthesis include the following:

❑ **Motivation.**

"When clients lose a limb due to an accident, they go through a period of grief. Some patients have a harder time bouncing back," notes Benner. "There are people who give up. It may not be possible to successfully fit them with a prosthesis. This client was anxious to get back to a normal life with his family and his work."

❑ **Lifestyle.**

"Before you spend money on any prosthesis, you must consider what job is waiting for the client when he returns to work," Benner says. "This client was a die setter. He lost his hand in an industrial accident. His employer was willing to make accommodations from the beginning. He won't be going back and running machinery, but the company plans to use him as a trainer and supervisor."

❑ **Support system.**

"This client was a very resilient person with a supportive wife. He's also very spiritual and close to his church community," she says. "I thought that would serve him well as he adjusted. I had another client who had substance abuse problems and a poor social support system. I didn't feel he was a good candidate for an expensive prosthesis."

❑ **Expectations.**

"He was a very bright guy with fairly reasonable expectations," she says. "It's very important for case managers to work with clients on their expectations. There is a downside to even the most sophisticated prosthetics that we have a responsibility to discuss with clients."

In the case of the SensorHand, issues Benner discussed with her client include these:

- The hand feels pressure, not the patient.
- The hand has a limited life.
- The hand can't get wet.

"I had him fitted for a hook at the same time as his SensorHand for several reasons," she adds. "First, if he ever wants to go out and shovel snow, or do water sports, he can't wear his myoelectric hand. Second, if his myoelectric hand needs repair or recharging, I wanted him to have an alternative."

❑ **Cost.**

The SensorHand eventually will sell in this country for about $6,000, which does not include the total cost of the prosthesis, which came to $30,000 for Benner's client. "Many insurance companies wouldn't pay for a hand that expensive," she notes. "This was a workers' comp case, by law the client must receive a functional prosthesis that allows return to work. Judges are now more willing to look at cosmetic issues as well as functional issues depending on the age and motivation of the injured worker."

Remember that the stump will change in the first year and budget roughly $1,000 to make a new socket during the first 12 months following injury, she advises. Other factors she suggests case managers consider when helping clients select prosthetics include:

❑ **Speed.**

"I can't overemphasize the importance of facilitating the process as quickly as possible," she says. "It lessens the psychological impact of the limb loss and also keeps expectations more realistic and prevents muscles from atrophying."

❑ **Convenience.**

"I wanted it to be easy and convenient for him to get in for fittings and for training. He had to be fitted and trained how to use the hand. It was going to take many trips. I didn't want it to be a burden," she explains.

In fact, she ran into an early stumbling block in her client's rehabilitation. A few phone calls made it clear that there were no local occupational therapists with any experience in training clients how to use myoelectric hands. "I thought to myself, 'Here we've bought this expensive hand, and we won't be able to find anyone to train him to use it,'" she says. "The only option looked like driving to Kansas City, which was a two hour drive one way."

However, Benner finally located a local therapist willing to take her client. "Rehab Designs sent her videotapes, and she basically trained herself."

Credit where it's due

Benner then took an unusual step in her continued efforts to advocate for her client, even after fighting to get him the best possible prosthetic hand for his needs. "I wanted to get him even more committed than he already was to using his new hand and also to get him the attention I thought he had earned by maintaining such a positive outlook. I also wanted to bring some hope to others who may have lost a limb."

She contacted local television stations and newspapers and told them her client's story. "Even CNN ran a piece on him. The local paper did a nice story with pictures of him picking up an egg with his new hand," she says, conceding that publicity isn't appropriate in every situation.

"I wouldn't do it [seek media coverage for a patient] or recommend doing it for every case, but this was special. It allowed him to publicly profess that this was his hand. I also appreciated the hard work the prosthetics company and the therapist had done for this man, and I wanted everyone to get some recognition." ■

Side-effects hamper effectiveness of drug

Studies find problems with osteoporosis drug

Two new studies by researchers at Kaiser Permanente's division of research in Oakland, CA, found that gastrointestinal (GI) problems occur with surprising frequency in women taking the osteoporosis drug, alendronate. An estimated 3 million women worldwide currently take the drug.

