

CareManagement

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By Barbara (Bobbi) Kolonay, RN, BSN, MS, CCM


Families who have a parent or spouse who is becoming forgetful are often unsure how to differentiate normal aging from dementia and how to appropriately care for that individual. Geriatric care managers can ensure an accurate diagnosis and help families create a supportive and safe environment for their loved one, ensure security, access outside help, if needed, and understand the role of medications in treatment. The author, a private geriatric care manager with years of experience, provides practical advice about her role in advising families.


12 Scaling Up: Bringing the Transitional Care Model Into the Mainstream **CEU**

By Mary D. Naylor, PhD, RN, FAAN, and Julie A. Sochalski, PhD, RN, FAAN

The authors describe the Transitional Care Model (TCM) developed at the University of Pennsylvania, which aims to avoid hospital readmissions and emergency department visits, improve health outcomes after discharge, enhance patient and caregiver satisfaction, and reduce overall health care costs. In partnership with Aetna Corporation, they tested the concept and its value in the mainstream. The results of the project were strong clinical and economic outcomes. However, also apparent are needed changes in structures, care processes, roles of health professionals, and payment systems.

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Gary S. Wolfe

Information Technology Tools for Caregivers

There are many challenges in coordinating care. Recently the National Alliance for Caregiving and United-Healthcare conducted a study showing that many caregivers may use information technology (IT) tools to help care for family members.

The study was based on a November, 2010, online survey of 1,000 caregivers who provide at least 5 hours per week of unpaid care to an adult relative or friend. All of the caregivers in the survey use the Internet or some other technology to help provide care.

Expected Benefits

In response to questions about the expected benefits of using health IT tools, the researchers found that:

- 77% of survey respondents believed the tools would save time.
- 76% believed the tools would make care easier logistically.
- 75% believed the tools would make care recipients feel safer.
- 74% believed the tools would increase feelings of effectiveness.
- 74% believed the tools would reduce stress (Lewis, *InformationWeek*, January 2011).

Top Three Tools

The survey also identified three health IT tools that appeared to have the greatest potential to improve care because they appealed to a large number of caregivers and had minimal barriers to adoption. The top three tools identified were:

- Personal health records, with 77% of respondents saying they would find it helpful to have a Web- or software-based personal health record to track medications, test results, and other data
- Caregiving coordination systems, with 70% of respondents saying they

would find it helpful to have a system that logged a care recipient's medical appointments and helped coordinate care

- Medication support systems, with 70% of respondents saying they would find it helpful to have a device that reminded patients to take their medication and provided data on side effects

Although many caregivers saw promise in health-related technologies that were not in the top three tools, more than half said certain barriers would prevent them from using the tools.

The most commonly reported obstacle was price, with 37% of respondents saying that they believed the tools would be expensive.

Some respondents also reported a concern that the care recipient might not be receptive to trying new technologies.

This survey presents resources and challenges to case managers. Case managers should ask themselves how many of their clients would benefit from all or some of these IT tools. Using these IT tools may improve adherence and outcomes. The important role for the case manager, if introducing any of these IT tools, is to make sure the client and family understand how to use the tool(s). Good training will decrease the client's apprehension and frustration. Case management must embrace IT to improve client outcomes and the efficiency of the case management.

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ACCM: Improving Case Management Practice through Education

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CCMC Makes Role and Function Study Data Available

By Patrice Sminkey, RN, Commission for Case Manager Certification

Every 5 years, the Commission for Case Manager Certification (CCMC) administers a role and function study to identify and validate the essential activities and knowledge areas required for competency in the practice of case management. Data from the study are used to ensure that the CCMC certification examination and eligibility criteria remain current and highly relevant to the practice.

In addition, findings from the study provide key insights into the practice of case management, including revealing several emerging trends. As a reminder, the CCMC makes its latest study data available to any academics or professionals wishing to use the information in their studies.

Key findings from the 2009 role and function, the results of which were published in mid-2010, include:

- **Case management field shows signs of professionalizing**

The number of respondents to the role and function field survey with bachelor's degrees and higher is increasing (65% in 2009 vs. 60% in

2004). In addition, the requirements and rewards associated with certification appear to be growing. More employers require certification (36% in 2009 vs. 26% in 2004), and more employers offer additional compensation for certification (27% in 2009 vs. 20% in 2004). Altogether, more than half of case managers say their employers either require certification or financially reward certification or both. This number includes employers who require certification but don't pay more for it and employers who don't require certification but do offer rewards to those who are certified. It also includes a smaller number of employers who both require certification and offer extra compensation for it. These findings appear to indicate that *employers view certification as a quality indicator, a proxy for demonstrating competence that the employer is willing to pay for and even require.*

- **The case manager role appears to represent a career advancement opportunity for nurses**

The vast majority of case managers come from a nursing background, but they are not likely to be entry-level nurses. Almost no case managers are under age 30, while about 9% of RNs are under age 30 (based on survey findings from the Health Resources and Services Administration). Given that almost all case managers are RNs and over age 30, and more than 40% of case managers have been in the field less than 10 years, this suggests

that these professionals move into case management after working in a nursing position. In addition, case managers are far more likely than RNs to have a bachelor's degree or higher (65% vs. 31%).

- **The case manager role is becoming more challenging and more important within the health care system**

As the complexity of care increases, and the demand for accountability grows, the role of the case manager is growing in importance. The case manager has a key role in coordinating care across the spectrum of health and human services, through patient transitions and across multiple practitioners and care settings. Technology is rapidly evolving, and accurate communication between providers through technology is becoming more important. The case manager offers a link and oversight across settings and providers, the technology, and the increased need for accurate communication. These trends suggest that *more will be expected of case managers, who will have to meet higher standards and who will be in strong demand. Case management is a challenging, yet rewarding, role—and is financially rewarded as well.* The requirements and qualifications of the role, including demand for certification and rewards offered for its attainment, will likely grow as well.

Professionals and academics wishing to utilize the CCMC role and function

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The Commission for Case Manager Certification

established the standard for case management credentialing. The nationally accredited CCM® certification exam, which is continuously validated through evidence-based research, is a widely sought certification by employers. To learn more, visit www.ccmcertification.org, connect with CCMC on Facebook and follow CCMC on Twitter @CCM_Cert.



Developing Expertise in Assistive Technology for Your Clients

By Tony Langton

As the New Year begins, it's a good time to think about our challenges in helping clients and how we can improve their care. One of the difficulties for working-age people with disabilities is that their ability to get or return to gainful employment may rely on their access to assistive technology (AT). Case managers can play a critical role in ensuring that their clients have access to what will make them successful in their life roles. In this time of high unemployment, those of you who work with individuals with disabilities should explore and become more educated in how AT can be a resource for your clients.

CARF is fortunate to have access to leading experts in a variety of fields. The following information has been provided by Tony Langton, a key principal at Pathfinder Associates and an expert in AT.

Assistive technology can create jobs and careers for persons with disabilities that may not have seemed possible previously. Unfortunately, all too often, there is a perception that someone with a disability would not be able to perform specific job tasks. The truth is that, in many cases, an individual with a disability or other functional limitation would be able to perform essential tasks—if given access to AT or job accommodations.

Assistive Technology Meets a Range of Needs

AT needs are usually more obvious for persons with more severe disabilities, such as persons who cannot see or are

unable to stand or walk. In these situations, screen readers for computers or wheelchairs to help with mobility problems are relatively easy to recognize. However, AT can also assist people with disabilities that are more difficult to recognize.

One of the best descriptions of what AT means to persons with disabilities is explained by Mary Pat Radabaugh of the IBM Resource Center: "For Americans without disabilities, technology makes things easier; for Americans with disabilities, technology makes things possible."

People tend to take for granted conveniences such as remote controls for televisions, labor-saving devices like dishwashers or washing machines, or features such as spellcheckers built into word processing software. However, if you are someone with a disability, these are more than conveniences—these devices are often essential to perform daily tasks.

A Problem-Solving Process

But AT is more than equipment—it's really a problem-solving process that involves finding solutions to challenges and problems. Depending on the disability and employment needs of an individual, there are often a range of possibilities from simple, little or no-cost solutions—such as rearranging where supplies and materials are located—to more specialized AT—such as a standing wheelchair that can enable someone to work at a regular workstation in the kitchen of a large hotel.

In fact, there are thousands of com-

mercial AT products that offer solutions to many challenges. (One such source is ABLEDATA, which adds more than 1,000 AT products to its database each year. Visit www.abledata.com.)

Integrating AT Into Services

For AT to be used effectively, it's important that it is an integral part of planning and day-to-day services. Tech Point training resources help counselors and other rehab staff get maximum benefit from use of AT services. For more information on this approach, visit www.pathfinderassociates.net.

Technology needs must be considered throughout the entire rehabilitation process. Moreover, job analysis information that identifies essential job functions can help rehab professionals see where accommodations and AT can overcome barriers. Effective use of AT involves asking the right question at the appropriate time. If a low-cost device will meet someone's needs, then it makes little sense to recommend something that is complicated and more costly.

Rehabilitation staff, such as counselors, case managers, and placement specialists, will often need AT specialists to assist in this process. The key is to determine what the appropriate solutions are and to work closely with the technology team and the person with a disability so that he or she is involved in making important decisions.

AT service can be added to rehabilitation programs and organizations as a separate service—or as a component

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Marketing Hospice Services: Hospices Are Not Vendors

By Elizabeth E. Hogue, Esq.

Some hospitals and skilled nursing facilities (SNFs) refer to hospices as “vendors” and require them to follow the policies and procedures related to “vendors.” These may include, for example, a requirement for representatives of hospices to sign in when they arrive at hospitals and SNFs to coordinate services in purchasing departments.

On the contrary, postacute providers such as hospices are not “vendors” and should not be treated as such. They are, instead, fellow providers. Vendors are manufacturers and distributors of supplies and equipment that are utilized by hospitals and SNFs on the premises of institutions. Hospices do not sell equipment and supplies that are used by facilities on the premises. In fact, the users of hospice services are patients, not hospitals and SNFs.

When hospitals and SNFs lump hospices in with equipment and supply vendors they are, at the least, being disrespectful of these types of providers. Such treatment may be demeaning to hospice staff.

Some hospitals ask postacute providers who are categorized as vendors to pay fees to hospitals in order to appear on a vendor list. Such payments are likely to constitute illegal kickbacks in exchange for referrals and cannot be required.

In addition, restrictions that hospi-

tals and SNFs may appropriately put on the activities of vendors while on the premises are inapplicable to hospices. Vendors may, for example, be prohibited from going to areas of institutions besides purchasing departments unless they are accompanied by staff of the facilities.

No such restrictions should be applied to hospices. In fact, it is inappropriate to restrict the activities of hospices that:

- Have received referrals of patients
- Cared for patients immediately prior to their admission to institutions

Under these circumstances, hospices should be permitted access to patients, their families, and information about them as part of the discharge planning process.

It is important to note that referrals for hospice services do not have to come from physicians. They may come from patients or their families, physicians, case managers/discharge planners, or other sources. Referrals may also be received by hospices either verbally or in writing. When hospices are acting on verbal referrals, they should, however, document the name of the person who made the referral and the date and time at which it was received.

Of course, patients have the right to freedom of choice of providers. This right to freedom of choice of providers includes the right to self-refer to any type of postacute provider. There are a number of sources of this right, as follows:

1. All patients have a common law right, based upon court decisions, to con-

trol the care provided to them, including who renders it. When patients, regardless of payor source or type of care, voluntarily express preferences for providers, their choices must be honored.

2. Federal statutes of the Medicare and Medicaid programs guarantee Medicare beneficiaries and Medicaid recipients the right to freedom of choice of providers. (Medicaid recipients may have waived this right if they participate in a waiver program.) Consequently, when Medicare patients and non-waiver Medicaid patients voluntarily express a preference for a home health agency, these choices must be honored.
4. Court decisions, such as the opinion in *Assured Home Health, Inc. v. Providence Health System*, also support patients' right to freedom of choice of providers. In this case, Assured claimed that the hospitals in the System regularly violated patients' right to freedom of choice and “steered” patients to agencies owned by the System. This case was settled when the System agreed to institute additional safeguards to protect patients' rights, including monitoring of the hospital's practices by outside third parties.

