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HOSPITAL CASE MANAGEMENT™

the monthly update on hospital-based care planning and critical paths

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States put case managers' clinical qualifications on trial

New Hampshire reverses denials, but other states likely to follow with their own suspensions

New Hampshire may have been the first state to take a hard line on renewing the RN licenses of hospital case managers, but it's not likely to be the last, experts warn.

The New Hampshire controversy began late last year, when the state board of nursing in Concord denied the renewal applications of two nurse case managers in what it claimed was a quality control measure designed to protect health care consumers. **(See "New Hampshire CMs denied RN license renewal," *Hospital Case Management*, October 1999, p. 173.)** Recently, the nurse case managers, who work for Blue Cross Blue Shield of New Hampshire in Manchester, successfully appealed the ruling and won relicensure. But some say the larger battle — over whether case managers' duties are sufficiently clinical to warrant the RN credential — is just beginning.

Sandra L. Lowery, BSN, CRRN, CCM, president-elect of the Little Rock, AR-based Case Management Society of America, says that even though the New Hampshire decision was reversed, "it remains the policy of that state's board that if a case manager's job description can be performed by someone other than a nurse, it is subject to not meeting the board's eligibility requirement. No one had brought a problem of relicensure to our attention until last fall. I have a concern that other states might follow New Hampshire's lead," says Lowery.

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Critical Path Network

COMING IN FUTURE ISSUES

■ A new General Accounting Office study confirms that, across the country, nursing homes are continuing to refuse admission to high-cost patients, driving up hospital lengths of stay

■ Actuarial firm Milliman & Robertson is in hot water again, this time with physicians who claim its standards have little scientific basis

■ Why don't nurses and physicians follow clinical practice guidelines? Reasons include lack of these elements: awareness, familiarity, agreement, outcome expectancy

■ Every month, critical pathways you can use and adapt. Coming up: Bed sores, congestive heart failure, and more

Indeed, **Susan Woodward**, director of communications for the National Council of State Boards of Nursing in Chicago, says New Hampshire's minimal practice stance is not unique. "A minimal practice standard for RN license renewal is required in 21 of our 61 jurisdictions," Woodward notes. Delaware, Maryland, and New Mexico require that an RN be actively involved in the practice of her profession for 1,000 hours in the past five years; Guam requires four months in the past two years; and North Dakota requires 500 hours in the past five years.

But Lowery claims that, by themselves, minimum practice requirements are not the problem. "Other states do have the requirement for work experience. That is not the point of contention. The problem is New Hampshire's criteria for eligibility for work experience, and that is unique: The state board's policy is that if a case manager's job description can be performed by someone other than a nurse, it is subject to not meeting the board's eligibility requirement."

The New Hampshire board does not see any problem with a case manager holding a nonclinical position as long as she uses her nursing knowledge and experience to perform the work. But it does consider it a problem if the job that the case manager uses for her work experience eligibility can be performed by non-nursing personnel.

Toni Cesta, PhD, RN, director of case management at Saint Vincents Hospital and Medical Center in New York City, says part of the problem is that case management as a field still isn't well-defined. There's a wide variation today among people who call themselves case managers and among the duties they're required to perform. "There's a trend toward a clinical focus in case management, but it's not across the board," Cesta says. "We can't generalize on how much of a clinical background a case manager should have. It depends on where she works."

What makes the issue of licensure so difficult is that case management is a multidisciplinary practice by design, Lowery maintains. "Some hospital case management positions can be performed by social workers, and that could be a problem. There could be problems lying in wait for nurse case managers who are working in jobs that could be performed by someone other than a nurse. The issue is not solved."

L. Greg Cunningham, president of the American Case Management Association (ACMA) in Little Rock, AR, says his organization supports "an integrated case management model which uses

New Hampshire denials: What really happened?

Board maintains strict interpretation

When two New Hampshire case managers were denied their RN license renewals last year, they immediately notified **Sandra L. Lowery**, BSN, CRRN, CCM, president-elect of the Case Management Society of America in Little Rock, AR. "My concern was not only for the two case managers," she says, "but also for the potential implications of the board's decision. I'm delighted now that their licenses have been renewed, but I want a clarification of the issue [to] determine the intent and basis for the board's action." Lowery is a practicing independent case manager in the New England states as well as a case management consultant in Francestown, NH.

The Blue Cross Blue Shield case managers were denied relicensure because, in the eyes of the licensing board, their work experience did not meet eligibility requirements. The two case managers' position was that they were using their nursing expertise in their work, but the board stated that a nurse case manager does not meet its eligibility requirements if she's performing a job that can be done by anyone other than an RN.

