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Disease Management Advisor™

Depression study

Care managers affect worker productivity

Depression intervention with care managers can improve employee productivity and save employers money, according to a study published in the September *Journal of the American Medical Association* (*JAMA*).

The study, *Telephone Screening, Outreach and Care Management for Depressed Workers and Impact on Clinical and Work Productivity Outcomes: A Randomized Controlled Trial,* was conducted by Harvard Medical School, Group Health Cooperative's Center for Health Studies, and OptumHealth Behavioral Solutions.

It was funded by the National Institute of Mental Health and, according to its authors, was the first study to examine the effect on clinical outcomes and work productivity from an employer-based depression screening, outreach, and treatment program.

The researchers reported that a systematic approach to identify and treat depression improves clinical outcomes and results in higher job retention, decreased sickness, lower work absences, and increased work productivity.

"This study shows that there's a great benefit not only to the employees but to the employer. It suggests some kind of return on investment," says one of the study's authors, **Francisca Azocar, PhD,** assistant vice president of research and evaluation for Behavioral Health Sciences at OptumHealth Behavioral Solutions in San Francisco.

> **"This study shows that there's a great benefit not only to the employees but to the employer."**
> *—Francisca Azocar, PhD*

Azocar says research has shown depression has a great effect in people's lives in general, and a workplace productivity loss estimated at $30 billion annually.

She adds employers can expect that 6% of their employees are depressed at any given time. A systematic approach to treating depression can have an effect, says Azocar.

"It's thrilling to be involved in a study that actually is able to show the value of mental health services and depression care not only for employers but for employees as well," says Azocar, adding that the results show managed care leadership that these kinds of programs are cost effective.

Another author of the study, **Philip Wang, MD,** director of The National Institute of Mental Health's Division of Services and Intervention Research in Bethesda, MD, says the recent study shows that an intervention can reduce depression symptoms for employees, improve retention of workers, and save money in the long run. (For more information about the depression program's design, see "Surveys used to measure depression" on p. 135).

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An advanced practice nursing program with a DM component has been shown to reduce the number of readmission hospital days for chronically critically ill patients.

Depression

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The high points in the clinical trial's results were:

- Intervention participants enjoyed a 2.6-hour overall work functioning improvement per week than the usual care group
- An estimated $1,800 annualized value of higher mean hours worked among intervention participants (based on the median annual salary in the U.S. civilian labor force) exceeds the $100–$400 outreach and care management costs associated with "lower-to-moderate intensity interventions used in the study"
- Depression self-report assessment scores were "significantly" better in the intervention group than the usual care group at both the six- and 12-month marks
- The percentage of participants whose symptoms improved and experienced recovery were "significantly" higher among the intervention group than the usual care group at the 12-month mark
- Intervention group participants were more likely than those in usual care to receive mental health specialty treatment, but less likely to obtain depression treatment in primary care

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Innerworkings findings

Employee Benefit News and Partnership for Workplace Mental Health's report *Innerworkings: A Look at Mental Health in Today's Workplace* surveyed more than 500 people, including HR and employee benefit managers, from companies of all sizes.

The key findings were:

- Respondents said mental illness has more effect on lost productivity, increased absenteeism, and other indirect costs than any other health issue. The top two effects were depression (31%) and back problems (14%).
- Less than one-quarter believed that managers in their companies understand the toll mental illness takes on a person and family members.
- Two-thirds said their companies do not provide managers with education about mental health issues.
- Three-quarters said that employees may not seek treatment because "they do not realize they are ill or believe they can solve the problem on their own."
- Twelve percent of the companies surveyed encourage mental illness screening, whereas 70% suggest mammograms and blood pressure monitoring, nearly half recommend weight management, and one-quarter promote bone density tests.
- Eighty percent said that "shame and stigma" may still be associated with mental illness diagnosis.

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Surveys used to measure depression

The study, *Telephone Screening, Outreach and Care Management for Depressed Workers and Impact on Clinical and Work Productivity Outcomes: A Randomized Controlled Trial,* included a randomized controlled trial that surveyed 113,843 employees by using the World Health Organization Health and Productivity Questionnaire (HPQ). Those surveyed included a variety of workers, such as bankers, lawyers, and truck drivers from 16 large companies.