Many patients and their families greatly value hospice services. Hospitals and SNFs should not treat them like “vendors.” **CM**

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Elizabeth E. Hogue is a health care attorney and consultant in Washington, DC.

CDMS Commission Publishes White Paper on Disability Management: Addressing the Multigenerational Workforce

The Certification of Disability Management Specialist Commission is pleased to announce the publication of a new White Paper entitled, “Disability Management: Addressing the Multigenerational Workforce.” The White Paper is available for free on the CDMS Commission Website at www.CDMS.org.

This document features experts from Aetna and MetLife, employers including E.ON U.S. and OhioHealth, and thought leaders in disability management. “Although much has been written on the aging of the workforce, given the large Baby Boomer demographic, there are few resources that specifically address disability management in a multigenerational workforce,” Debbie Cromwell, CDMS, CPDM, CCMP, Chair of the CDMS Commission said. “We believe this White Paper will contribute meaningfully to a very important discussion about workplace programs and interventions.”


The White Paper is particularly timely given today’s workforce that is composed of multiple generations as people in their 70s and 60s work alongside those who are in their 20s and even late teens. Understanding the characteristics of each demographic group is essential as disability managers and employers design and implement effective interventions such as return-to-work, health and wellness, and injury

prevention.

Most important, as the paper observes, is maintaining an individualized approach, which is a cornerstone of disability management. Although generational commonalities may exist, disability managers need to focus first on the individual and his or her specific needs and preferences. Overall, the aging of the labor force has contributed to the complexity of the multigenerational workforce and the need for health, wellness, safety, and prevention programs that address a wide cross-section of employees.

Other key findings from the multigenerational White Paper include:

- It is presumed that more than half of all workers, and an even greater number of Baby Boomers, will have to stay in the workforce beyond age 65. This will have a tremendous impact on the health, wellness, prevention, and productivity programs put in place by employers.
- Age is a strong determinant in workplace programs. Companies that have a higher median age, for example, will likely have greater incidence of musculoskeletal disorders than those with a younger population. Although individual differences exist—for example, the 60-year-old marathon runner and the physically inactive 20-year-old—age must be taken into account when designing and implementing workplace programs.

- It is essential to keep in mind that generational groups are composed of individuals who vary greatly on everything from health status to technology usage. Although certain generalities are helpful in becoming aware of trends and needs in health and disability, it cannot be assumed that just because two people were born the same year their needs are identical.
- To be most effective in achieving desired outcomes, disability managers must take a balanced approach to the multigenerational workforce that is mutually beneficial to the impacted employee and his/her employer.
- Employers should take a proactive approach to health, wellness, and prevention. These programs should target a variety of objectives, such as identifying risk factors before a chronic condition or disability results in lost time at work; preventing incidents and mitigating their impact when they do occur; and providing incentives and motivating healthier employee behavior. 

About the CDMS Commission

The CDMS Commission is the only independent and nationally accredited organization that certifies disability management specialists. Through sound testing backed by scientific research, continuing education, and a strict code of ethics, the Commission validates the core knowledge and competency of these experts. Visit www.cdms.org for more information.



Correct Use of GEMs (General Equivalency Mappings) in ICD-9 to ICD-10 Code Translation

By Barbara Aubrey, RN, CPC, CHCQM, FAHCQ

This is a revolutionary time in health care. Not only is the industry adjusting to health care reform, but we are also faced with migrating from one ICD code set to another. On top of that, providers who submit their claims electronically will be converting on January 1, 2012, to a new version for submitting those transactions. Faced with all these changes, much has been written and discussed regarding the new requirement and processes, including the conversion from ICD-9 to ICD-10. Almost all of the information is factual and important, but as is common in any major process change, there can be misunderstandings and rumors based on the lack of thorough understanding of some quite sophisticated logic and new requirements. In this article, we will explore the accurate use of the general equivalency mappings (GEMs) as they pertain to coding. The GEMs were created by 3M™ Health Information Systems under contract with The Centers for Medicare & Medicaid Services (CMS).

History

In an effort to streamline reporting of health care encounters and to gather more accurate patient data, Congress mandated the migration to ICD-10 CM (diagnosis coding) and PCS (hospital procedure coding). In addition, a new version of electronic claim transaction format known as Version 5010 was created. The new format will accommodate more diagnoses and will allow additional spaces for new digits required in ICD-10.

As most coders know, ICD-10 is widely used internationally. According to CMS, “The transition to ICD-10 is occurring because ICD-9 produces limited data about patients’ medical conditions and hospital inpatient procedures. ICD-9 is 30 years old, has outdated terms, and is inconsistent with current medical practice. Also, the structure of ICD-10 limits the number of new codes that can be created and many of the ICD-9 categories are full.”¹ Use of ICD-10 will allow the World Health Organization to integrate data from the United States with the rest of the world using the code set. This will result in improved public health statistics and mapping of quality outcomes.

The GEMs

Once the decision was made to migrate from ICD-9 to ICD-10, CMS and the Centers for Disease Control and Prevention (CDC) understood the need for an authoritative, bi-directional (can be used to translate ICD-9 to ICD-10 and ICD-10 back to ICD-9) resource guide crosswalk.² To answer this need, the General Equivalency Mappings were developed to help guide coders, providers, payers, and vendors in accurate translation of ICD-9 codes to ICD-10. The mappings were tested and the GEMs were found to be quite accurate. It is important to understand that the GEMs are intended to be a reference for the aforementioned groups throughout the transition to ICD-10. CMS is considering a plan to update the GEMs yearly and expects that updates

will be available until 2016, which is three years past the 2013 go-live date.³ This will support the health care industry in becoming fluent in ICD-10, allowing for continued testing of their mappings and integrating new codes into their translations.

Coding and the GEMs

As much as things change, some things stay the same. Coding process and procedures will not be affected—the coder remains an essential ingredient in determining accurate code assignment based on medical record documentation. The GEMs are NOT intended to be used for coding. The GEMs were created as a reference and resource to help you translate the codes used in your practice to the accurate, corresponding codes. And while the GEM mapping is an accurate reference, it may include 1-to-1 translation, 1-to-many, and 1-to-a cluster map in both forward and backward mappings. Choices must be made based on the purpose of what is being converted—for instance, a utilization or quality document with embedded codes for the purpose of a quality initiative or policy, a payer contract, or the clinical record for reimbursement coding.

Importance of Documentation

Coder authentication is required to validate the mappings based on review of your physician’s documentation in the medical records. Only the code set is changing; an accurate coding process following ICD-10 Coding Guidelines ►



Announcing New Department

SHARED EXPERTISE IN CARE MANAGEMENT

In this issue of *CareManagement*, we're kicking off a new year by introducing this new department dedicated to you and your expertise as case managers.

All of you have learned valuable best practices, efficient processes, effective communication and collaboration skills, or successful patient education methods in your years as case managers. We'd like you to tell your stories on this page.

Articles should be approximately 750–1500 words and offer practical information that can help other case managers perform their jobs more efficiently, provide better patient care, improve outcomes, introduce new technologies, or present effective methods of case management used in your facilities or companies.

Topics can include, but are not limited to:

- Technology applications
- Streamlined processes
- Success stories of case management
- Communication tips
- Methods for improving patient adherence
- Social networking for case managers
- Case studies
- Upcoming changes in regulations
- Tools of the trade

If you have an idea for an article, please e-mail Jennifer Maybin at jennifer@jmaybin.com.

We know you have success stories to tell. Share them with your fellow readers in a short article—and get your name in print!

will continue to be required. And because of the increased specificity of the ICD-10 codes, it will be important for coders to educate their physicians on how to accurately document to accommodate the increased specificity. Because of the potential ICD-9 relationship to the ICD-10 translation, the GEMs should not be used as a standalone resource—coders should continue to use their coding books and/or encoder to accurately assign ICD values. Medical record review remains essential to accurately code!

Case Study

Let's explore the ICD-9 to ICD-10 translation result in a case involving suture of an artery. This example is meant to illustrate how a specific code could translate and does not reflect coding guidelines beyond the case study scenario.

Case history:

A 49-year-old woman presents to the ED with complaints of pain and bleeding following a gardening accident during which she cut her right index finger. The patient is examined and found to have a laceration to the digital artery of her index finger. The laceration requires sutures for repair of the artery and is coded using ICD-9 PCS code 393.1, which represents “suture of an artery.”

At the same time, a 31-year-old woman is brought to the ED after suffering a stab wound to the chest. She is examined and is found to have a laceration of the aorta, which requires an open chest procedure to suture and repair the tear in the aorta. In this instance, the same ICD-9 code 393.1, “suture of an artery,” is used to represent an entirely different service based on the medical documentation. The GEMs mapping for ICD-9 code 393.1 in the first case translates to ICD-10 code 03QCazz, which represents “repair of the right hand artery, open approach.”

ICD-10 supports greater specificity

with regard to the type of procedure, anatomy, and surgical approach, which results in translations from the same ICD-9 code to completely different ICD-10 codes. In this example, the second case's identical ICD-9 code maps to ICD-10 code 02QW0ZZ, “repair thoracic aorta, open approach,” which is vastly different than the first mapping.

Summary

As you can see in the example above, the GEMs provide all plausible translations from one ICD-9 code to all the ICD-10 alternatives. Absent the human effort of reviewing the specifics in the medical record, the GEMs cannot make accurate code assignments. CMS suggests that they are not to be considered a substitute for learning to use the ICD-10 CM and ICD-10 PCS reference manuals or encoder systems. The GEMs are very helpful when used in conjunction with other coding resources and can assist coders now in building their practice's ICD-10 vocabulary. Used with solid coding process and procedures, the GEMs are an integral resource in ICD-10 fluency. **CM**

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She Is a Little Forgetful But...

Geriatric Case Management for Dementia Patients and Their Families

By Barbara (Bobbi) Kolonay, RN, BSN, MS, CCM

“My mom repeats the same story over and over again, but she never forgets to go to Sunday services.”

“Dad misplaces things all the time but is still walking a mile every day.”

This is frequently how adult children will express their concerns that their parent could have some type of memory issue when contacting my geriatric case management firm for assistance. Families seem to readily acknowledge and respond appropriately to physical illnesses but frequently fail to respond to the signs of dementia. Busy primary care practitioners (PCPs) fail to recognize the early signs of cognitive decline in their 15-minute office visit, particularly since many patients conceal symptoms or deny their existence.

More than one-third of people over age 70 have some form of memory loss, according to a national study by a team of researchers at Duke University Medical Center, the University of Michigan, the University of Iowa, the University of Southern California, and the RAND Corporation. The group performed the first population-based

study to determine the number of people who have some form of cognitive impairment, with and without dementia. These findings illustrate that nearly every family will be faced with caring for a family member that has some type of memory impairment. As a case manager we need to assist families in improving the quality of life for this growing population.

The Meaning of Terms

Many people mistakenly use dementia as a synonym for Alzheimer's disease. Dementia is an umbrella-like term that can be described as any brain syndrome that causes multiple cognitive deficits, similar as saying when someone has a fever and you do not know the cause. We will concentrate on the dementias most common in the elderly.

- Alzheimer's disease accounts for 50%-70% of all dementia cases
- Vascular disease accounts for 15%-20% of dementia cases and includes any diagnosis that disrupts blood flow to the brain
- Lewy body disease accounts for up to 20% of dementia cases

Families need to differentiate normal aging from dementia. Changes in ordinary capability and attitude among the elderly population are among the best warning signals that further cognitive screening should be performed (see Signs of Dementia).