The case managers appealed and were able to show that their job description does require the services of an RN, they do use RN expertise and skills, and their job cannot be performed by anyone but an RN. As a result of their appeal, they were issued renewals.

The New Hampshire State Board of Nursing's stance on renewing licenses of RNs engaged in certain types of case management positions has raised some eyebrows. **Doris Nuttelman**, RN, EdD, executive director of the Board in Concord, explains that the Board established its minimum practice requirement years ago: An RN must be actively involved in the practice of nursing for 900 hours within the four years immediately prior to the date of renewal application for the board to renew her license. "How else do you know the person is competent to practice?" she asks. "There used to be elderly people in nursing homes who were cognitively impaired, and they still had their RNs."

Put simply, Nuttelman says, if RNs haven't been practicing nursing, their licenses shouldn't be renewed. "And some case management jobs don't require active nursing," says Nuttelman. It is the board's position that, if there are people from other disciplines working in the same job description, that is not exclusively nursing practice.

"The New Hampshire Board has held that position for a long time," Nuttelman says, "and not only for case managers." The policy applies to any nurse working under a job description that doesn't require her to be an RN, and also, for example, to nurse practitioners who go into nursing education. "If she is not practicing as a nurse practitioner, we don't renew her nurse practitioner license."

Nuttelman admits that this is a strict interpretation. "If you have a nutritionist, a social worker, a pharmacist, and a nurse all working under the same job description — case management — is that the practice of nutrition, social work, pharmacy, or nursing? It depends on the setting." If you hire a case manager, and you want her for her expertise in nursing, then you'd require that she be a RN, she explains. If the patients need social services, you'd hire a social worker. "A social worker is not a nurse, is not a nutritionist, is not a pharmacist," she says.

For more information, contact Doris Nuttelman, RN, EdD, executive director, New Hampshire State Board of Nursing, Concord, NH. Telephone: (603) 271-2323. ■

professional collaboration across disciplines. However, this does not mean that everyone is or should be performing the same job functions. The intent of a collaborative model is the ability to leverage the skill sets of multiple disciplines. In acute care case management, these disciplines are primarily registered nurses and social workers. ACMA's board can also attest that RNs who are performing in an 'effective' model of case management cannot function without using their clinical skills and therefore would adequately meet active clinical practice requirements."

Even the issue of what credentials case managers should hold is up in the air at many institutions. Cesta points out that some facilities hire baccalaureate-prepared case managers regardless

of what their degree is in, while others hire only nurse practitioners. Cesta advocates having a master's of nursing in case management. Currently, about 30 programs in the country offer this degree. "But you can get a job without a master's," says Cesta. "There's a trend toward employers looking for some kind of certification in case management, but if you have an advanced degree, you usually don't need certification." Conversely, if you don't have an advanced degree, certification is probably necessary.

Cesta is a commissioner for the Commission for Case Manager Certification in Rolling Meadows, IL, which offers the Certified Case Manager (CCM) credential. You don't need an RN to get a CCM certificate — you can be a social worker. The case management certification offered by the American Nurses Association is a baccalaureate-level credential, and you don't need a master's, but you do have to have an RN, as you do for any ANA certification.

"There's such a lack of standardization across the industry that it's very difficult," Cesta explains. "You can sign up for a three-day class, at the end of which you get a certificate from a number of companies. That certificate should not be confused with certification. A certificate like that is by no means as robust as certification."

Darlene Saler, RN, acting director of case management at Dartmouth-Hitchcock Medical Center in Lebanon, NH, says some of her 11 case managers are RNs and some are social workers, depending on the patients they manage. The social workers work with patients with psychosocial issues; the RNs handle patients with clinical issues, and they do disease management.

"Our response to the relicensing issue is that we are going to revise our job descriptions and be very clear on the divisions between social worker and RN. We're going to have to be very clear on the differences," Saler explains. She says at first she didn't understand why New Hampshire's nursing board made its initial decision, but now she does. "At first I was outraged, but now that I understand their position, it is reasonable. They are looking closely at what people are doing and making sure it's what they should be doing. The nursing board is making sure the skills required of a nurse are unique skills that nobody else can do. It's a reasonable stance," she says.

Saler says the nursing board is being asked more and more about what constitutes nursing care. It is dealing with several related issues right now and trying to come up with fair solutions. "For example," says Saler, "what do you do with a nurse case manager who is taking care of a family member in her home? She's not working outside the home, but technically she's using her nursing skills. Does she qualify for relicensure? Are the unique skills of the nurse required for that job? Can anyone else do that? Can those hours spent working at home taking care of a family member count toward the minimum practice eligibility requirement? That's what they are struggling with."