Those who met the criteria for depression via HPQ were contacted by care managers, who conducted further screening using the Quick Inventory of Depression Symptoms Self-Report (QIDS-SR) assessment. A total of 35,169 completed at least one question, and 2,358 (7.7%) were listed as possibly being depressed. A total of 1,422 consented to baseline eligibility assessments. (Employees with lifetime bipolar disorder, substance disorder, recent mental health specialty care, or suicidality were excluded. They were still contacted about the depression findings and asked to call the managed care organization's number or talk to their doctors.) A total of 604 employees were randomized into an intervention group or usual care group.

The program included a telephonic outreach and care management program. Care managers, who were master's degree–level mental health clinicians employed by OptumHealth Behavioral Solutions, contacted those listed as depressed and encouraged them to enter in-person psychotherapy, evaluated patient medication, and provided referral information.

Those who declined the outpatient therapy and/or antidepressant medication were offered a structured telephone cognitive behavioral psychotherapy and were contacted by care managers weekly or biweekly depending on the severity of their depression.

One of the study's authors, **Francisca Azocar, PhD,** assistant vice president of research and evaluation for Behavioral Health Sciences at OptumHealth Behavioral Solutions in San Francisco, says a large part of the care managers' work was problem solving, such as helping a patient with medication compliance. "The care advocate intervention is all about empowering the member to talk with the doctor," says Azocar.

Those in the intervention group who declined in-person treatment and still experienced "significant depressive symptoms" after two months were offered an eight-session cognitive behavioral psychotherapy program.

"Sessions included assessment of motivation for treatment and motivational enhancement exercises; focus on increasing pleasant and rewarding activities; identifying, challenging, and distancing from negative thoughts; and creating a personal self-care plan covering medication use, self-monitoring, and self-management skills," according to the report.

After the initial conversation, all intervention participants were mailed a psychoeducational workbook that emphasized "behavioral activation, identifying and challenging negative thoughts, and developing long-term self-care plans," according to the study.

Azocar says many preferred the telephonic psychotherapy because of the societal stigma still associated with depression. Study author **Philip Wang, MD,** director of The National Institute of Mental Health's Division of Services and Intervention Research in Bethesda, MD, says that stigma could negatively affect an employee's workplace status—either actual or perceived. He says the in-person treatment is more time-consuming because patients have to set aside time and travel to a doctor's office. The care managers called during after-work hours so it didn't affect the patients' workday.

Alan A. Axelson, MD, cochair of the Partnership for Workplace Mental Health in Arlington, VA, says a health plan does most of the work in a program such as the one developed in this study.

"It doesn't take much from the employer once they decide to do it and get employees to do the health risk assessment surveys," says Axelson. He adds that the study's proactive approach of reaching out to depressed employees is the kind of out-of-the-box thinking needed.

"We need to try different things," says Axelson. "You can generate action by the health risk assessment to encourage people to deal with their depression when it's mild to moderate rather than wait for it to become severe."

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Depression

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Azocar says the study found employees were more productive in the intervention group. "What that translated to is about two more weeks of work a year for those in the intervention group," says Azocar.

Wang was surprised that many in the intervention group chose telephonic therapy rather than the in-person option. He says the intervention was designed to increase people's use of in-person treatment, but it did not substantially affect the number of people getting in-person therapy. "The consequence of that is that the intervention will ultimately be less expensive," says Wang. "Most of the increased contacts were with telephone care managers, so it was much less expensive."

The revelation that the intervention group was more likely to receive mental healthcare from a specialist rather than a PCP pleased Azocar.

"What the research has shown is that treatment of depression in primary care is less than adequate. In part, it's because [PCPs] are not adequately trained [in depression]. They tend to underdiagnose, underrecognize, and undertreat depression," says Azocar. "In addition, PCPs have too many things to do in a short amount of time."