Diagnosing Dementia

According to the DSM-IV diagnostic criteria assessment for dementia, a patient must have:

- Memory loss—inability to learn new information or to recall previously learned information
- And two or more of the following:
 - Aphasia: language disturbances
 - Apraxia: motor activity impairment although intact function
 - Agnosia: failure to recognize/identify items despite intact sensory functioning
 - Disturbances in executive functioning: planning, organizing, sequencing, initiating tasks
 - Inability to function in a social or occupational setting

There are many psychological tests to measure cognitive function. I use a combination of three tests as a concrete justification of the presumed diagnosis based on observation and family history.

1. MMSE: The Mini-Mental State Exam is the most commonly used test for complaints of memory problems or when a diagnosis of dementia is being considered. It also serves as a baseline for further testing. The MMSE test includes simple questions and problems in a number of areas: the time and place of the test, repeating lists of words, calculations such as spelling WORLD backwards, language use and comprehension, and ►

basic motor skills. It is the standard test used to measure cognition. The MMSE is primarily used to determine if an older person has dementia of varying nature. I have found this test is not as accurate in assessment of the initial stages of dementia for people with a high intellectual ability.

2. **Clock Test:** The clock test is given to pick up on memory issues that are frequently missed with the MMSE. I personally find it a more reliable instrument as it can pick up executive function abnormalities. Executive cognitive dysfunction can precede the memory disturbances of dementia. People with executive cognitive dysfunction can have a normal Mini-Mental State Examination (MMSE) score but still have severe functional limitations. The clock test is a moderately sensitive and specific adjunct for detecting executive cognitive dysfunction. Such disturbances result in difficulties with instrumental activities of daily living (IADLs; eg, bathing, dressing, cooking, shopping, driving, and taking medications). They produce dissociation between volition and action; for example, patients do not lose their ability to dress but, rather, are unable to initiate these tasks or choose weather-appropriate clothes.

Executive function involves the ability to think abstractly, and to plan, initiate, sequence, monitor, and stop complex behavior. People with executive dysfunction have difficulty with managing the household finances, taking their medications with reminders, cooking a meal, and performing their activities of daily living (ADLs) independently. Detection is critical to the client's safety and ability to remain living independently.

3. **Trail Making Test:** The trail making test (TMT) is a short and convenient estimate of cognitive functions, principally attention, and working memory. There are parts A and B to the

test. I usually just administer the Part B in either oral or written form. The patient is asked to draw a line alternating between serial sequences of letters and numbers. The TMT is thought to require executive control, specifically, flexibility of thinking and greater demand for working memory.

Cognitive testing seems to provide concrete evidence to families that the person does indeed have the cognitive issues they were identifying as concerning. If the family desires further cognitive testing, I recommend a neuropsychological evaluation.

Treatment

Once the dementia is identified, I work with the family to determine the best plan of care for the client.

1. **Determine that medical issues:** Thyroid disorders, B12 deficiency, uncontrolled hypertension, or depression may contribute to dementia. Ensure that the PCP has performed testing to rule out these underlying medical/psychological concerns.

2. **Create a supportive environment:**

- Conduct a home safety evaluation that looks at environmental factors that could put the person with cognitive impairment at risk, such as poor lighting, uneven surfaces, absence of handrails on steps and grab rails in bathrooms, dangerous/poisonous substances, and heating and electrical problems.
- Develop a medication distribution system that will ensure proper adherence to prescribed medications.
- Check the kitchen, which can be a potentially dangerous place for someone who is not able to recognize the threat of a sharp knife or a gas stove left on. Remove sharp instruments and if needed, remove the knobs to a gas oven.
- Create an environment with routine and structure because this assists in orientation and making the person feel safe and secure.

- Ensure that helpful information is accessible to the client. A large white board with a calendar of daily/weekly events can help reassure the person. Posting emergency numbers or setting the phone to predialed numbers is also helpful.
- Encourage physical activity, which

Signs of Dementia

- Increased difficulty carrying out ordinary daily activities, such as initiation of getting dressed or preparing a meal from scratch
- Poor or declining cognitive function
- Deterioration in hygiene, for example, no longer showering or changing clothes on a routine basis
- Inability to fulfill normal responsibilities, such as leaving unopened mail, failing to pay bills
- Health changes, for example, weight loss, incontinence, appetite changes, bruises suggesting a fall
- Increased isolation
- Loss of ordinary interest in social contacts, activities, or hobbies
- Attitude changes including abuse of alcohol or drugs, reporting depression, unusual argumentativeness or suspiciousness

helps prevent disruptive behavior or agitation.

- Avoid excessive stimulation but not to the point of isolation. Continued mental activity including hobbies, and current events should be encouraged.

3. **Help with managing finances:**

This is the time for the Durable Power of Attorney (POA) to assume responsibility for managing the finances of a person with dementia. Direct debits,

direct deposits of income, and online checking help prevent the job of the POA from becoming overwhelming. The POA may want to have the mail forwarded to his or her address to avoid lost or misplaced mail in the home of the person with dementia. It is recommended to keep a detailed record of all completed financial transactions when acting as the POA and to share this information with another family member to avoid any potential problems with family members or the person with dementia who may feel that the POA is stealing.

4. *Engage outside help:*

Most persons with dementia will resist in-home help because they do not have the insight into their disability. I recommend starting with a slow introduction of a medically supervised caretaker into the home. A registered nurse should develop a plan of care for the caretaker to follow. Never hire someone to care for a client with dementia if that person is not directly supervised. If the caretaker is a good match, he or she will develop a relationship so that the person with dementia looks forward to the visits and assistance. The caretaker can assist with personal needs, light housework, meal preparation, and laundry; provide meaningful activities; take the person out; and ensure that the client takes medication as scheduled. Of course, all these assistive tasks are dependent on the individual needs of the client. Health insurance does not cover the cost for in-home care. Therefore, if the client is low income, look for entitlement programs that may pay for these services.

5. *Provide security:*

Persons with dementia may wander outside and forget to close the door, have problems finding their way home, or lock themselves out and become confused and afraid.

- Medical Alert Bracelets can be

inscribed with the diagnosis of dementia. These bracelets have a number to call for emergencies.

- Encourage the family to find a trusted neighbor to give a spare set of keys.
- Advise the local police that the person has dementia and determine if there is a suitable window or door that can be opened from the outside.
- Suggest that the family purchase alarms that will sound when a door or window is being opened.
- Although persons with dementia frequently cannot utilize a cell phone, it is a good device to track the location of a person using the Google map tool or other method.
- The alarms that require pushing a button on a necklace or arm bracelet are of little help to a person with dementia because the person will not remember how to use the device.

6. *Consider medication:*

- Treatment with both a cholinesterase inhibitor such as donepezil (Aricept) and a N-Methyl-D-aspartic acid (NMDA)-receptor antagonist, memantine (Namanda), has shown promising results in slowing down the loss of performance of ADLs.
- Antipsychotics such as haloperidol and risperidone can be used to control severe agitation in the advanced stages of dementia.
- Current research is being conducted on many dietary supplements, such as omega 3 fatty acids and vitamin B supplements, with promising results as memory enhancers.

Planning for the Future

Because dementia is usually progressive, it is essential for families to plan for the future. Decisions about when it is time to move out of the home to a more supportive environment need to be

made with the help of a professional who has expertise in dementia care. This decision depends on many factors such as severity of the disease, behavioral issues, finances, home environment, family availability, and presence of other physical or psychological disorders that impact dementia. The final stages of dementia are one of the most difficult to manage in a home environment, especially with associated behavioral issues.

When the home is no longer a safe place for the patient with dementia or care cannot be managed effectively, the next step would be to look for an assisted living facility that specializes in the care of those with a diagnosis of Alzheimer's or dementia. The dementia-specific units are equipped to handle all the physical, environmental, behavioral, and psychological issues associated with end stages of dementia, using primarily behavioral measures rather than strictly medication management that is used in other settings.

End-of-life issues need to be addressed early on when a diagnosis of Alzheimer's disease or dementia is determined. Families need to determine a long-range plan including how they will manage the final stages of the disease. Treatment needs to be geared towards maintaining comfort rather than prolonging life. Hospice should be consulted early to assist in the management of this life-limiting illness to provide support to the family and ensure that the final stages of this disease are managed with dignity for the client and family. [CEU](#)

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Scaling Up: Bringing the Transitional Care Model Into the Mainstream

By Mary D. Naylor, PhD, RN, FAAN, and Julie A. Sochalski, PhD, RN, FAAN

Transitional care comprises a range of time-limited services that complement primary care and are designed to ensure health care continuity and avoid preventable poor outcomes among at-risk populations as they move from one level of care to another, among multiple providers and across settings.^{1,2} The core features of transitional care typically include:

- A comprehensive assessment of an individual's health goals and preferences, physical, emotional, cognitive, and functional capacities and needs, and social and environmental considerations
- Implementation of an evidence-based plan of transitional care
- Care that is initiated at hospital admission, but extends beyond discharge through home and telephone visits
- Mechanisms to gather and appropriately share information across sites of care
- Engagement of patients and family caregivers in planning and executing the plan of care
- Coordinated services during and following the hospitalization by a health care professional with special preparation in the care of chronically ill people, often a master's-prepared nurse

Transitional care provides critically needed service continuity at the most vulnerable points for persons with mul-

multiple chronic illnesses—during the “hand off” or transition between settings of care. Nearly one-fifth of all Medicare beneficiaries are rehospitalized within 30 days and one-third within 90 days of hospital discharge.³ The “churning” of these patients in and out of hospitals comes at a price—adverse clinical events, serious unmet needs, poor satisfaction with care, and avoidable readmissions.¹ Sixty percent of community-based chronically ill elders transitioning from hospitals to next sites of care, for example, experience medication errors.⁴ The Medicare Payment Advisory Commission (MedPAC) estimated that the costs associated with 30-day hospital readmissions account for an estimated \$15 billion annually in Medicare spending.⁵ An additional \$34 billion is lost annually by American businesses because of employees' need to care for family members.⁶ Transitional care is a patient-centered model intended to address unique burdens during episodes of acute illness by improving the quality of care and, ultimately, quality of life for patients with chronic illness and their families.

The Transitional Care Model

The Transitional Care Model (TCM), developed at the University of Pennsylvania, embodies the core features of transitional care through comprehensive in-hospital planning and home follow-up for chronically ill high-

risk older adults hospitalized for common medical and surgical conditions. These services are provided by a transitional care nurse (TCN)—that is, an advanced practice registered nurse with specialized training in caring for older adults with multiple chronic conditions and in supporting family caregivers—based on core program components that are tailored to the unique circumstances of each patient (see Essential Components of TCM).

TCM contrasts with other acute and post-acute care programs and interventions for chronic care management. Twenty years of NIH-funded clinical trials and related research conducted by the University of Pennsylvania show that transitional care targeted to high-risk chronically ill elders improves the quality of care, physical function, quality of life, and satisfaction with the care experience among patients and their family caregivers while achieving significant total costs savings.⁷⁻⁹

The significant and sustained outcomes of the TCM include:

- Avoiding hospital readmissions and emergency room visits for primary and coexisting conditions. The TCM has consistently been shown to avoid unplanned readmissions. Additionally, among those patients who require rehospitalizations, the time between primary discharge and readmission is longer and the number of inpatient days is shorter than expected. In the

most recently reported randomized controlled trial, significant all-cause reductions in readmissions were observed through one year.