Saler says that from now on when she hires people as case managers, she will make clear what skills those individuals need for the job. "When I hire my case managers, before I even post the position, I will know whether I need a nurse or a social worker, based on the population she will be asked to manage. I need to fix my job descriptions to reflect that I'm hiring different people for different jobs."

Will other states follow New Hampshire's lead? Saler says she has talked with case managers working for health plans in neighboring Vermont. "They are beginning to think about being careful about asking a person to do particular tasks that you would ask a nurse to do."

Choose jobs with relicensure in mind

Jackie Soroko, RN, a nurse case manager at Greenbriar Terrace Healthcare in Nashua, NH, has some advice: No matter where you do your nursing case management — in a hospital or for an insurance company — you're always assessing the patient, you're always formulating and putting a care plan into action, you're always monitoring that care plan, and you're always reevaluating it on a regular basis. Those are all nursing functions. If you want to qualify for RN relicensure, make sure you do those functions in the job you take.

"If you are working as a nurse case manager for an insurance company, that is a nursing position," Soroko says. "It's no different from acting as a nurse manager in a hospital." She says when she was director of nursing for eight years, even though she may not have used her skills, "I sure used my knowledge every day."

In nursing case management, you use your knowledge every day, every time you look at a patient. "I think it's important for the board of nursing to remember that, and to realize that those are functions of any nursing case manager,"

she says. There are case management positions where social workers can fill the role, especially in mental health, and that's appropriate, she notes. "If I took a job like that, I may not expect to be relicensed; it depends on what my function would be." She says she personally wouldn't want to take a job of that description because she wants to use her skills and continue to maintain her license.

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Is nursing a profession or merely a role?

Keeping professional nursing portable

By **Karen Zander**, RN, MS, CS, CMAC, FAAN
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The New Hampshire State Board of Nursing recently denied nurse case managers the renewal of their RN licenses on the grounds that they did not meet the state's active practice requirement because employers could fill their case management position with a non-nurse case manager. The board believes it made the decision as a quality control action to protect consumers.

The Center for Case Management commends New Hampshire's active practice requirement. However, with all due respect and a long and strong commitment to professional nursing, we would like to question the logic of this ruling. Ironically, the question has little to do with case management and everything to do with the age-old quandary of the definition of nursing: Is nursing a profession or a role?

Nursing is a profession in which scientific and nonscientific knowledge are used to help people achieve their highest levels of wellness and comfort; i.e., outcomes. On the other hand, roles are externally defined because they are negotiations regarding deliverables (or outcomes), processes to achieve them, and a span of control. "Case manager," along with countless other positions, such as instructor, administrator, and nurse practitioner, are roles. Roles include tasks that may overlap, such as documentation, communication, family support, and monitoring vital signs. Ironically, with attention to self-care, many tasks nurses perform in various roles should be transferred to patients and families as they become skilled.

If a nurse in New Hampshire is hired in the role of director, as is the director of pharmacy or the director of laboratories, does that make the nurse less of a nurse? Similarly, does it make a nurse less of a nurse if an LPN or a nurses' aide or a doctor comforts a patient in pain? Was Florence Nightingale not a professional nurse because she functioned as CEO and statistician?

Logically, if a nurse is hired as a case manager, isn't the nurse still a nurse who is filling a case manager role? In fact, when a nurse is a case manager, the nurse is using the nursing process at the individual and population levels to manage clinical and financial outcomes while reducing risk.

The Center for Case Management would hope that the last thing any board of nursing would want is a profession determined by employers' definitions of roles. By necessity, employers are always in the process of restructuring and redefining roles. As nurses, we count on state boards to affirm the legitimacy of being a registered professional nurse, while supporting the widest array of employment opportunities in which patients can benefit from our multitalented services. The art and science of nursing must remain professionally defined, personally applied, and economically portable. ■

Don't waste dollars on useless automation

This facility's attempt to computerize backfired

Accurate benchmarking data come at a price, and when your facility is keeping tabs on every dollar it spends, a top priority is to make sure a costly computer software system is, at the end of the day, everything it was promised to be. Less than that could put your job in jeopardy, or at least cause you embarrassment and keep your facility from getting its money's worth. One *Hospital Case Management* reader found herself in an uncomfortable situation when a software package she had convinced her medical staff to buy was not as user-friendly as everyone had expected it to be.

Glenna Bradshaw, RN, MA, director of case management at Crittenden Memorial Hospital in West Memphis, AR, says, "First, we didn't get the tutorial, and someone from the hospital's data processing department had to load the system. Then we found that we couldn't use the system on our computer because we don't have the capability in-house to warehouse data. Our mainframe system simply won't interface with our PCs. I don't know whether the fault lies with our system or their software, but I wish we had been told up front that this would be a problem. When I presented their system to the medical staff, I certainly thought we could use it efficiently."