Human capital investments

Wang says the actual ROI is unknown, but further research is planned to take into account duration of improvements, disability payments, overall healthcare expenditures, and hiring and training costs. Wang says the magnitude of the benefits observed suggest that a formal analysis will show the depression intervention program was cost-effective because the program primarily utilized care managers rather than office visits.

The study's authors wrote that employers should view depression intervention programs as "an opportunity to invest in improving the productive capacity of work forces [referred to by employers as 'human capital investments'] than as workplace costs."

Who benefits most?

Azocar says a similar depression program can help anyone and could especially assist those working blue-collar jobs who may struggle with societal stigmas associated with depression. "The study shows that it worked with all different kinds of employees," says Azocar.

Wang says smaller employers could potentially gain from a depression program. For example, one depressed employee in a small organization might have a greater effect than would a depressed person working in a large

Promote employee assistance programs regularly

Employee assistance programs are powerful tools in the fight against depression in the workplace, but they are underutilized.

Alan A. Axelson, MD, cochair of the Partnership for Workplace Mental Health in Arlington, VA, likens the situation to someone who purchases software, loads it onto a computer, and then rarely uses it because he or she can't understand the program.

Companies must educate their work force about employee assistance programs so that they are used regularly. That's one way to both educate employees and remove barriers to mental health wellness, says Axelson.

Workplace depression programs allow businesses to intervene in a constructive way rather than letting the issue build into a disciplinary problem. "When that really works, it saves a lot of money, but it takes some consistent effort," says Axelson.

William L. Bruning, president of the Mid-America Coalition on Health Care in Kansas City, MO, says employers are not routinely training management about depression. Immediate supervisors are a "frontline point of engagement for a depressed" employee. "We figured out pretty quickly that we need to help supervisors at this level to understand what they were encountering, what they needed to do going about addressing it, and give them some level of comfort to open dialogue to help the employee address these issues that had such an impact on the work unit."

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corporation. Depression treatment could especially help those in lofty positions, such as CEOs. Having a CEO dealing with depression can affect not only one department but a whole company. That said, Wang warns companies to not just reach out to those at the top of the pyramid.

"That is one of the dangers in this—that you only cherry-pick those who you will get the most bang for your buck," says Wang. "This looks like it will be beneficial over a wide range of workers."

Wang is hopeful that employers will learn from the study about how depression intervention programs can help employee health and the bottom line. "I think there's growing recognition [of the issue of work force depression]," says Wang. "We hope that [the results] will be used by employers in their decision-making. We'll have to see how impactful they are."

Wang says study authors will follow the intervention group for 18 months.

The authors are also planning a formal cost-benefit analysis in which they will look within the job sectors and run the numbers regarding worker replacement and turnover rate. ■

Problem understood, but programs lacking

Employee benefit managers understand the effect depression has on productivity and the bottom line. In fact, mental health illness is among the most costly health issues for employers. But many of those same managers have not created programs that target depression, according to a recent study.

"Though most employers understand depression's impact, there is still a disconnect when it comes time to create programs," says **Francisca Azocar, PhD,** assistant vice president of research and evaluation for Behavioral Health Sciences at OptumHealth Behavioral Solutions in San Francisco.

Employee Benefit News and the Partnership for Workplace Mental Health released a study in May, *Innerworkings: A Look at Mental Health in Today's Workplace,* about depression's effect on the work force and employers' response to the issue.

The survey of more than 500 people found most employers understand the problems associated with depression but have not implemented benefits and education programs to tackle the issue.

"If employers are going to be concerned about their work force at all, they need to be concerned about the mental health of their work force as they are concerned about the physical health of their work force," says **Alan A. Axelson, MD,** cochair of the Partnership for Workplace Mental Health in Arlington, VA.

One barrier in creating depression intervention programs is that employers are afraid of violating employee privacy. "Employers are very loath to get into the personal lives of their employees," says **William L. Bruning,** president of the Mid-America Coalition on Health Care in Kansas City, MO. "HIPAA has exacerbated that."