- Improvements in health outcomes after discharge. Improvements in physical health, functional status, and quality of life have been reported by patients who received the TCM.
- Enhancement in patient and family caregiver satisfaction. Overall patient satisfaction has increased among patients receiving the TCM intervention. In ongoing studies, the TCM also aims to lessen the burden among family members by reducing the demands of caregiving and improving family functioning.
- Reductions in total health care costs. Both total and average costs per patient have been reduced among patients in the TCM. After accounting for the cost of the intervention, the mean savings in total health care costs was nearly \$5,000 per older adult.⁵

Bringing TCM Into Mainstream Practice

This accumulation of evidence set the stage for the next step in translating the Transitional Care Model into mainstream practice: pursuing an opportunity with an insurer to “scale up” the intervention. One insurer, Aetna, was particularly interested in adopting the TCM into its programs and achieving better outcomes among a segment of enrollees with the greatest health

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needs. The application of the TCM with Aetna members necessitated two modifications to the model that resulted from regulatory and legal issues. First, Aetna, as an insurance company (as opposed to a direct deliverer of care) was prevented from delivering the TCM services directly. As a result, Penn Home Care and Hospice (PHCH) was added as a partner to implement the model and a case rate per member paid to PHCH. Regulatory and legal issues further constrained TCNs from interacting with Aetna enrollees or their providers during acute hospitalizations. Instead, at-risk elders were identified in the community and enrolled in the TCM at a time that they were not necessarily experiencing episodes of acute illness. These modifications changed the timing of the onset of TCM services. While the tested protocol requires that patients are seen by TCNs within 24 hours of hospital discharge, in this translational study several days passed before the TCNs were notified about becoming involved in the care of some members. As a result of being unable to have an impact on the care of vulnerable patients during acute hospitalizations and during the immediate and critical post-discharge period, significant reductions in all-cause rehospitalizations were observed only through 90 days. However, cost savings per member were sustained through 1 year.

In partnership with the Aetna Corporation and with funding from The Commonwealth Fund and the Jacob and Valeria Langeloth Foundation, the Penn team used a two-phased, qualitative assessment to gauge stakeholders' perceptions of the process and the relative ease or difficulty of the model's translation within a defined segment of Aetna's mid-Atlantic market. This assessment and analysis yielded key lessons that should guide the development of translational strategies and follow-up. These include the need for strong champions to guide and direct

the translational effort, the degree to which the innovation fit within Aetna's mission and structure, and the need for flexibility with operational and procedural matters, such as the legal and regulatory hurdles that were faced.¹⁰

Additionally, to study the clinical and economic results associated with the translational effort, the Penn team studied the outcomes of the TCM on 172 Aetna Medicare Advantage members in the mid-Atlantic region. The team examined enrollees' health status and quality of life, as well as member and physician satisfaction and health resource utilization and costs. Findings from these quantitative analyses included a significant decrease in number of rehospitalizations and total hospital days at 3 months after enrollment into the TCM, although reductions in other utilization outcomes such as reductions in rehospitalizations at 6 or 12 months or in hospital days were not statistically significant. The TCM was associated with a significant savings of \$439 per member at 3 months and \$2,170 per member at 1 year.¹¹

Aetna's initial interest in the TCM was further fueled by these findings—strong clinical and economic outcomes and a favorable perception among key stakeholders of the innovation's fit and contribution. Even after taking into consideration the challenges and modifications required, Aetna saw the TCM as a high-value proposition. The return on investment stimulated Aetna's leaders to recommend expanding the model to markets with large numbers of Medicare members.

Healthcare Quality Strategies—the federally designated Quality Improvement Organization (QIO) for New Jersey—has advocated for the use of the TCM as part of the Centers for Medicare & Medicaid Services' (CMS's) national initiative to reduce hospital readmissions. The project, referred to as the New Jersey Care Transitions project, was initiated among

Essential Components of TCM

- The transitional care nurse (TCN) as the primary coordinator of care, to ensure consistency of provider across the entire episode of care
- Comprehensive in-hospital patient assessment
- Preparation and development of an evidenced-based plan of care
- Regular home visits by the TCN with available, ongoing telephone support (seven days per week) through an average of two months post-discharge
- Continuity of medical care between hospital and primary care physician facilitated by the TCN, who also accompanies each patient to his or her first follow-up visit
- Comprehensive, holistic focus on each patient's needs, including the reason for the primary hospitalization as well as other complicating or coexisting events
- Active engagement of patients and their family and informal caregivers, including education and support
- Emphasis on early identification and response to health care risks and symptoms to achieve longer-term positive outcomes and avoid adverse and untoward events that lead to readmissions
- Multidisciplinary approach that includes the patient, family, informal, and formal caregivers as part of the team
- Physician–nurse collaboration
- Communication among the patient, family, informal caregivers, and health care providers and professionals

Source: *The Transitional Care Model*, <http://www.transitionalcare.info/>

Medicare beneficiaries in defined communities in 14 states. For example, Virtua Home Care nurses receive training and ongoing technical assistance in using the TCM from the University of Pennsylvania research team.

Critical Ingredients in TCM

In addition to scaling the Transitional Care Model for size, success in translating the model into mainstream practice depends on identifying clinical and economic outcomes. Doing so requires a comparison of quality and cost outcomes of the TCM and similar programs offering post-acute care coordination to comparable populations in order to isolate the program elements that are essential in producing desired outcomes.

Under a separate project supported by The Commonwealth Fund, Sochalski and colleagues analyzed data from 12 randomized clinical trials testing the effect of post-acute care coordination programs, two of which employed TCM programs.¹² The critical features that produced significantly lower hospital readmissions included in-person contact with patients and family caregivers and a coordinated interdisciplinary team approach to managing and delivering care. In an evaluation of CMS' Medicare Coordinated Care Demonstration Program, Peikes and colleagues¹³ found that the most successful coordinated care programs for chronically ill elders—ie, those achieving both quality improvement and cost savings—were those that included effective programs of transitional care. In a commentary on this evaluation, Ayanian noted that successful coordinated care programs were those in which the designated care coordinators collaborated closely with patients' primary care physicians and clinical teams and were directly engaged in care (e.g., attended medical visits)—a feature fundamental to the TCM.¹⁴

Policy Challenges

The successes in scaling the TCM into an insurance environment argue favorably for its broader use among other private purchasers, insurers, and public payers. The model's capacity to improve quality and reduce costs, specifically through the reduction of hospital readmissions, positions it as a compelling solution for the payer community. In addition, consumers and patient groups have also recognized the promise of transitional care. In March 2009, AARP released a report that called for changes in health care delivery, payment, and education to mitigate the effects of chronic disease on the elderly and recommended expansion of transitional care services.¹⁵ In 2010, the National Quality Forum endorsed deployment of evidence-based transitional care such as the TCM as one of 25 national preferred practices for care coordination, and the Coalition for Evidence-Based Policy recognized the TCM as a "Top Tier" evidence initiative—a designation used by federal officials to identify social programs meeting a congressionally enacted standard.^{16,17} Finally, the Affordable Care Act (ACA) contains provisions that will support measurement of effective transitions, support delivery redesign and payment innovations that will foster evidence-based transitional care, support integrated models that hold providers accountable across a patient's episode of care and distribute rewards accordingly, and establish public reporting of and payment disincentives for avoidable hospital readmissions.

These noteworthy incentives notwithstanding, there are a number of policy challenges that must be overcome to translate the TCM into mainstream practice:

- Current Medicare reimbursement policy does not recognize nor pay for transitional care. High-value transitional care programs, modeled on the TCM, would need to be clearly

The translation of the TCM into mainstream practice depends on the dissemination of evidence of its effectiveness; however, as these projects demonstrate, evidence is insufficient.

defined and effective payment methods developed.

- CMS has undertaken a series of care coordination pilot programs over a 10-year period that have not achieved anticipated cost savings targets.¹⁸ Consequently, CMS is likely to be reticent to embrace yet again another initiative to pursue that goal.
- As national quality improvement goals are being established, a priority should be placed on incorporating those that address transitions along with measurable targets that stretch and reward performance.
- The current organization of health care services restricts the clinical practice of health care clinicians to individual settings, and does not readily permit the provision of care across settings, which is the hallmark of transitional care.

Conclusions and Recommendations

The translation of the TCM into mainstream practice depends on the dissemination of evidence of its effectiveness; however, as these projects demonstrate, evidence is insufficient. Fundamental changes are needed in the structures, care processes, and roles assumed by health professionals and their relationships to each other and the patients they serve. Important next steps in the translation of the TCM into mainstream practice will involve system redesign and payment changes. For example, as the majority of candidates for TCM are older adults, Medicare policy changes will be required to pay for the development and coverage of transitional care services. Financial incentives that ensure the swift and widespread adoption of such programs as well as their ongoing support will be needed. Strategies to

ensure the availability of these services in small and hard-to-reach communities must also be explored. It will also be necessary to develop policy changes that eliminate barriers to clinical practice across health care settings and enhance the health care workforce's understanding of and ability to deliver evidence-based transitional care. Finally, health information technology initiatives must incorporate mechanisms that will enhance the safe and targeted sharing of key health information across a broader set of services and resources to provide clinicians, patients, and family caregivers with the tools they need to truly coordinate care and manage health. **CEU**

Exam starts on page 16

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Adapted with permission from The Commonwealth Fund. www.commonwealthfund.org/Content/Publications/Issue-Briefs/2010/Nov/Scaling-Up-Transitional-Care.aspx.

Exam 1

She Is a Little Forgetful But... Geriatric Case Management for Dementia Patients and Their Families

- How many people over the age of 70 have some form of memory loss?
 - More than 25%
 - More than 33%
 - More than 40%
 - More than 45%
- Dementia is an umbrella-like term that can be described as any brain syndrome that causes multiple cognitive deficits.
 - True
 - False
- Alzheimer's disease accounts for what percentage of all dementia cases?
 - 30%–50%
 - 40%–60%
 - 50%–70%
 - 60%–75%
- Diagnostic criteria assessment for dementia must include:
 - Memory loss
 - Two or more of the following:
 - Aphasia
 - Apraxia
 - Agnosia
 - Disturbances in executive functioning
 - Inability to function in a social or occupational setting
 - A only
 - A and B
- Psychological tests to measure cognitive function include:
 - MMSE
 - Clock Test
 - Trail Making Test
 - All of the above
- Cognitive testing provides concrete evidence to families that the person does indeed have the cognitive issues they were identifying as concerning.
 - True
 - False
- A plan of care should include the following components:
 - Medical issues
 - Safety
 - Finances
 - Security
 - All of the above
- Medication may be a consideration in managing dementia. Medications include:
 - Cholinesterase inhibitors
 - N-Methyl-D-aspartic acid (NMDA)
 - Antipsychotics
 - All of the above
- Signs of dementia include:
 - Increased difficulty carrying out ordinary daily activities
 - Poor or declining cognitive function
 - Increased isolation
 - All of the above
- Because dementia is usually progressive, it is essential for families to plan for the future.
 - True
 - False

Exam 2

Scaling Up: Bringing the Transitional Care Model Into the Mainstream

- Transitional care comprises a range of time-limited services that complement primary care and are designed to ensure health care.
 - True
 - False
- Core features of transitional care include:
 - A comprehensive assessment
 - Implementation of an evidence-based plan of transitional care
 - Engagement of patients and family caregivers in planning and executing the plan of care
 - Care that is initiated at hospital admission but extends beyond discharge through home and telephone visits
 - All of the above
- Transitional care provides critically needed service continuity at the most vulnerable points for persons with multiple chronic illnesses—during the transition between settings of care.
 - True
 - False
- What percentage of Medicare beneficiaries is rehospitalized within 30 days of discharge?
 - 15%
 - 20%
 - 25%
 - 30%
- What portion of community-based chronically ill elders transitioning from hospital to next sites of care experiences medication errors?
 - 40%
 - 50%
 - 60%
 - 70%
- What is the cost associated with 30-day hospital readmissions to the Medicare program?
 - \$5 billion
 - \$10 billion
 - \$15 billion
 - \$20 billion
- Transitional care targeted to high-risk chronically ill elders improves:
 - Quality of care
 - Physical function
 - Quality of life
 - Satisfaction
 - All of the above
- Significant and sustained outcomes of the transitional care model include:
 - Avoiding hospital readmissions and emergency room visits
 - Improvements in health outcomes after discharge
 - Enhancement in patient and caregiver satisfaction
 - Reductions in total health care costs
 - All of the above
- The Penn/Aetna Medicare Advantage project showed the transitional care model was associated with a significant savings of \$439 per member at 3 months and \$2,170 per member at 1 year.
 - True
 - False
- The translation of the transitional care model into mainstream practice requires fundamental changes that are needed in:
 - Structure
 - Care processes
 - Roles assumed by health professionals
 - All of the above

The answer sheet for these tests must be received by May 31, 2011. Expired exams cannot be returned. Faxed exams cannot be accepted. You may submit one or both exams; credits will be granted accordingly.