The GI disorders cause many women to seek medical care or stop taking the medication within a matter of months. In addition, the studies found that roughly 56% of women fail to comply with dosing guidelines designed to help their bodies properly absorb alendronate, potentially reducing or eliminating the skeletal benefit of the drug.

Both studies used data from surveys and prescription data collected for 812 women, average age 69, who were members of Kaiser Permanente in northern California. Nearly one in three women using alendronate daily to treat osteoporosis complained of new GI symptoms, a frequency far greater than reported in clinical trials of the drug, according to a study published in the *Journal of Managed Care Pharmacy*.[1] Of the group complaining of new symptoms, 46% discontinued use of the drug within 10 months, more than half of them citing problems such as ulcers, nausea, abdominal pain, and heartburn as the reasons.

Almost one in eight women using the drug sought medical care for GI disorders, particularly women 70 or older, according to a related study in the *American Journal of Managed Care*.[2] "Doctors need to warn women at the outset about the potential side effects of alendronate," says **Bruce Ettinger**, MD, senior investigator at Kaiser Permanente's division of research. "The problems with the drug appear far more widespread than had been previously assumed. Unless it can be made more tolerable, many women aren't going to obtain the benefits alendronate can provide in preventing and treating osteoporosis."

Women with previously diagnosed GI disorders or those taking nonsteroidal anti-inflammatory drugs also had significantly higher rates of GI problems when they began using alendronate. "These women are typically age 70 or older," says Ettinger. "Physicians should really think twice about giving them alendronate. If elderly women are placed on the drug, they need to be monitored carefully because the risk of gastrointestinal problems is quite high."

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Studies show benefits of early HIV care

Early drug use lowers nondrug costs

Three studies presented recently at scientific meetings make the argument that early drug intervention reduces the average monthly cost of care for people with HIV. All three studies indicate that medical costs for people with HIV treated with early drug intervention stabilize over time. And all three attempt to determine the most effective way to manage HIV costs and influence public policy associated with medical care for people with HIV.

Marta E. Urdaneta, PhD, manager in the outcomes and research management division of Merck and Company in West Point, PA, participated in two of the studies. Urdaneta used data collected by Clinical Partners, a San Francisco-based company that provides data support and HIV case management services to managed care organizations nationwide.

The first study found that average monthly costs of care for people with HIV in managed care stabilized from 1995 to 1997, the period in which protease inhibitors and combination antiretroviral therapy became widely adopted in medical practice.

"We found that between 1995 and 1997, quarterly mortality rates dropped from almost 5% to

less than 1%, and average monthly costs of patient care stabilized at about $1,400 per patient among persons with HIV enrolled in several managed care plans in California and Texas," says **Diane Lapins**, MPH, RN, BSN, MSA, vice president for strategic services at Clinical Partners.

The patient population in this study included HIV-positive non-Medicaid and non-MediCal adult males and females who were enrolled in capitated, non-capitated, and preferred provider health plans managed by Clinical Partners from Jan. 1, 1995, through Dec. 31, 1997. During this period, the number of patients enrolled each month ranged from 474 to 723. "The range changed because we looked at the number of people enrolled each month," explains Urdaneta, who presented the findings at the recent Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) in San Diego.

During the course of the study, the average monthly per patient cost of treating a person with HIV stabilized in the managed care population. "Although the introduction of triple-combination therapy led to a rise in patient-per-month drug costs from $200 to $1,100, this increase in drug costs was accompanied by a corresponding decrease in average monthly non-drug costs from almost $1,300 to about $200, including hospital, professional, laboratory, and home care services," Lapins notes. "In fact, the overall average monthly cost of treating HIV patients held stable at about $1,300 over the last 14 months of the 36-month study."