Philip Wang, MD, director of The National Institute of Mental Health's Division of Services and Intervention Research in Bethesda, MD, says employers realize the detrimental results of workplace depression: absenteeism, presenteeism, accidents, and lost productivity, but they are not necessarily sold on the cost savings involved with depression programs.

"The question in employers' minds is, 'Can you do anything about it? Yes, it's costly to me, but can you show you can actually recover those [costs] or not?' " says Wang.

In order to spark employers to tackle depression costs, studies will need to shed light on whether interventions can have a positive monetary benefit. "They're businesses at the end of the day, and they invest their resources in things that are going to positively impact productivity and the bottom line," says Wang.

One way for employers to understand the effect depression is having on productivity is through the Partnership for Workplace Mental Health's calculator. The software program allows businesses to input their work force's characteristics, including age, sex, and number of employees. The calculator analyzes those numbers and develops depression's monetary impact, taking into account absenteeism, disability, presenteeism, and prescription costs.

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Problem understood, but programs lacking (cont.)

The Partnership for Workplace Mental Health is also developing a page on its Web site (*www.workplacementalhealth.org*) that will collect employer depression programs into a database.

Mary Claire Leftwich, program coordinator at the Partnership for Workplace Mental Health, says the free Web-based page was slated to launch in mid-November. The Employer Innovations Online program listings will include location and size of company, depression issues, why solutions were needed, and program specifics.

"Business is necessarily driven by the bottom line, so we, right out of the gate, highlight the return on investment," says Leftwich.

When **Disease Management Advisor** spoke to Leftwich at the end of October, she said the Web-based tool included 25 programs, encompassing small to large companies from many parts of the country.

Axelson is hopeful employers will utilize the new Web resource when creating depression programs and other initiatives to address mental health.

"An HR person can go to their bosses and say, 'This is what they are doing at JPMorgan Chase or Pitney Bowes. They've got a problem similar to what we have, this is the cost, and this was the outcome,' " says Axelson.

Another organization tackling workplace depression is the Mid-America Coalition on Health Care. Its focus began in 1999, the same time period during which reports that recognized depression's hidden costs for absenteeism, productivity, and disability were released. The depression initiation, which included 15 employers, representing more than 140,000 lives, was created to review healthcare costs in terms of productivity and employee health.

Health plans urged the coalition to tackle depression, which the managed care companies viewed as the number one healthcare cost because of prescription costs, comorbid disease, and presenteeism, says Bruning.

"We put these emerging concepts in front of [employers]. It was remarkable they got it. There is something very intuitive about depression's impact on the workplace that the employers usually get," says Bruning.

Bruning compares depression to obesity in terms of society's views about the health issues. People once thought depressed and obese people only needed to "pull themselves up by their bootstraps" and turn their lives around. Now, society understands the effect of both diseases and that there is more than intestinal fortitude required to fight the ailments.

The Mid-America Coalition on Health Care is working to educate not only employers but the work force in general. After five years of work conducted by 14 employers, its Web site (*www.machc.org*) includes depression resources for medical professionals, work-site supervisors, and employees.

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Alternative to high-cost plans

Value-based option improves medication compliance

Passing on costs to consumers may help the bottom line in the short term, but a growing number of healthcare experts are concerned that higher copays only create more costs in the long run.

According to **Gregory B. Steinberg, MD,** chief medical officer at ActiveHealth Management in New York City, higher copays reduce medication compliance, which can lead to adverse events and ultimately increased healthcare costs.

A growing number of healthcare experts are offering an alternative to high-cost plans—value-based insurance design (VBID).

Supporters say VBIDs, which are also called evidence-based benefits and value-based benefit design, will improve medication compliance and tackle the issue of unnecessary prescriptions, hospital visits, and procedures.

The idea behind VBIDs is to replace the current system with one that is evidence-based. VBIDs reduce copay costs for medications and tests that are most beneficial and increase copays for tests and drugs that are not as worthwhile and sometimes unneeded.

Steinberg promotes creating a VBID program that "accurately identifies those individuals who really would benefit from these evidence-based therapies."