CareManagement, Vol. 17, No. 1
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**Exam 1: She Is a Little Forgetful But...
Geriatric Case Management for Dementia Patients and Their Families**

This educational manuscript has been approved for 2 hours of CCM and CDMS education credit by The Commission for Case Manager Certification and the Certification of Disability Management Specialists Commission. Provider #00059431.

Answers: Please indicate your answer by filling in the letter:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Exam 2: Scaling Up: Bringing the Transitional Care Model Into the Mainstream

This educational manuscript has been approved for 2 hours of CCM and CDMS education credit by The Commission for Case Manager Certification and the Certification of Disability Management Specialists Commission. Provider #00059431.

Answers: Please indicate your answer by filling in the letter:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____

Continuing Education Program Evaluation

Please indicate your rating by circling the appropriate number using a scale of 1 (low) to 5 (high).

- 1. How well did the program meet the learning objectives?
- 2. Was this home study format an effective way to present this material?
- 3. Was the content current to case management practice?
- 4. Information presented could be applied to own practice?

Exam 1:					Exam 2:				
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5

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PharmaFacts for Case Managers



New Approvals

Abstral (fentanyl) Sublingual Tablets

The US Food and Drug Administration (FDA) has approved Abstral for the treatment of breakthrough pain in cancer patients, 18 years of age and older, who are already receiving, and are tolerant to, opioid analgesics for their underlying persistent cancer pain. Abstral is the first product to be approved in the US with the FDA mandated class Risk Evaluation and Mitigation Strategy (REMS) for transmucosal immediate-release fentanyl products. The Abstral REMS allows appropriate prescriptions to be filled at retail pharmacies as well as providing access to Abstral within hospitals.

Abstral is a fast-acting and rapidly disintegrating sublingual tablet formulation of fentanyl citrate designed for oral transmucosal delivery. The product offers an alternative therapeutic choice to patients and clinicians with a simple, patient friendly and predictable way of delivering fentanyl transmucosally while retaining the individualized dose titration aspects required for optimal treatment of breakthrough pain. Breakthrough pain is an acute and often severe flare of pain, experienced by patients suffering from cancer, which occurs even though a person may be taking opioid pain relief medicine regularly for their persistent pain. It is known as breakthrough pain because it “breaks through” a regular pain medicine schedule. It may be caused by the cancer itself or it may be related to cancer treatment.

About Breakthrough Cancer Pain

Breakthrough pain (BTP) is an acute and often severe flare of pain, experienced by patients treated with round the clock opioid analgesics for their underlying chronic cancer pain. It is known as breakthrough pain because it “breaks through” a regular pain medicine schedule. For some patients, breakthrough pain occurs during certain everyday activities, such as walking or dressing. For others, it occurs unexpectedly without any apparent cause.

About the Abstral REMS

The Abstral REMS program will allow the dispensing of Abstral in retail pharmacies across the US, once patients are enrolled in the program. ProStrakan has partnered with Relay Health to develop and deliver an innovative REMS program for Abstral that is designed to integrate with the pharmacy management system to automatically verify that all REMS requirements have been met prior to the pharmacist dispensing Abstral. The Abstral REMS program has been designed to minimize burden on prescribers and pharmacies and allow appropriate patients access to Abstral.

The goals of the Abstral REMS are to mitigate the risk of misuse, abuse, addiction, overdose and serious complications due to medication errors by:

- Prescribing and dispensing Abstral only to appropriate patients, which includes use only in opioid-tolerant patients
- Preventing inappropriate conversion between fentanyl products
- Preventing accidental exposure to children and others for whom it was not prescribed
- Educating prescribers, pharmacists, and patients on the potential for misuse, abuse, addiction, and overdose

The FDA has requested that all immediate-release fentanyl products are brought within a single REMS model and then within a single REMS system within 2011. It is anticipated that the Abstral REMS will be very similar to the class-wide REMS for all immediate-release fentanyl products.

Adverse Reactions

Common adverse reactions to Abstral include nausea, constipation, drowsiness and headache. Serious adverse reactions, including deaths, have occurred with other immediate-release fentanyl products. Deaths have occurred because of improper selection of patients and/or incorrect dosing.



Administration

Abstral should only be administered to patients who are considered tolerant to their opioid therapy for persistent cancer pain. Patients can be considered opioid tolerant if they take at least 60 mg oral morphine per day, 25 micrograms transdermal fentanyl per hour, or an equianalgesic dose of another opioid for a week or longer.

Abstral sublingual tablets should be administered directly under the tongue at the deepest part. Abstral sublingual tablets should not be swallowed, but allowed to completely dissolve in the sublingual cavity without chewing or sucking. Patients should be advised not to eat or drink anything until the sublingual tablet is completely dissolved.

In patients who have a dry mouth water may be used to moisten the buccal mucosa before taking Abstral.

Dose Titration

The object of dose titration is to identify an optimal maintenance dose for ongoing treatment of breakthrough pain episodes. This optimal dose should provide adequate analgesia with an acceptable level of adverse reactions.

The optimal dose of Abstral will be determined by upward titration, on an individual patient basis. Several doses are available for use during the dose titration phase. The initial dose of Abstral used should be 100 micrograms, titrating upwards as necessary through the range of available dosage strengths. Patients should be carefully monitored until an optimal dose is reached.

Switching from other fentanyl-containing products to Abstral must not occur at a 1:1 ratio because of different absorption profiles. If patients are switched from another fentanyl containing product, a new dose titration with Abstral is required.

The following dose regimen is recommended for titration, although in all cases the physician should take into account the clinical need of the patient, age and concomitant illness.

All patients must start therapy with a single 100-microgram sublingual tablet. If adequate analgesia is not obtained within 15-30 minutes of administration of a single sublingual tablet, a supplemental (second) 100-microgram sublingual tablet may be administered. If adequate analgesia is not obtained within 15-30 minutes of the first dose, an increase in dose to the next highest tablet strength should be considered for the next episode of breakthrough pain. Dose escalation should continue in a stepwise manner until adequate analgesia is achieved. The dose strength for the supplemental (second) sublingual tablet should be increased from 100 to 200 micrograms at doses of 400 micrograms and higher. This is illustrated in the schedule below. No more than two (2) sublingual tablets should be administered for a single episode of breakthrough pain during this titration phase.

If adequate analgesia is achieved at the higher dose, but unde-

sirable effects are considered unacceptable, an intermediate dose (using the 100-microgram sublingual tablet where appropriate) may be administered.

Doses higher than 800 micrograms have not been evaluated in clinical studies. To minimize the risk of opioid-related adverse reactions and to identify the appropriate dose, it is imperative that patients be monitored closely by health professionals during the titration process.

Maintenance Therapy

Once an appropriate dose has been established, which may be more than one tablet, patients should be maintained on this dose and should limit consumption to a maximum of 4 Abstral doses per day.

Dose Re-adjustment

If the response (analgesia or adverse reactions) to the titrated Abstral dose markedly changes, an adjustment of dose may be necessary to ensure that an optimal dose is maintained.

If more than 4 episodes of breakthrough pain are experienced per day over a period of more than 4 consecutive days, then the dose of the long-acting opioid used for persistent pain should be re-evaluated. If the long-acting opioid or dose of long-acting opioid is changed the Abstral dose should be re-evaluated and retitrated as necessary to ensure the patient is on an optimal dose.

It is imperative that any dose retitration of any analgesic is monitored by a health professional.

Discontinuation of Therapy

For patients no longer requiring opioid therapy, the Abstral dose should be taken into consideration before a gradual downward titration of opioids to minimize possible withdrawal effects. In patients who continue to take their chronic opioid therapy for persistent pain but no longer require treatment for breakthrough pain, Abstral therapy may usually be discontinued immediately.

Use in Children and Adolescents

Abstral must not be used in patients younger than 18 years of age because of a lack of data on safety and efficacy.

Use in Elderly Patients

Dose titration needs to be approached with particular care and patients observed carefully for signs of fentanyl toxicity.

Use in Patients With Renal and Hepatic Impairment

Patients with kidney or liver dysfunction should be carefully observed for signs of fentanyl toxicity during the Abstral titration phase. ►



Interactions

Fentanyl is metabolized by CYP3A4. Active substances that inhibit CYP3A4 activity such as macrolide antibiotics (eg, erythromycin), azole antifungal agents (eg, ketoconazole, itraconazole) or certain protease inhibitors (eg, ritonavir) may increase the bioavailability of fentanyl by decreasing its systemic clearance, potentially enhancing or prolonging opioid effects. Grapefruit juice is also known to inhibit CYP3A4. Fentanyl should therefore be given to patients with caution if administered concomitantly with CYP3A4 inhibitors.

Concomitant use of other CNS depressants, such as other morphine derivatives (analgesics and antitussives), general anaesthetics, skeletal muscle relaxants, sedative antidepressants, sedative H1 antihistamines, barbiturates, anxiolytics (ie benzodiazepines), hypnotics, antipsychotics, clonidine and related substances may produce increased CNS depressant effects. Respiratory depression, hypotension and profound sedation may occur.

Alcohol potentiates the sedative effects of morphine-based analgesics; therefore, concomitant administration of alcoholic beverages or medicinal products containing alcohol with Abstral is not recommended.

Abstral is not recommended for use in patients who have received monoamine oxidase (MAO) inhibitors within 14 days because severe and unpredictable potentiation by MAO inhibitors has been reported with opioid analgesics.

The concomitant use of partial opioid agonists/antagonists (eg, buprenorphine, nalbuphine, pentazocine) is not recommended. They have high affinity to opioid receptors with relatively low intrinsic activity and therefore partially antagonise the analgesic effect of fentanyl and may induce withdrawal symptoms in opioid dependent patients.

Undesirable Effects

Undesirable effects typical of opioids are to be expected with Abstral; they tend to decrease in intensity with continued use. The most serious potential adverse reactions associated with opioid use are respiratory depression (which could lead to respiratory arrest), hypotension and shock. Other very commonly reported adverse reactions include: nausea, vomiting, constipation, headache, somnolence/fatigue and dizziness.

Very common adverse reactions from clinical studies with Abstral were dizziness, somnolence, headache, and nausea.

Abstral is supplied in 50, 100, 200, 300, 400, 600 and 800 microgram sublingual tablets.

Amturnide (aliskiren, amlodipine and hydrochlorothiazide) Tablets

The FDA approved Amturnide (aliskiren, amlodipine and hydrochlorothiazide) tablets for the treatment of high blood pressure. Amturnide combines the only approved direct renin

inhibitor worldwide, Tekturna (aliskiren), with the widely used calcium channel blocker amlodipine and the diuretic hydrochlorothiazide (HCTZ).

The FDA approval was based on data from a double-blind, active controlled study, which showed that Amturnide provided significantly greater reductions in blood pressure compared to all dual combinations of its components. Amturnide is approved for patients whose blood pressure is not adequately controlled with any two of its individual components and is not indicated as initial therapy for high blood pressure. Amturnide is only the third high blood pressure treatment to combine three drugs in a single pill.

The study involved 1,181 patients with moderately elevated blood pressure (mean systolic blood pressure [mSBP] 160-179 mm Hg) or severely elevated blood pressure.

In the overall patient population, Amturnide reduced systolic/diastolic blood pressure by an additional 9.9/6.3 mm Hg compared to aliskiren/HCTZ; 7.2/3.6 mm Hg compared to amlodipine/HCTZ; and 6.6/2.6 mm Hg compared to aliskiren/amlodipine. In patients with severely elevated blood pressure, these reductions were greater by 16.3/8.2 mm Hg, 9.6/4.8 mm Hg, and 11.4/4.9 mm Hg respectively.