The result for Crittenden is that to use the software they have already paid for, they have to manually enter patient demographics for every admission. "And that's where we are today," she says. "That demographics information is on the mainframe, but it's useless to us. It's much too cumbersome for this four-person department to manually enter all that information, and we have no secretary. It's just not feasible."

Her advice: "Make sure your mainframe can talk to your PCs. The fact that we don't have warehousing ability may be to blame, but maybe [the vendor] should have told us that capability was essential when they marketed their product."

Rick Siegrist, lecturer at the Harvard School of Public Health in Boston and CEO of HealthShare Technology in Acton, MA, suggests that anyone involved in the acquisition of a new system ask the following questions:

- Does it offer a coherent, easy-to-read cost and resource-utilization analysis that will allow me to enact an effective disease management program?
- Will our physicians be receptive to the recommendations that the software offers?
- Will the rest of the staff buy in?
- Is the software user-friendly so that I can easily use disease management to reduce costs, improve care, and improve customer satisfaction?

Jo Surpin of the Mediq Consulting Group in Pennsauken, NJ, says to be sure to include your information services (IS) people at the table when making decisions of that magnitude. "Typically with software, you should make sure the company representative talks to people from the IS department and the CFO. Make sure technical support people are there from the company to assure that everything interfaces."

Linda Bergthold, PhD, an independent consultant in Santa Cruz, CA, comments that it's surprising how many hospitals go ahead and buy elaborate systems without first trying them out. "Get a trial run or at least a demonstration on the product," she says. "In doing that, the rep would have to check what your specifications are and if the product will work on your system. See if they'll offer you a free 30-day period with a money-back guarantee if it doesn't work on your system."

Gail McCurry, senior executive at McAdams Technologies in Falls Church, VA, agrees that implementation can be problematic and advises going one step further: "Find out how the system has worked for other customers. Ask the company representative to put you in touch with previous client hospitals to see what the application has been." McCurry says to take a close look at the company. Make sure its expertise extends beyond selling its product. Look at its track record. You want a company that will come in and join with the staff.

"Find out about other work it has done and see how solid it's been," she says. You can use the Internet for some of your research. If you search for the name of the company and / or its product, most search engines will present not just the company's Web site — where, of course, the information will be all positive — but also other locations on the Web where those company or product names might be mentioned and where you can read about the company's reputation.

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CRITICAL PATH NETWORK™

Practice teams boost pathway effort

Results show improvement in quality, cost

By **Nan Meyers**, MSN, RN, CNRN
Clinical nurse specialist, Neuro / Ortho / Rehab / Trauma Care Center
Borgess Health Alliance, Kalamazoo, MI

Borgess Medical Center, a 426-bed tertiary care Level 1 Trauma Center in Kalamazoo, MI, has had a stroke clinical pathway since 1993. The first pathways developed at Borgess were for surgical diagnosis-related groups (DRGs); stroke was one of the first medical DRGs to be implemented.

Clinical pathways have provided a means for outlining the standard of care in its most basic form. They are patient-population-specific, providing a day-by-day map of the standard of care, and they should be reviewed annually.

After the opening of an inpatient rehabilitation unit in 1992, both the acute inpatient rehab and the acute care hospital staff observed that several patients returned from the rehab unit to the acute hospital for treatment of deep vein thrombosis (DVT) or aspiration pneumonia. An extensive manual chart audit confirmed that those patients had not had DVT prophylaxis treatment or speech therapy swallow evaluation studies during their stroke acute hospital stay.

The decision to develop a stroke clinical pathway was made based on our clinical path selection criteria, which were developed to provide a logical way of determining which disease or DRG would best fit the clinical pathway process. The selection criteria included:

- high patient volume;
- high cost and resource utilization;
- opportunity for system improvement related to customer satisfaction;
- support by the hospital's Centers of Excellence;
- significant variance in national or regional comparisons;
- significant internal variance in practice patterns;
- request by service line or physician to develop a pathway;
- participation by a physician champion for the clinical pathway and specialty physicians.

The interdisciplinary stroke clinical path committee was empaneled, and a neurologist physician champion was chosen. Clinical pathway outcome data were obtained by manual chart audits and from the hospital's informatic systems (Atlas and Trendpath).

After implementing the pathway, a six-month evaluation revealed the following advantages for patients on the pathway vs. patients not on the pathway:

- three to four fewer days in lengths of stay (LOS);
- a 10% to 49% increase in use of DVT prophylaxis measures;
- a 31% to 35% increase in swallowing screenings by speech therapy;
- a 38% increase in discharge planning interventions.

Since the development of the pathway, its use by physicians has ranged from a low of 12% for the second quarter of fiscal year 1996 to a high of 48% for the fourth quarter of fiscal year 1998.