The concept is to tier pharmaceuticals so that those who need lifesaving prescriptions for ailments such as heart disease, diabetes, and hypertension will pay less or nothing.

Meanwhile, services or medications that are not as clinically beneficial will cost consumers more. "If it is actually deployed properly, I think the impact on healthcare could be profound," says Steinberg.

The high-deductible/high-copay options implemented by at least 20% of private health insurance providers are actually creating barriers to medication compliance. Placing those cost barriers on medication means healthcare spends more money to care for sick patients rather than on preventive care, says Steinberg.

Andrew Webber, president and CEO of the National Business Coalition on Health in Washington, DC, says his organization has been promoting the VBID concept to members as an alternative to high-deductible/high-copay plans. Webber calls high-deductible plans a "pretty blunt instrument."

VBID, on the other hand, "marries economic incentives at the consumer level together with matching benefit design to the best science and evidence," says Webber. "Consumers should pay more for medical services when there is not strong evidence of return." Webber says he favors a plan to tier providers based on performance and effectiveness. "We think that as we begin to shift costs onto individual consumers, that [VBIDs] would just be a much more thoughtful way to engage consumers in understanding that there are consequences for their demand for healthcare services, but at the same time recognize that the last thing we want to do is create economic barriers for people getting services that they really need."

> **"While everyone agrees that an operation or a drug that may save your life is more important than a drug that makes your hair grow back, the status quo of benefit design does not distinguish this variability at all."**
>
> *—A. Mark Fendrick, MD*

If people are not taking their medications, you can expect worse outcomes and more costs via hospitalizations and ER visits. Steinberg says studies show that decreased compliance is associated with a "dramatic increase in mortality," increased ER visits, hospital utilization for diabetes, hypercholesterolemia, hypertension, and chronic heart failure.

Steinberg highlights the findings from Pitney Bowes, which is an early example of a VBID design that was clinically focused on diabetes and asthma and did not require any decision support. The organization lowered copays

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Alternatives

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for diabetes and asthma medications, and preliminary findings showed:

- Adherence improved for asthma and diabetes patients
- The annual cost of care for both groups decreased
- Hospital admissions and ER visits declined for asthma patients but remained the same for those with diabetes

Steinberg says there is also multiyear experience with a more sophisticated VBID design that "uses decision support algorithms to identify individuals who, based on the medical literature, would benefit from specific medications," such as lipid-lowering drugs, asthma controller drugs, diabetes medications, and beta-blockers.

The system identifies those who are already appropriately on therapy as well as individuals who are not but should be and notifies both the member and his or her doctor that the member is entitled to a reduced copay, according to Steinberg.

"Preliminary analysis indicates that this VBID design, when compared to an appropriately matched control group, increases overall compliance with these medications. Preliminary analysis of payer cost data suggests that although the cost of medications, as expected, increases with this program, overall costs do not change significantly, presumably due to a beneficial effect on other medical costs as a result of improved medication compliance," says Steinberg.

A. Mark Fendrick, MD, codirector of the University of Michigan's Center for Value-Based Insurance Design, points to results of a Caremark study released last March. The

Take these steps before starting a VBID program

Change is never an easy thing, especially when you're talking about moving into new territory few have tried and that can affect a company's employee relations and bottom line.

For those considering whether to create value-based insurance design (VBID) programs, there are avenues to research before implementing the plans. **A. Mark Fendrick, MD,** codirector of the University of Michigan's Center for Value-Based Insurance Design, suggests those exploring the option ask themselves the following questions:

- Do we understand our employee population? Are our employees being properly diagnosed and treated? Are we properly motivating employees to improve and maintain their health?
- Are we holding providers (health plans and pharmacy benefit managers) accountable? How are our health benefits affecting total costs, both directly and indirectly? What is the ROI on our benefit design decisions?
- Are we able to make informed decisions? Do we have integrated data (medical, pharmacy, lab, disability, and productivity) to help us assess direct and indirect health-related costs?
- What are our employee medication-adherence rates?
- What studies were reviewed to support benefit-coverage decisions?
- Will our current benefit design positively affect the long-term health and productivity of our employees?