The single-pill combination Amturnide works to lower blood pressure in three ways. The Tekturna component targets the activity of the renin angiotensin aldosterone system (RAAS), an important regulator of blood pressure. Tekturna directly binds to and inhibits renin, an enzyme produced by the kidneys that starts a process that can make blood vessels narrow and lead to high blood pressure. The calcium channel blocker amlodipine lowers blood pressure by relaxing muscles in the blood vessel walls, and the diuretic hydrochlorothiazide increases the excretion of sodium chloride and water. All three complementary medicines work to relax blood vessels and reduce blood volume, therefore lowering blood pressure.

High blood pressure affects nearly 75 million adults in the United States and about one billion adults worldwide. An estimated 31% of adults being treated with antihypertensive medications are not at their blood pressure goal. Large-scale clinical trials suggest that up to 85% of patients may need multiple medicines to achieve target levels of blood pressure control, and hypertensive patients with lower blood pressure goals or with substantially elevated blood pressure may require three or more medications.

Amturnide is indicated for the treatment of hypertension. Amturnide is not indicated for initial therapy of hypertension. Use Amturnide for patients not adequately controlled with any two of the following: aliskiren, dihydropyridine calcium-channel blockers (DHP-CCB), and thiazide diuretics.

Switch a patient who experiences dose-limiting adverse reactions attributed to an individual component—while on any dual combination of components of Amturnide—to Amturnide at a lower dose



of that component to achieve similar blood pressure reductions. Amturnide may be substituted for its titrated components.

Safety

Safety and efficacy of Amturnide in pediatric patients have not been established.

When pregnancy is detected, discontinue Amturnide as soon as possible. Drugs that act directly on the RAAS can cause injury and even death to the developing fetus.

In patients with severe renal impairment (GFR <30 mL/min), loop diuretics are preferred to thiazides, so Amturnide is not recommended. No data are available on the use of Amturnide in patients with unilateral or bilateral renal artery stenosis. In studies of ACE inhibitors in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in serum creatinine or blood urea nitrogen have been reported.

Amlodipine is extensively metabolized by the liver. In patients with severe hepatic impairment, start amlodipine at 2.5 mg per day, a dose not available in Amturnide.

Amturnide has not been studied in patients with heart failure.

Side Effects

Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with aliskiren and has necessitated hospitalization and intubation. This may occur at any time during treatment and has occurred in patients with and without a history of angioedema with angiotensin-converting enzyme (ACE) inhibitors or angiotensin-receptor blockers (ARBs). Discontinue Amturnide immediately in patients who develop angioedema and do not readminister.

Excessive hypotension was seen rarely (0.3%) in patients with uncomplicated hypertension treated with Amturnide in a controlled trial. Volume- and/or salt-depletion should be corrected in patients prior to administration of Amturnide or symptomatic hypotension may occur.

Rarely, initiation or change to the dose of a calcium channel blocker has resulted in the increased frequency, duration, or severity of angina or acute myocardial infarction, particularly in patients with severe obstructive coronary artery disease.

In a short-term controlled trial, hypokalemia (serum potassium <3.5 mEq/L) was seen in 11% of patients treated with Amturnide. The incidence of hyperkalemia (serum potassium >5.5 mEq/L) was 3%. No patients treated with Amturnide discontinued because of increased or decreased serum potassium. Monitor serum electrolytes to detect possible electrolyte imbalance.

Concomitant use of Amturnide with potassium-sparing diuretics, potassium supplements, or other salt substitutes containing potassium may lead to increases in serum potassium.

Interactions


Concomitant use of Amturnide with cyclosporine or itraconazole is not recommended. When aliskiren was coadministered with furosemide, the AUC and C_{max} of furosemide were reduced by about 30% and 50%, respectively. Patients receiving furosemide could find its effect diminished after starting aliskiren.

Uptitrate HCTZ slowly in patients with renal disease, as thiazides may precipitate azotemia. Titrate HCTZ gradually in patients with hepatic impairment, as minor fluid and electrolyte balance may precipitate hepatic coma. Hypersensitivity reactions to HCTZ may occur in patients with or without a history of allergy or bronchial asthma, but are more likely in patients with such a history. Thiazide diuretics have been reported to cause exacerbation or activation of systemic lupus erythematosus. Lithium generally should not be given with thiazides.

HCTZ, a sulfonamide, can cause an idiosyncratic reaction resulting in transient myopia and angle-closure glaucoma. Symptoms include acute onset of decreased visual acuity or ocular pain and typically occur within hours to weeks of drug initiation. Discontinue HCTZ as rapidly as possible in these patients. Risk factors for developing acute angle-closure glaucoma may include a history of sulfonamide or penicillin allergy.

Common AEs: The most common adverse events in a short-term controlled trial that occurred in at least 2% of patients treated with Amturnide were peripheral edema (7.1%), dizziness (3.6%), headache (3.6%), and nasopharyngitis (2.6%).

Amturnide is a single tablet combining the direct renin inhibitor Tekturna (aliskiren), with the widely used calcium channel blocker amlodipine and the diuretic hydrochlorothiazide (HCTZ). The aliskiren component targets the activity of the renin-angiotensin-aldosterone system, an important regulator of blood pressure. Aliskiren directly binds to and inhibits renin, an enzyme produced by the kidneys that starts a process that can make blood vessels narrow and lead to high blood pressure. The calcium channel blocker amlodipine lowers blood pressure by relaxing muscles in the blood vessel walls, and the diuretic hydrochlorothiazide increases the excretion of sodium chloride and water. All three complementary medicines work to relax blood vessels and reduce blood volume, therefore lowering blood pressure.

Amturnide is available in five strengths as once-daily tablets containing aliskiren, amlodipine and hydrochlorothiazide: 150 mg/5 mg/12.5 mg tablets, 300 mg/5 mg/12.5 mg tablets, 300 mg/5 mg/25 mg tablets, 300 mg/10 mg/12.5 mg tablets, and 300 mg/10 mg/25 mg tablets. 

LitScan for Case Managers reviews medical literature and reports abstracts that are of particular interest to case managers in an easy-to-read format. Each abstract includes information to locate the full-text article if there is an interest. This member benefit is designed to assist case managers in keeping current with clinical breakthroughs in a time-effective manner.

AIDS. 2010 Dec 29. [Epub ahead of print]

Effect of highly active antiretroviral therapy on biomarkers of B-lymphocyte activation and inflammation.

Regidor DL, Detels R, Breen EC, et al.

OBJECTIVE: Chronic inflammation and B-cell hyperactivation are seen in HIV infection, contributing to an increased risk for the accrual of genetic errors that may result in B-cell lymphoma. The primary objective of this study was to determine the effect of highly active antiretroviral therapy (HAART) on serum levels of molecules that are associated with immune activation and/or inflammation, including several that are associated with B-cell activation, specifically IL-6, sCD30, sCD27, IgG, IgA, CXCL13 (B lymphocyte chemoattractant, BLC), a B-lymphocyte chemokine involved in B-cell trafficking, as well as C-reactive protein, an acute-phase protein. DESIGN: We used a retrospective cohort study design, measuring serum levels of these markers at each of four 1-year intervals, 2 years before and 2 years after HAART initiation, in a subgroup of 290 HIV-infected men enrolled in the Multicenter AIDS Cohort Study (MACS). METHODS: Serum levels of immune activation-associated molecules were measured by ELISA and multiplexed immunometric assays. Reference values were determined by the 5th to 95th percentiles from a sample of 109 HIV-uninfected MACS men. RESULTS: HAART use was associated with a reduction, but not normalization, of most biomarkers tested. Serum levels of IL-6 and C-reactive protein appeared to be unaffected by HAART. CONCLUSIONS: These results suggest a partial normalization of serum cytokine levels post HAART. However, a chronic state of B-cell hyperactivation continues 2-3 years after HAART initiation. These findings may explain, in part, the excess incidence of lymphoma still occurring in HIV-infected persons in the post-HAART era.

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Clin Infect Dis. 2011 Feb;52(3):387-95. Epub 2010 Dec 28.

Comparative effectiveness and toxicity of statins among HIV-infected patients.

Singh S, Willig JH, Mugavero MJ, et al.

BACKGROUND: Dyslipidemia is common and is often treated with 3-hydroxy-3-methylglutaryl coenzyme A (HMG CoA) reductase inhibitors (statins). Little is known about the comparative effectiveness of statins among human immunodeficiency virus (HIV)-infected patients. This study compared the effectiveness and toxicity of statins among HIV-infected patients in clinical care. METHODS: We conducted a retrospective cohort study of patients starting their initial statin medications at 2 large HIV clinics (N=700). The primary observation was change in lipid levels during statin therapy. Secondary observations included whether individualized National Cholesterol Education Program (NCEP) goals for low-density lipoprotein cholesterol (LDL-C) and non-high-density lipoprotein cholesterol (non-HDL-C) levels were reached, and toxicity rates. We used linear regression to examine change in lipid levels, controlling for baseline lipid values and demographic and clinical characteristics. We conducted secondary analyses using propensity scores to address confounding by indication. RESULTS: The most commonly prescribed statins were atorvastatin (N=303), pravastatin (N=280), and rosuvastatin (N=95). One year after starting a statin therapy, patients who received atorvastatin or rosuvastatin had significantly greater decreases in total chole-

terol, LDL-C, and non-HDL-C than patients on pravastatin. The likelihood of reaching NCEP goals for LDL-C levels was higher with the use of rosuvastatin (OR 2.1; $P=.03$) and atorvastatin (odds ratio [OR], 2.1; $P=.001$) compared with that of pravastatin. The likelihood of reaching NCEP goals for non-HDL-C levels was higher for rosuvastatin (OR 2.3; $P=.045$) but not atorvastatin (OR, 1.5; $P=.1$) compared with pravastatin. Toxicity rates were similar for all 3 statins: 7.3% for atorvastatin, 6.1% for pravastatin, and 5.3% for rosuvastatin. **CONCLUSIONS:** Our findings suggest that atorvastatin and rosuvastatin are preferable to pravastatin for treatment of HIV-infected patients with dyslipidemia, due to greater declines in total cholesterol, LDL-C, and non-HDL-C, with similar lower toxicity rates.

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Gastroenterol Clin Biol. 2010 Dec 22. [Epub ahead of print]

Lymphocytosis as a predictor of poor response to treatment of hepatitis C.

Martinez-Camacho A, Khaoustov VI, Adam E, Lewis DE, Tavakoli-Tabasi S, Yoffe B.

BACKGROUND/AIMS: Identification of factors predicting response to therapy is critical in the management of hepatitis C. This study assessed significance of lymphocytosis as a predictor of sustained virological response (SVR). **METHODS:** Retrospective analysis of lymphocytosis and its correlation with virologic response was performed in 110 subjects with chronic HCV infection, who underwent interferon-based therapy. Lymphocytosis was defined as ratio of lymphocytes to neutrophils (L/N) above 0.6. L/N ratios were calculated to avoid the impact of hypersplenism and constitutional leukopenia seen in African Americans (AA). **RESULTS:** At baseline, L/N of HCV subjects (0.86) as compared to hepatitis B controls (0.56) was significantly higher ($P<0.01$). More AA HCV subjects (81.8%) had lymphocytosis at baseline when compared to Caucasian Americans subjects with HCV (37.9%) or AA controls (39.4%). Nonresponders had a higher frequency of lymphocytosis at baseline compared to subjects that achieved SVR (61.4% vs. 36.0%, $P<0.05$). More HCV subjects without lymphocytosis at baseline achieved SVR (33.3%) compared to HCV subjects with lymphocytosis (15%). At week 12 of therapy, nonresponders had higher L/N (1.02 vs. 0.86) and frequency of lymphocytosis (73% vs. 48%) compared to subjects that achieved SVR ($P<0.05$ for both). Only 17.2% of subjects with lymphocytosis at 12 weeks achieved SVR compared to 37.5% without lymphocytosis ($P<0.05$). All responders exhibited significant normalization

of lymphocytosis after treatment. **CONCLUSIONS:** HCV induces lymphocytosis, especially in AA, and is associated with lower rate of SVR. Furthermore, lymphocytosis may serve as an inexpensive pre-treatment tool to predict poor virologic response to HCV therapy.