The clinical path committee noted that 1998 outcomes for mortality, morbidity, LOS, complications, and direct cost were deviating from the

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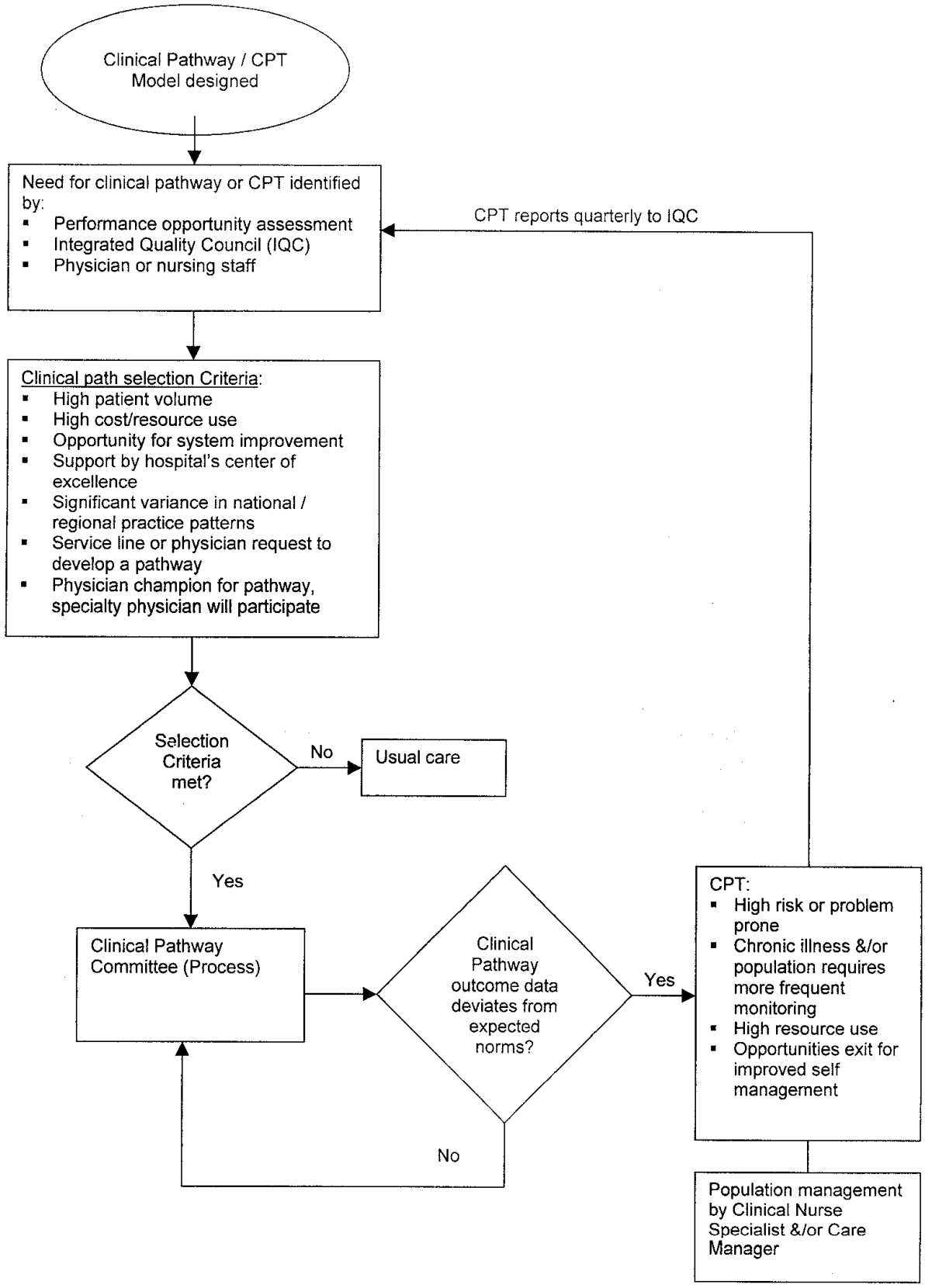
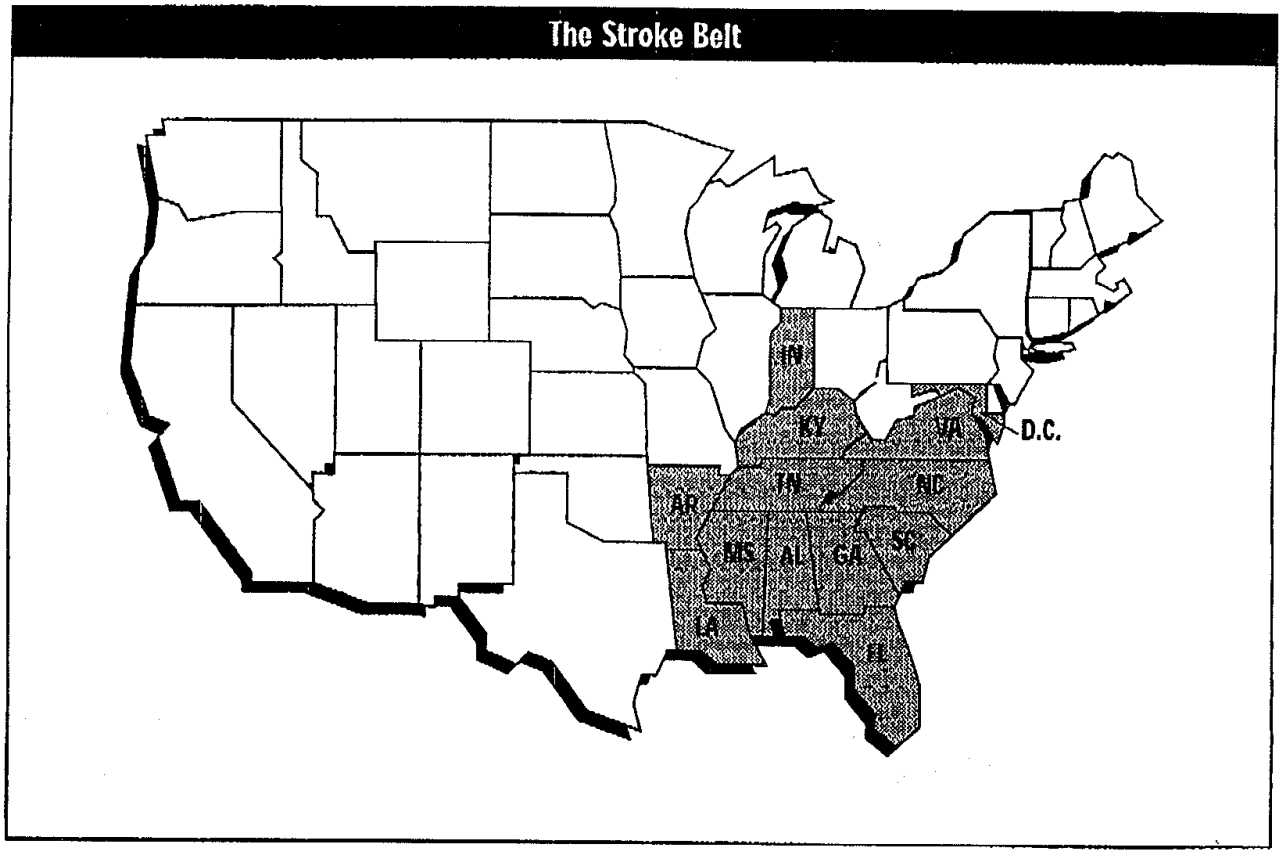
Clinical Pathway/Collaborative Practice Team (CPT) Algorithm