Those questions should help an employer figure out whether to give VBID a try and what kind of VBID program to implement. For instance, should you reduce or eliminate copays on specific patients or on specific medications, tests, and procedures? The former is more complicated because the system will have to identify individuals rather than specific medications, tests, and procedures.

For those more interested in savings and less concerned about the possible employee backlash, **Gregory B. Steinberg, MD,** chief medical officer at ActiveHealth Management in New York City, suggests a "tighter system because it's likely to result in more net savings to the payer." A tighter system would evaluate each consumer's health situation.

For instance, two employees could purchase the same

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results showed that patients taking asthma, diabetes, hypertension, or hyperlipidemia drugs who didn't pay for copays were more likely to adhere to their medication than patients in a traditional three-tier prescription plan and a consumer-driven health plan (CDHP). Fendrick says the results show that lower copays improve medication adherence. The tiered pharmacy copay system "does not distinguish between those services that produce a greater amount of health improvements and those that don't," according to Fendrick.

"While everyone agrees that an operation or a drug that may save your life is more important than a drug that makes your hair grow back, the status quo of benefit design does not distinguish this variability at all," says Fendrick, adding that without a change "the entire system is likely to fall on itself."

Although there have been preliminary studies, such as Caremark's findings, and anecdotal reports from the companies that have taken the lead on VBIDs, Steinberg is quick to point out that VBIDs still need more research to identify "optimal program components for various populations."

Pharmacy costs

Prescription drug costs have not risen at the same rate as other segments of healthcare because of greater use of generic drugs and low-cost pharmacies, such as Wal-Mart. But Steinberg warns against looking only at pharmacy costs.

"What counts is the total medical costs spent . . . The key point is that looking at just the drug costs is a myopic view of the overall issue," says Steinberg.

When reviewing costs, Webber says employers should wait two or three years to see whether VBIDs are affecting hospitalizations, absenteeism, disability insur-

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drug, but one may have a lower copay because of health status. A broader program establishes a lower copay for specific drugs. At that point, patients are paying the same amount regardless of the need.

Steinberg says payers interested in a tighter value-based program will need two things:

1. A decision support system to identify whether the right people are chosen
2. The infrastructure that ties into a pharmacy benefits manager (PBM) to adjudicate and administer the program after the individuals are identified

"You need to have a tie-in of the PBM so when the member goes to the pharmacy, there is an auto-adjudication process that occurs at the point of sale at the pharmacy that says, 'Yes, this member is entitled to the drug and eligible to receive the drug at a reduced copay,' " says Steinberg.

After the plan has been formed, the employer has to implement an inclusive education program with employees. Some employees may bristle at the thought they will pay more for the same medication because they do not need it as badly as people with life-threatening conditions. Employers must communicate with employees about the differences. Promoting the program accurately is a key component to establishing a beneficial program that receives the most employee support, says Steinberg.

Creating value-based programs changes the way consumers look at healthcare. The current system has caused employees to expect employers will pay for almost any health service, creating an overutilization of healthcare. **Andrew Webber,** president and CEO of the National Business Coalition on Health in Washington, DC, says employers have no one to blame but themselves. "I think employers are to blame for creating a consumer-entitled mentality through more traditional insurance design where insurance pays for most everything and there are no economic consequences for individual demand for services," says Webber.

Once VBID is put into place, Steinberg says each part of the healthcare structure supports the idea: Patients enjoy the lower cost, doctors appreciate the medication compliance, employers want healthier employees, and health plans see the long-term cost-savings benefit.

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Alternatives

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ance, and workers compensation. With those numbers in hand, employers can find the ROI.

Webber says there is a small number of pioneering employers and health plans that are studying VBID. They are performing the initial work, including research, and learning lessons and best practice models that could be copied by others.

Webber says it's too early to gauge the specific ROI, but he is confident that the ultimate results will show cost savings in the long-term. Regardless of the ROI, a greater emphasis on evidence-based programs are needed, he says.