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Gastroenterology. 2010 Dec 22. [Epub ahead of print]

Increasing prevalence of HCC and cirrhosis in patients with chronic hepatitis C virus infection.

Kanwal F, Hoang T, Kramer JR, et al.

BACKGROUND/AIMS: Patients with hepatitis C virus (HCV) infection are at risk for developing additional liver disorders that are costly to treat and have high rates of morbidity, although the actual prevalence of these diseases is not known. We examined time trends in the prevalence of cirrhosis and its related complications, such as hepatic decompensation and hepatocellular carcinoma (HCC). **METHODS:** We calculated the annual prevalence of cirrhosis, decompensated cirrhosis, and HCC in a national sample of veterans diagnosed with HCV between 1996 and 2006. Patients with HCV who had at least one physician visit in a given calendar year were included in the analysis of prevalence for that year. We used direct standardization to adjust the prevalence of cirrhosis and related complications for increasing age of the cohort as well as sex and changes in clinical characteristics. **RESULTS:** In this cohort, the number of individuals with HCV increased from 17,261 in 1996 to 106,242 in 2006. The prevalence of cirrhosis increased from 9% in 1996 to 18.5% in 2006. Similarly, the prevalence of patients with decompensated cirrhosis doubled, from 5% in 1996 to 11% in 2006, whereas the prevalence of HCC increased approximately 20-fold (0.07% in 1996 to 1.3% in 2006). After adjustment, the time trend in the prevalence of cirrhosis (and its complications) was lower than the crude trend, although it still increased significantly. **CONCLUSIONS:** The prevalence of cirrhosis and HCC in HCV-infected patients has increased significantly over the past 10 years and could increase further. An aging cohort of patients with HCV could partly explain our findings. Clinicians and health care systems should develop strategies to provide timely and effective care to this high-risk population of patients.

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J Heart Lung Transplant. 2010 Sep;29(9):957-65. Epub 2010 Jun 8.

Is stress cardiomyopathy the underlying cause of ventricular dysfunction associated with brain death?

Berman M, Ali A, Ashley E, et al.

BACKGROUND: Most deaths in the first 30 days after cardiac transplantation are due to failure of the donor heart, often with the clinical picture of right ventricular failure. Indeed, there is a significant reduction in contractility of the human donor heart and loss of contractile reserve before and soon after transplantation. This myocardial insult appears in association with brain death in the donor and follows a “catecholamine storm” associated with a rapidly rising intracranial pressure. Microscopy of the myocardium in organ donors shows a picture typical of catecholamine-induced injury and similar to changes found in endomyocardial specimens of stress cardiomyopathy (catecholamine-induced cardiomyopathy, or Takotsubo cardiomyopathy). There are three common features between stress cardiomyopathy and the heart of a brain-dead donor: exposure of the heart to unusually high catecholamine levels, ventricular dysfunction, and prompt recovery. Stress cardiomyopathy is a temporary myocardial dysfunction that has been described after sub-arachnoid hemorrhage, traumatic head injury, pheochromocytoma, acute emotional distress, exogenous administration of catecholamines, and non-related surgery. Given the common features of this catecholamine-mediated myocardial insult, we ask if brain-dead donor heart dysfunction is an extreme variant of stress cardiomyopathy? And, if so is it, like stress cardiomyopathy, reversible? Can we therefore expect recovery of the dysfunctional donor heart over time, thereby permitting increased use of hearts offered for transplantation?

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Hypertension. 2011 Jan 3. [Epub ahead of print]

Detecting sodium-sensitivity in hypertensive patients: information from 24-hour ambulatory blood pressure monitoring.

Castiglioni P, Parati G, Brambilla L, et al.

BACKGROUND/AIMS: Sodium sensitivity is an important cardiovascular risk factor for which a diagnosis requires a time-consuming protocol, the implementation of which is often challenging for patients and physicians. Our aim was to assess the reliability of an easier approach based on data from 24-hour

ambulatory blood pressure monitoring performed in hypertensive subjects during daily-life conditions and habitual diet. **METHODS:** We enrolled 46 mild to moderate hypertensive subjects who underwent 24-hour ambulatory blood pressure monitoring during usual sodium intake. Patients were divided into three classes of sodium sensitivity risk on the basis of ambulatory blood pressure monitoring data: low risk if dippers and a 24-hour heart rate ≤ 70 bpm; high risk if nondippers and a 24-hour heart rate of >70 bpm; intermediate risk with the remaining combinations (dippers with heart rate >70 bpm or nondippers with heart rate ≤ 70 bpm). Then patients underwent a traditional sodium sensitivity test for the dichotomous classification as sodium sensitive or sodium resistant and for evaluating the sodium sensitivity index. Prevalence of sodium-sensitive patients and mean value of sodium sensitivity index were calculated in the three risk classes. **RESULTS:** The sodium sensitivity index markedly and significantly increased from the low-risk to the high-risk class, being equal to 19.9 ± 14.4 , 37.8 ± 8.3 , and 68.3 ± 17.0 mm Hg/(mol/day) in the low-risk, intermediate-risk, and high-risk classes, respectively ($M \pm SEM$). Also, the prevalence of sodium-sensitive patients increased significantly from the low-risk class (25%) to the intermediate-risk (40%) and high-risk (70%) classes. **CONCLUSIONS:** Thus, performance of 24-hour ambulatory blood pressure monitoring in daily-life conditions and habitual diet may give useful information on the sodium sensitivity condition of hypertensive subjects in an easier manner than with the traditional sodium sensitivity test approach.

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Ann Allergy Asthma Immunol. 2011 Jan;106(1):17-23. Epub 2010 Nov 20.

Relationship of asthma management, socioeconomic status, and medication insurance characteristics to exacerbation frequency in children with asthma.

Ungar WJ, Paterson JM, Gomes T, et al.

BACKGROUND: Less than 25% of asthmatic children are well controlled. **OBJECTIVE:** To identify factors associated with asthma exacerbation causing emergency department (ED) visits or hospitalizations related to health status, socioeconomic status (SES), and drug insurance. **METHODS:** In this retrospective cohort study, complete data were collected on 490 asthmatic

children regarding demographics, SES, drug plan characteristics, health status, health resource use, and symptoms. Interview data were linked to administrative data on asthma ED visits and hospitalizations occurring in the following year. Multiple Poisson regression identified independent variables associated with ED visits or hospitalizations in the full cohort and in a subgroup with prescription drug insurance. RESULTS: Younger age, previous emergency visits, nebulizer use, pet ownership, and receipt of asthma education but not an action plan were significantly associated with more frequent exacerbations. In the full cohort, children with high income adequacy had 28% fewer exacerbations than did children with low income adequacy. In the subgroup with drug insurance, girls had 26% fewer exacerbations than did boys, and children with food, drug, or insect allergies had 52% more exacerbations than did children without allergies. Children of families with annual insurance deductibles greater than \$90 had 95% fewer exacerbations. Every percentage increase in the proportion of income spent out-of-pocket on asthma medications was associated with a 14% increase in exacerbations. CONCLUSIONS: Asthma history, disease management factors, and SES were associated with exacerbations requiring urgent care. In families with drug plans, the magnitude of asthma medication cost-sharing as a proportion of household income, rather than income alone, was significantly associated with exacerbations.

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Ann Surg. 2010 Dec;252(6):1005-1012.

Laparoscopic resection of colorectal liver metastases: surgical and long-term oncologic outcome.

Kazaryan AM, Marangos IP, Røsok BI, et al.

OBJECTIVE: To analyze the immediate and long-term outcome after laparoscopic resection of colorectal liver metastases and difference between observed and predicted [Fong's and Basingstoke Predictive Index (BPI) scores] survivals. BACKGROUND: Laparoscopic liver resection has been reported safe and feasible and improves postoperative course. The oncologic outcomes after resection of colorectal metastases are poorly reported. METHODS: Between August 1998 and January 2010, 122 patients underwent laparoscopic resection for colorectal liver metastases during 135 procedures at Rikshospitalet. Patients undergoing surgery between August 1998 and June 2009 were included in research analysis. The patients had median Fong's and

BPI's scores of 2 (0-5) and 7 (0-23), respectively. Mainstream analysis of hospital data was done on intent-to-treat basis. Intraoperative incidents and postoperative complications were analyzed according to the Satava and Clavien-Dindo classifications. Median follow-up was 24 (0-100) months. RESULTS: One hundred fifty-one liver resections were performed in 107 patients during 118 procedures: 117 nonanatomic and 34 anatomic liver resections. There were 5 conversions to laparotomy (4.2%). The resection margin was free of tumor tissue in 141 (93.4%) of 151 specimens, and the distance between the resection margin and tumor tissue was median 6 (0-40) mm. Intraoperative incidents occurred in 14 cases (11.9%), including 5 (4.2%), 8 (6.8%), and 1 (0.8%) cases of grades I, II, and III, respectively. Postoperative complications were observed in 16 cases (14.3%), including 2, 3, 7, 3, 0, and 1 cases of grades I, II, IIIa, IIIb, IV, and V, respectively. During follow-up, 21 patients received repeat liver resection of recurrences (11 by laparoscopy and 10 by laparotomy). The 5-year overall survival rates were 51% as laparoscopically completed cases and 47% as intent-to-treat. The observed actuarial survival values exceeded the values expected by Fong's and BPI's score, with 10.2% and 6.7% as laparoscopically completed cases and with 3.8% and 2.4% as intent-to-treat, respectively. CONCLUSIONS: Laparoscopic resection is a favorable alternative to open liver resection for patients with colorectal liver metastases. The observed actuarial survival values after laparoscopic resection surpass the values expected by major scoring systems.

Interventional Centre, Gastrointestinal and Pediatric Surgery, Oslo University Hospital - Rikshospitalet, Oslo, Norway.

Arthritis Rheum. 2010 Dec 28. [Epub ahead of print]

The lifetime risk of adult-onset rheumatoid arthritis and other inflammatory autoimmune rheumatic diseases.

Crowson CS, Matteson EL, Myasoedova E, et al.

BACKGROUND: Understanding of the personal risks for rheumatoid arthritis (RA) and other rheumatic diseases remains poor, despite advances in knowledge of their pathogenesis, therapeutics, and clinical impact, in part because the personal lifetime risk of developing these diseases is unknown. OBJECTIVE: To estimate the lifetime risk of RA, as well as other inflammatory autoimmune rheumatic diseases, including systemic lupus erythematosus, psoriatic arthritis, polymyalgia rheumatica (PMR), giant cell arteritis, ankylosing spondylitis, and Sjögren's syndrome, and to provide an overall estimate of the risk for developing inflammatory autoimmune rheumatic disease over a lifetime. METHODS: Using the incidence rates obtained from our popu-

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Coordinated Care Reaps Significant Benefits in Patients With Depression and Diabetes or CAD

Poor disease control, adverse outcomes, and higher costs are associated with patients who have both depression and diabetes or coronary artery disease (CAD). In a study by Seattle investigators, 214 patients with poorly controlled diabetes, CAD, or both, plus concomitant depression, were randomized to receive either usual care or a structured, collaborative program that provided nurse-administered, guideline-based chronic care. Those patients in the intervention received physician-supervised nursing outreach every 2 to 3 weeks with behavioral and motivational support, medication changes, and monitoring. On the other hand, usual-care

patients were encouraged to see their physicians, who, with patient permission, received results of tests conducted as part of the study.