Source: Borgess Health Alliance, Kalamazoo, MI.

Do you live in the 'stroke belt'?

Twelve contiguous states and the District of Columbia have stroke death rates that are consistently more than 10% higher than the rest of the country. Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Tennessee, Kentucky, and Indiana plus Washington, DC, are referred to as the stroke belt. Their higher stroke incidence and mortality may be linked to a number of factors, including a higher-than-average population of African-Americans, a higher-than-average population of older adults, and dietary factors.



Source: National Stroke Association, Englewood, CO.

desired range. The committee attributed the worsening outcomes to the following:

- reviewing the pathway only once a year;
- inadequate communication of outcomes to physicians and staff nurses;
- lack of consistent use of the pathway by physicians on all admitted stroke patients.

For certain patient populations, something more than pathways may be needed to obtain desired outcomes, in which case a collaborative practice team (CPT) may be of use. A CPT is defined as a multidisciplinary group that uses research as a basis for analyzing patient outcomes and implementing ongoing process improvements, with the goal of improving care across the continuum for chronic high-risk patient populations.

The decision was made to move the stroke clinical path committee to a CPT, based on the following selection criteria:

- high-risk or problem-prone;
- chronic illness and/or a population that requires more frequent monitoring;
- existence of significant clinical improvement opportunities;
- high resource utilization;
- existence of opportunities for improved self-management.