Healthy patients cost less

The second study from Merck's outcomes research and management division found that the average monthly costs for treating persons with HIV in managed care is lower for patients with undetectable viral loads than for those with detectable ones. "We defined undetectable viral load as less than 400 copies / ml," explains Urdaneta, who presented the findings at the recent annual meeting of the Infectious Diseases Society of America (IDSA) in Denver.

"This analysis shows that the average monthly HIV treatment costs per HIV member — including drug, non-drug, and total costs — were lower for patients with undetectable viral loads," says Lapins. "In addition, increases in average monthly HIV patient drug costs per quarter were offset by decreases in average monthly non-drug costs per quarter in both groups. In fact, monthly total costs per patient for the HIV patient population studied were stable over the study period."

The main difference between the two studies was the focus on cost implications of viral suppression, Urdaneta points out. The study focused on the period from the first quarter of 1996 through the last quarter of 1997 for the simple reason that viral load information was not widely available for patients in the Clinical Partners data set before 1996, she says, adding that patients in the second study ranged from 556 to 723. "Obviously, patients moved between groups as their viral load status changed. They were classified as suppressed or not suppressed each quarter and average monthly drug costs were calculated each quarter."

Study findings include the following:

• The proportion of patients with viral levels suppressed to undetectable levels rose from 6% in the first quarter of 1996 to 56% in the fourth quarter of 1997.

• Overall monthly costs per patient with undetectable viral loads were consistently lower ($1,067) than costs for patients who did not achieve undetectable viral loads ($1,634).

"Not surprisingly, care for patients with undetectable viral loads is less costly than for those with higher viral loads in a managed care setting," Lapins says.

"The second study also underscores the need to get patients on drugs with a specific goal of suppression if we really want to keep costs in check," adds Urdaneta. "By demonstrating that all costs are significantly reduced for patients who are suppressed, we hope we can gain more support to get patients on drugs earlier."

"As many managed care organizations tend to view drug budgets and drug costs independently of other operational costs, these data underscore the need for viewing the per patient cost of HIV care as a whole," Lapins says. "It is important to recognize that HIV care encompasses many other components of care, such as indirect costs to community services, employers, friends, and families."

Persuading managed care organizations that early drug intervention reduces average overall monthly costs for members with HIV is challenging. Persuading state and federal governments that early drug interventions is cost-effective is even more daunting.

Research presented at the recent 12th World AIDS Conference in Geneva, Switzerland, used a

mathematical model to demonstrate that providing early access to AIDS treatment for the poor and uninsured would be cost-effective, or at least cost-neutral.

Current Medicaid eligibility rules only extend health care coverage to persons with HIV who have suffered an AIDS-defining illness or who have a CD4 count below 200, notes **Gary Rose**, JD, director of public policy for the Title II Community AIDS National Network and the Treatment Access Expansion Project in Washington, DC. "The state of medical science is such that there is a possibility with early, aggressive treatment that persons with HIV may never get AIDS," he says. "The problem with that is about 25% of persons with HIV have no insurance whatsoever, and the Health Care Financing Administration says they have to meet requirements of full-blown AIDS before qualifying for Medicaid coverage."

Cost of survival benefit a bargain

The study, conducted by pharmacoeconomists using established simulation techniques and data from existing clinical trials, drew several conclusions:

- Early intervention with AIDS drug cocktails delays the progression of AIDS.
- Providing early treatment, when patients have CD4 counts between 200 and 500 and have never experienced an AIDS-defining event, results in prolonged survival and is cost-effective when compared with costs of delaying treatment until patients have CD4s count of less than 200 or have experienced an AIDS-defining event.
- By five years, 15.3% of patients receiving early drug intervention are expected to develop an AIDS-defining event, compared with 25.4% if treatment is delayed.
- By 10 years, 40% of patients receiving early with drug intervention are expected to develop an AIDS-defining event, compared with 48.8% if treatment is delayed.