"We are the purchaser; we are the folks writing the bills at the end of the day. We have created the wrong set of incentives for providers; we created the wrong set of incentives for our consumers and our work force and it's created a perfect storm of cost escalation in healthcare. We've got to change those dynamics," Webber says. ■

DM program cuts readmission days

Nursing study focuses on at-risk patients

An advanced practice nursing program with a DM component has been shown to reduce the number of readmission hospital days for chronically critically ill patients, according to a recent study released by Case Western Reserve University in the *American Journal of Critical Care*.

The idea behind the program, which was funded by the National Institute of Nursing Research (one of the 27 Institutes and Centers at the National Institutes of Health) is to allow an individual advanced practice nurse (APN) to communicate with caregivers, physicians, and facilities; follow a chronically critically ill patient through the healthcare system; and serve as an advocate for the patient and caregiver.

"The number one cost of caring for these patients once they are discharged from their initial stay was readmission to the hospital," says **Sara L. Douglas, RN, PhD,** who authored the study with Barbara J. Daly, RN, PhD, FAAN, at Case Western Reserve University in Cleveland. "If we can do something that can in some way reduce the cost of readmission we would have a significant impact."

The study was the investigators' third exploring the chronically critically ill patient population. The authors sought to determine whether the high costs of care and poor outcomes for patients who require prolonged mechanical ventilation and ICU stays could benefit from a posthospital DM program. These patients are often some of the most complicated and costly cases in a healthcare system.

Douglas says chronically critically ill patients and their caregivers have specific needs that are often not met.

"We thought maybe we could apply some lessons learned from our in-hospital intervention study plus what we know about disease management programs and apply it to this patient population postdischarge," says Douglas.

In what the study's authors say is the first outpatient DM intervention in chronically critically ill patients with multiple comorbid conditions, Case Western Reserve University researchers found that establishing an advanced practice nursing program with a DM component for chronically critically ill patients reduces the number of readmission days for those patients readmitted to the hospital—though it didn't provide overall cost savings for all patients who stayed in the ICU for prolonged periods of time. "We really felt that the communication and coordination activities of the advanced practice nurses were instrumental factors in reducing days of readmission," says Douglas.

Clareen Wiencek, RN, ANP, along with Helen Foley, RN, took part as one of the intervention nurses. She says the study reinforced the need for communication to help caregivers and patients travel through a

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"fragmented" healthcare system, especially when chronic critical illness and prolonged dependency on technology and nursing care are involved.

The study found the DM program meant on average 5.77 fewer hospital days per patient following hospital readmission, a savings of nearly $20,000 per patient when using a mean hospital charge of $3,415 per day. If the savings are spread out over all 93 patients in the study who were readmitted, the total savings would have been more than $1.8 million, according to the study authors.

The cost of the program amounted to $486,442, which accounted for the two APNs and 25% of the project director's salary and benefits.

The study included 335 intensive care patients who received more than three days of mechanical ventilation at University Hospitals of Cleveland. The majority of those who took part were older, female, and white.

The stress level is great for both high-risk patients and their caregivers, and Douglas says the reason some caregivers declined the service was because many felt overwhelmed and didn't want any further burden. "We provided a great deal of family support because so many times the patients weren't able to interact or act as their own decision-maker. Thus, we helped the patients' outcomes through the families," says Wiencek.

The healthcare maze is often difficult to steer through for a patient or caregiver, which is complicated when a high-risk patient is involved. Many of the caregivers involved in the experimental group were elderly and found it difficult to handle care of a loved one.

"Families reported on a consistent basis the strong feeling of support when having advanced practice nurses advocate for them," says Douglas.

"We helped the family member navigate the healthcare system. We were kind of their guide and helped them with their appointments, sometimes going with them to their physician appointments, reminded them what they had to talk about, and sometimes even helped them arrange transportation because getting to appointments was often an issue," says Wiencek.

For those who agreed to take part, APNs provided an intervention that focused on case management and interdisciplinary communication for eight weeks after hospital discharge regardless of where the patient was residing (home, nursing home, etc.).