At the first stroke CPT meeting in January 1999, the clinical nurse specialist presented the team concept and detailed its objectives, its target population selection, its process flow, and evidence-based research and prioritization of data. The CPT

Stroke Facts

• The United States will have 730,000 new stroke patients this year.
• Stroke ranks as the third-leading cause of death and the leading cause of long-term disability.
• The direct cost of stroke — hospitals, physicians, and rehabilitation — will add up to $17 billion.
• The indirect cost of stroke — lost productivity of the stroke survivor and caregiver — adds another $13 billion, for a total of $30 billion.
• In the first three months following a stroke, the average cost per patient is $15,000.
• For 10% of the stroke survivors, the costs exceed $35,000.

Stroke's Toll on Older Adults

• Stroke risk increases with age.
• For each decade after age 55, the risk of stroke doubles.
• For adults older than 65, the risk of dying from stroke is seven times that of the general population.
• Two-thirds of all strokes occur in people older than 65.
• Stroke is a major and increasing factor in the late-life dementia that affects more than 40% of Americans older than 80.

Source: National Stroke Association, 9707 East Easter Lane, Englewood, CO 80112-3747. Telephone: (303) 649-9299. Web site: www.stroke.org.

members agreed to meet monthly in order to review stroke outcome data, evaluate current quality indicators, and develop new indicators. They also agreed to devise action plans addressing quality initiatives, including research question development, consistent methods of communicating stroke outcome data, and implementation of community and professional stroke education programs.

Tool updates staff on stroke outcomes

A communication tool developed by clinical nurse and quality specialists is now used to disseminate the clinical pathway, protocols, and CPT information. The tool is used by the CPT clinical nurse specialist co-facilitator, and it ensures that appropriate physician and nursing staff are updated on stroke outcome data and initiatives in a consistent and timely manner.

While members of the stroke collaborative team were in planning and implementing mode, stroke outcome data from the third quarter of 1999 continued to show worsening outcomes in mortality, morbidity, complications, LOS, and direct cost. The CPT co-facilitators — a neurologist and a clinical nurse specialist — presented the 1999-trended stroke outcome data to the hospital's physician medical executive committee. Members of the committee voted that all patients who were admitted to the hospital must have the appropriate clinical pathway ordered and implemented.

The CPT plans to investigate a quality initiative in the emergency department (ED) regarding stroke time anchors and how they affect outcomes. Stroke time anchors indicate how quickly a patient should move through the ED, from presentation through diagnosis and treatment and on to acute hospital admission.

An ad hoc group of the CPT is devising a way to concurrently track the ED time anchors using the hospital's informatics systems. Once the tracking mechanism is in place, data will be collected and a statistical analysis will be completed. This study is expected to provide an opportunity to evaluate the effect of the ED time anchors on stroke outcomes.

Physician use of pathway has increased

Even though results of the CPT initiatives are limited, first quarter 2000 stroke data reveal significant improvements in mortality, morbidity, complications, LOS, and direct cost outcomes. Clinical pathway use by physicians has increased. There are continuing efforts to provide stroke education on an ongoing basis for physician practice groups, nursing staff, emergency medical service personnel, and the community.

The CPT has played a pivotal role in bringing patient outcomes for the stroke population into the acceptable range. Stroke continues as a chronic illness that forever changes the patient and his or her family. The consistent vigilance of the CPT clearly lends itself well to the management of this population. ■

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Listservs — Internet discussion groups that function via e-mail — often contain gripes or kudos for a company or product. The Web site for the Chicago-based Healthcare Information and Management Systems Society (HIMSS) provides information on products and consultants, as well as an active listserv called the HIMSS Forum. For information on joining, go to www.himss.org/bbs/bbs.html on the Internet or call (312) 664-4467.

In Bradshaw's opinion, many smaller hospitals would have the same interfacing problems she experienced. "Software companies should state up front, 'If you're going to buy our product, you really need to have some way for your systems to talk to one another, or you'll have to hire someone to input the demographics,'" she maintains.

Once Bradshaw got the company on the phone, they did get to the bottom of her problem. "But I wish they had given us more information up front," she says. "It wasn't a real user-friendly process by any means. I'm not computer-illiterate — I work with other software — but I found it very difficult to load the program and then connect to the benchmarking data as promised."

On the positive side, she says, "it is a giant step forward for us to have everyone agree on a set of criteria. We do use their books and manuals, but not on the computer." She says her facility had been about 10 years behind the curve on selected, objective data, but the doctors are on board now. "We have something that is not just our opinion against theirs. It's minimal criteria, but we're better off than we were before."

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How to avoid surprises with new software

Have techies talk to techies

You don't want any surprises after your facility buys its new software system. Is the software user-friendly? Do manufacturers routinely walk hospitals through product procedures to make sure users can implement them effectively, or do they sell and run? When choosing a product for your hospital, make sure you read the fine print. The best advice: Involve your information services (IS) staff in any conversations you have with the software company. Or set up a time when your IS people can talk to the software company's IS people.