At 12-month follow-up, patients in the intervention group had significant reductions in glycosylated hemoglobin (HbA1c) levels (difference, 0.58%), low-density cholesterol (6.9 mg/dL), systolic blood pressure (5.1 mm Hg), and depression score. Patients in the intervention group reported significantly greater satisfaction with care and quality of life. No differences were observed in adverse events or complications. Read the study in the *New England Journal of Medicine*, December 30, 2010 edition. ■

NEW GRAFT SYSTEM APPROVED FOR AAA

The FDA has approved MedTronic's minimally invasive Endurant stent graft system for the treatment of abdominal aortic aneurysms (AAAs). The stent graft is implanted by threading it through catheters in the femoral artery. Removal of the affected segment of the aorta is not required. A single-arm study of 150 patients found that aneurysm size remained stable in 53% of patients and shrank in 47%. There was no migration or device-related endoleaks. No deaths nor post-implant aneurysm ruptures were reported through 1 year. ■

Scottish National Health Service Considers iPhone 4 and iPod Touch

The Scottish government has determined that the iPhone 4 and iPod Touch offer the best fit with the National Health Service. Even though Apple's encryption scheme has deficiencies, the National Health Service is considering an iPhone app for access to its patient administration system to make the information available at the point of care. An IT consultant for the National Health Service said that a weak implementation of disk encryption may allow attackers to view some patient data. Specifically, the 8-gigabyte iPod Touch supports no encryption mechanism, the report finds, meaning that data on the device could be accessible.

The operating systems of the iPhone 3GS, iPads, iPods larger than 8Gb, and iPhone 4 models have a hardware encryption accelerator, but the 8Gb iPod Touch does not. Apple's orientation of the i-devices causes some problems in the healthcare environment. For example, in the quick-closeout feature on the home button, the system takes a screen shot that could leave data vulnerable. However, a remote wipe function enables users to remove data using a Website. ■

CALLING ALL TECHNIES—SMARTPHONE APPS

Developed by GlaxoSmithKline and MedTrust, a free CancerTrials App enables physicians to locate cancer clinical trial using the Apple iPhone and iPad. The mobile app connects to MedTrust Online's oncology databases and helps doctors communicate with patients about experimental cancer therapies in clinical trials in their areas. The app includes information on 12 common cancers. Searches can be defined according to subject gender and age, and trial status. MedTrust plans to release versions for RIM's BlackBerry and Google's Android operating systems in the coming months.

The National Cancer Institute's *Common Terminology Criteria for Adverse Events* handbook has been developed into an app that lists common adverse events that occur in clinical trials. The tool was created by the biomedical informatics group at Children's Hospital of Philadelphia for use by iPhone- or iPod-equipped doctors and nurses who can leave the 200-page reference on the

shelf when they go on rounds.

According to the developers, the classifications have broader application in other conditions.

Smartphones are also being tailored by developers to enable doctors to run diagnostic blood tests and even view and send radiology scans, reports American Medical News. A mobile version of the medical image viewing software OsiriX and an iPhone matched the results achieved on a full-scale workstation: 124 accurate diagnoses in 125 cases.

Elsevier has developed an iPhone app for First Consult, the company's online clinical information resource that provides information about patient evaluation, diagnosis, and clinical management. The app is available free from Apple and works on the iPhone, iPad, and iPod Touch.

Stanford University Hospital is trialing an iPhone application that provides doctors with notification of lab pathology, cardiology and radiology reports, and will help doctors streamline alerts and notifications to nurses. ■

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lation-based studies of rheumatic diseases among residents of Olmsted County, Minnesota, and mortality rates from life tables for the general population, we estimated sex-specific lifetime risk of rheumatic disease. RESULTS: The lifetime risk of RA developing in US adults is 3.6% for women and 1.7% for men, and the lifetime risk of rheumatoid factor positive RA is 2.4% for women and 1.1% for men. The second most common inflammatory autoimmune rheumatic disease is PMR with a lifetime risk of 2.4% for women and 1.7% among men. The overall lifetime risk of inflammatory autoimmune rheumatic disease was 8.4% for women and 5.1% for men. CONCLUSION: One in 12 women and 1 in 20 men will develop inflammatory autoimmune rheumatic disease during their lifetime. These results can serve as useful guides in counseling patients regarding their lifetime risk of these conditions and have important implications for disease awareness campaigns.

Department of Health Sciences Research, Mayo Clinic, Mayo Clinic College of Medicine, Rochester, MN.

Diabetes Care. 2011 Jan;34(1):2-7.

Results of a successful telephonic intervention to improve diabetes control in urban adults: a randomized trial.

Walker EA, Shmukler C, Ullman R, Blanco E, Scollan-Koliopoulos M, Cohen HW.

OBJECTIVE: To compare the effectiveness of a telephonic and a print intervention over 1 year to improve diabetes control in low-income urban adults. RESEARCH DESIGN AND METHODS: A randomized trial in Spanish and English comparing a telephonic intervention implemented by health educators with a print intervention. Participants (N=526) had an A1C \geq 7.5% and were prescribed one or more oral agents. All were members of a union/employer jointly sponsored health benefit plan. Health coverage included medications. Primary outcomes were A1C and pharmacy claims data; secondary outcomes included self-report of two medication adherence measures and other self-care behaviors. RESULTS: Participants were 62% black and 23% Hispanic; 77% were foreign born, and 42% had annual family incomes <\$30 thousand. Baseline median A1C was 8.6% (interquartile range 8.0-10.0). Insulin was also prescribed for 24% of participants. The telephone group had mean \pm SE decline in A1C of 0.23 \pm 0.11% over 1 year compared with a rise of 0.13 \pm 0.13% for the print group ($P=0.04$). After adjusting for baseline A1C, sex, age, and insulin use, the difference in A1C was 0.40% (95% CI, 0.10-0.70, $P=0.009$). Change in medication

adherence measured by claims data, but not by self-report measures, was significantly associated with change in A1C ($P=0.01$). Improvement in medication adherence was associated ($P=0.005$) with the telephonic intervention, but only among those not taking insulin. No diabetes self-care activities were significantly correlated with the change in A1C. CONCLUSIONS: A 1-year tailored telephonic intervention implemented by health educators was successful in significantly, albeit modestly, improving diabetes control compared with a print intervention in a low-income, insured, minority population.

Albert Einstein College of Medicine, Bronx, NY.

BMC Neurol. 2010 Dec 30;10(1):125. [Epub ahead of print]

Mood after stroke: a case control study of biochemical, neuro-imaging and socio-economic risk factors for major depression in stroke survivors.

Chatterjee K, Fall S, Barer D.

BACKGROUND: Though vascular factors may be important in the aetiology of late-life depression, it is not clear whether they have a major effect on the risk of depression after a stroke. We investigated the relationship between physiological, biochemical, neuro-imaging and socio-economic factors and late-phase post-stroke depression in a cross-sectional case-control study. METHODS: People living at home at least 9 months after a stroke were interviewed using a structured proforma. Depression was diagnosed according to DSM-IV criteria, together with a Montgomery Asberg (MADRS) score >17. Stroke survivors of similar age and functional status but without symptoms of, or recent treatment for, depression and with MADRS score <7, were recruited as controls. RESULTS: Stroke survivors with depression were more likely than controls to have been smokers, to have had hypertension or peripheral arterial disease, and to have had more than one stroke or multiple discrete brainscan lesions. In univariate analysis they had significantly higher blood pressure, lower Mini-Mental State (MMSE) scores, higher serum homocysteine and lower folate levels, as well as more extensive white matter and basal ganglia changes on brainscan. In logistic regression, previous hypertension (OR 3.4), peripheral vascular disease (OR 4.7), number of strokes (OR 2), MMSE score (OR 0.76) and basal ganglia changes (OR 2.2), were independently associated with depression. CONCLUSION: These results suggest that patients with hypertension, hyperhomocysteinaemia and other factors associated with cerebral small vessel disease, may be more susceptible to post-stroke depression. Future intervention trials should focus on such high-risk groups. ■

Developing Expertise in Assistive Technology for Your Clients

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within existing services, such as vocational evaluation or job placement. Many rehab organizations become interested in AT when staff members recognize how it can enhance the effectiveness of other services. Each state has vocational rehab programs and projects under the Assistive Technology Act that are good sources of information. To find out more, visit www.ataporg.org/atap/projects.php. Moreover, CARE, the Commission on Accreditation of Rehabilitation Facilities, maintains standards for AT services and information that are also helpful. Visit www.carf.org.

However, there is no one best model or approach for how AT can be added to a rehab program or organization. There are strengths and limitations with any of the common approaches used. Internal AT specialist positions can be created—or services can be contracted from external resources. A combination of internal and external resources is often used. Another option is to train rehabilitation counselors to become technology resource specialists. Any approach will require awareness training about AT for all staff who deliver services.

You Are the Key

The rehabilitation counselor or case manager is usually the key point person. This individual is often the one who must recognize potential AT needs and understand where to go for additional information or assistance.

There are many issues that should be addressed in designing how AT services can be integrated in a rehabilitation program or organization. Therefore, it's important that the technology is carefully researched and adapted to meet the unique needs and resources of each patient.

One staff member will often lead efforts initially, but it's critical that the use and consideration of AT becomes

part of the organization's strategic planning. Integrating effective AT requires the involvement and support of program coordinators and administrators. This will help ensure that necessary resources are made available and that guidelines and policy questions are addressed.

Rehabilitation services usually work best when collaboration and partnering takes place. AT services, in particular, are most effective when rehab programs and organizations work together to share resources and services. Few have the staff or financial resources to deliver all of the necessary services. Even large programs frequently share resources or make referrals to other providers.

Be A Partner With Employers

Partnering with employers to better understand their problems and needs is another good way to achieve successful employment outcomes for persons with disabilities. Effective AT and accommodations have win-win benefits for everyone. This is a real advantage that rehabilitation professionals can bring to the negotiating table when working with employers.

The idea of "placing" someone with a disability with an employer that may have a job opening is outdated. This approach is gradually being replaced with long-term relationships in which rehab programs and organizations may provide training to develop the specialized skills that employees may need, offer employee assistance support, and make available resources such as disability awareness training, assistance with Americans with Disabilities Act (ADA) questions, and ergonomic and rehabilitation expertise.

This strategy is crucial because most employers know little about AT and often have many misconceptions about the cost and feasibility of accommodating workers who are disabled or become injured on the job.

AT resources and services have been available to rehab programs and organizations for many years. Some make extensive use of AT, while others do

not. But for someone with a disability who could benefit from AT or an accommodation strategy, the availability of AT services could be the factor that allows an individual to be successful in the workplace.

Someday, universally designed tools and fully accessible workplaces may eliminate much of the need for AT that so many people with disabilities now depend on to find and maintain employment. But until that happens, it's essential that rehabilitation professionals, such as counselors and case managers, vocational evaluators, and placement specialists, consider how job accommodations and AT could improve performance and enhance an individual's employability. In fact, one indicator of quality rehab programs and organizations should be whether they provide or have immediate access to AT services. **CM**

Tony Langton is a key principal with Pathfinder Associates, which specializes in training, consultation, and technical assistance services that fit unique needs. Tony has been involved in rehabilitation services for over 37 years. For the past 23 years, he has specialized in working with rehab programs and agencies with application of AT and staff development and training. For more information, contact him at tony@pathfinderassociates.net.

For information about CARF accreditation of adult day services and other aging services, please visit www.carf.org/aging or call toll-free (866) 888-1122.

CCMC Makes Role and Function Study Data Still Available

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data are encouraged to contact CCMC's National Headquarters at CCMChq@ccmcertification.org. **CM**

Patrice Sminkey, RN, is the Chief Staff Executive, of the Commission for Case Manager Certification (CCMC), the first and largest nationally accredited organization that certifies case managers (www.CCMcertification.org).

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Erratum: In the article titled “2001: What’s in Store for Case Managers This Year? Boomers, Chronic Disease, and Medical Loss Ratio,” published in the December/January 2001 issue, the following sentence should be corrected to reflect 57 million, not 57, people: About 24 million Americans have diabetes and another 57 million people are believed to have pre-diabetes.

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