"At the most basic level, the research shows that patients receiving early, aggressive treatment experience increased life span," says Rose. "Moreover, the overall cost of providing patients with this survival benefit is negligible."

"This study provides an important addition to any discussion on early treatment for persons with HIV," says **John C. Hornberger**, MD, MS, director of health economics for Roche Global Pharmacoeconomic Research and a clinical associate professor of medicine in the division of general internal medicine at Stanford University in Stanford, CA, who conducted the study. "There is little argument that the clinical guidelines for treatment of persons with HIV, including early treatment with drug therapies, make sense in terms of efficacy, but we wanted to prove that they also make sense economically."

In fact, the simulation model found that the costs associated with delaying the onset of the symptoms of AIDS only increases overall medical care costs over the first five years by $241 per patient per year, he says.

The next step is to take Hornberger's simulation model and do it one better, Rose says. "We want to look at all the costs associated with treating early vs. treating late on every single number we could get our hands on, including productivity levels, prison, unemployment. We want to beta test the pharmacoeconomic model using state Medicaid recipients to see if we can make a real-world argument that early treatment has a positive cost impact," he says, adding that several

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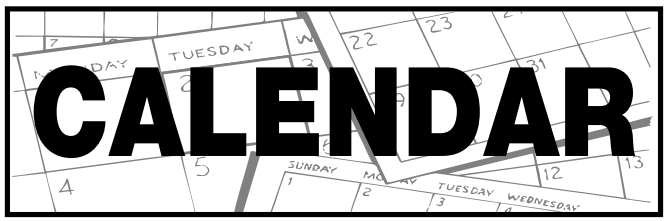
states have been approached about participating in the beta test.

"If the model works, and the intervention proved cost-effective, there's no reason why the same model can't be played with and used to show effectiveness of early intervention and prevention for other disease," he adds. ■



• **March 29-April 1.** The 11th Annual National Managed Health Care Congress at the Georgia World Congress Center, Atlanta. Sponsored by the National Managed Health Care Congress, Waltham, MA. This large conference has 12 professional tracks including case management, behavioral health, and disease management.

The cost of the full conference is $1,595 for participants who register by Feb. 28. Rates are also available for three-day attendance, one-day attendance, as well as discounts for government agencies and academic participants. Contact: NMHCC, P.O. Box 102713, Atlanta, GA 30368-2713. Phone: (888) 882-2500. Fax: (941) 365-0157. E-mail: register@nhmcc.com. Web site: www.nhmcc.org.

• **April 10-12.** "Integrating Case Management for the Next Millennium: The Fourth Annual Hospital Case Management Conference" at the Grand Hyatt in Atlanta. Sponsored by American Health Consultants, Atlanta, publisher of *Case Management Advisor.*

The cost is $595 for participants who register by March 12. For multiple attendee discounts and for more information, call American Health Consultants: (800) 688-2421. Fax: (800) 850-1232. E-mail: custserv@ahcpub.com.

• **May 23-25.** "Looking Through New Lenses, Reinventing Healthcare: The 1999 National Chronic Care Consortium National Conference," at the Fairmont Hotel, San Francisco. Sponsored by the National Chronic Care Consortium (NCCC), Bloomington, MN.

Cost information was not available at press time. Contact: NCCC, 8100 26 Ave. S., Suite 120, Bloomington, MN 55425. Phone: (612) 858-8999. Fax: (612) 858-8982. ■

CE objectives

After reading this issue of *Case Management Advisor,* continuing education participants will be able to:

1. Implement a test plan for year 2000 compliance.
2. List systems case managers should check for year 2000 compliance.
3. List clinical, emotional, and social criteria for helping clients select the correct prosthesis.
4. Identify side effects of the osteoporosis drug alendronate. ■