The nurse placed in charge of the individual patient provided guidance during the transition period between the hospital and postdischarge locations (80% of the experimental group and 73% of the control group were discharged to an extended care facility).

Those who were able to go home directly were younger and experienced fewer days of mechanical ventilation and fewer comorbid conditions before admission. Of the five independent variables included as covariates, the authors found the three significant contributions to death in the study were age, duration of mechanical ventilation, and diabetes.

For patients and caregivers, the nurses served as a healthcare expert, provided clinical experience in the care and management of the individual patients, and assisted as an advocate for the patient and caregiver.

Nurses made contact with the patients and their caregivers during hospitalization and helped prepare them for the next steps. They completed a thorough patient care summary that was forwarded to the next location. The summary provided details about the patient's condition,

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Patient criteria

To take part in the Case Western Reserve University advanced practice nursing program, the following was needed:

- More than three days of mechanical ventilation at a university medical center
- English comprehension
- No ventilator dependency before the index hospitalization
- Discharge location within 80 miles of the study site (for those patients who lived less than 30 miles away, nurses made personal visits; those who lived between 30–80 miles away were contacted by telephone)

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Nurse study

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stay in the ICU, medications, treatments, and goals and preferences.

Wiencek says discharge summaries, though sometimes written or dictated, are not always forwarded to the discharge facility in a timely manner and don't provide the next facility with enough detailed information. This lack of timely information during high-risk transitions could place a chronically critically patient at risk, says Wiencek.

"By including details about the in-hospital stay in the patient care summary, we tried to give more richness and fullness than just the discharge orders would give," says Wiencek.

Within 24 hours from hospital discharge, the APNs visited the patients in their new location. Douglas says this comforted the family and provided information about the patient's health status to the care leaders in the new location. The nurses checked in at least once per week with the patients and caregivers.

"To see someone who you have seen in the hospital who knew your family member to show up in the nursing home was very comforting on that level," says Douglas.

Having 30 years of experience as a critical care nurse and knowing the healthcare system for chronically critically ill patients allowed Wiencek to help families and caregivers navigate a complicated and often intimidating system.

"Most families of the chronically ill need help, especially if the patient has a prolonged hospitalization and continued dependence on nursing and medical care. Family caregivers relied on us as someone who they could call for support, for nursing advice, and for problem solving. Many people don't have that, so you have people out there floundering on their own. When they flounder, it has the potential to have a bad outcome for the patient," says Wiencek.

The majority of physicians and facilities accepted the APNs' assistance in the patients' care, but Wiencek says others were not receptive. It was possible, Wiencek says, that the facilities did not want the nurse case managers coming to their facility because they felt the program was too time-consuming, did not want to take part in a research project, or feared the nurses were there to keep tabs on them.

"If the receiving facility or physician could see that we could help them, we were not there to be a burden, and that we were there to help the care of the patient, then they really bought into it," she says.

No difference

Although the authors found the program caused fewer hospital days via readmission, the study showed: nonsignificant differences between the experimental and control groups in the areas of survival rates after discharge, the patients' health-related quality of life, and number of readmissions (29% of the experimental group and 24% of the control group were readmitted in the study period).

Douglas says chronically critically ill patients are complicated cases, and because of this, the authors were not able to see any cost savings for patients who stayed in the ICU for prolonged periods of time. Plus, the authors question the length of the study period (two months). In retrospect, Douglas believes the time frame should have been longer to better analyze the effect the program had in patient care in the long run.

Third report

The report was Douglas and Daly's third study on critically ill patients. Douglas says that their other intervention studies examined the effect of a special care unit on in-hospital outcomes from 1991 to 1994, and the postdischarge outcomes and resource use of long-term ventilators from 1996 to 1999. The university received funding for the DM study from the National Institute of Nursing Research in 2000, and it performed the most recent study until 2004.

"We are doing further investigation to see if there are subgroups of chronically critically ill that benefited most from intervention and may consider examining an intervention that targets specific subgroups of chronically critically ill patients and their caregivers," says Douglas. ■

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