Jacqueline Emery, marketing manager of McKessonHBOC's InterQual products group in Marlborough, MA, says installation of InterQual's clinical decision support product differs depending on how the product is intended to be used. In the case of a stand-alone installation, the process is relatively simple. The user receives the software with detailed step-by-step installation instructions and is usually able to install the software herself.

"The process is very similar to buying some off-the-shelf software for use in your home," she says. "If you are somewhat computer-literate, it is easy to do. If the product is used in a networked environment with other users, however, installation requirements must be carefully thought through.

"Together we evaluate the customer's environment and needs," says Emery. "If there is an in-hospital IS staff, we recommend that it be involved in the discussions." Otherwise, the customer can use what InterQual terms "Alliance Partners" who get involved in the details of the installation. "They will work with the customer to install the product and/or enable the link to the InterQual software," explains Emery.

Nancy Blase, director of account management and consulting at InterQual, elaborates: "Before a sale is consummated, we provide prospective customers with information that describes our product and its system requirements. We recommend at that time that if the prospective customer is not a member of the hospital's IS staff, that someone from the IS staff participate in a technical assessment with one of our product support specialists to discuss the exact specifications of the equipment present in the hospital and the interfacing

Selected companies offering case management software

Becton, Dickinson Healthcare Consulting & Services
1 Becton Drive
Franklin Lakes, NJ 07417
(201) 847-6800

Care Management Science Corp.
CaduCIS
3600 Market St.
6th Floor
Philadelphia, PA 19104
(215) 387-9401

HCIA
300 East Lombard St.
Baltimore, MD 21202
(800) 568-3282
www.hcia.com

HealthShare Technology
360 Massachusetts Ave.
Acton, MA 01720-3700
(978) 263-6300
www.healthshare.com

Landacorp
4151 Dunwoody Road
Suite 505
Atlanta, GA 30319
(404) 531-9956
www.landacorp.com

McKessonHBOC InterQual Products Group
293 Boston Post Road West
Marlborough, MA 01752
(800) 582-1738
www.interqual.com

Market Insights
1000 Brannan St.
Suite 2110
San Francisco, CA 94103
(415) 553-8888

Milliman & Robertson
1301 Fifth Ave.
Suite 3800
Seattle, WA 98101
(206) 504-5536
www.milliman-hmg.com

Per-Se Technologies
2700 Cumberland Parkway
Suite 300
Atlanta, GA 30339
(770) 444-4000
www.per-se.com

Threshold Data Technologies
23900 Commerce Park Road
Cleveland, OH 44122
(800) 342-5838; (216) 292-1030
Fax: (216) 292-1040
www.thresholddata.com

requirements for the software. In our experience, installations are accomplished the smoothest when you get the hospital's IS staff involved in the process early on." InterQual provides implementation services for institutions that don't have an IS staff to perform the installation themselves; however, the company recommends that the client hire a third party to perform programming of any custom interfaces.

But who and how? **Deborah Flagg**, director of customer support and implementation at InterQual, says, "If customers have questions or would like self-install support on the stand-alone or network installation, they can call InterQual's customer support line." If a hospital wants to outsource its network installation, InterQual provides contract implementation services.

"If a customer is planning on using an Alliance Partner, the process is straightforward," she says. "The interface is preconfigured at the time of shipment, and a customer simply follows the standard installation process and then contacts the Alliance Partner to enable the link."

Flagg says her company has encountered few requests for custom interfaces. However, if a hospital would like to write its own interface, the company provides a programming guide for that purpose. Additionally, technical consultants will review a hospital's request for proposal to ensure that the software of the firm it employs builds the interface correctly. "We recommend a hospital contact several software development firms and review each proposal closely," advises Flagg. How much does all this cost? "It varies depending on the scope of the project and the time frame you require," she says.

Ron Paulus, MD, president of Care Management Science in Philadelphia, tells *Hospital Case*

Management that during the sales process, his company's staff make sure to educate customers about their clinical decision support products' requirements and the different ways they can go about meeting those requirements. He says they spend time on that process because it's so important — the hospital's data are the essence of their product. To use one of this company's products, hospitals are required to extract internal data from their existing information systems and send them to the company.

"The sales staff go into the process of extracting data from existing systems within the hospital and sending the data to us so we can clean, validate, and analyze it," he says. "We then put it into a rational database and give them access to it back over the Web." Every customer gets specifications, which the sales staff discuss with them. Some facilities' IS departments can extract the data on their own by writing extraction programs to pull data off their systems into Paulus' product. "Or we can do it on their behalf," he says. "We also have partnerships with outside vendors to extract data.

"But even when people are told how to set up a system like ours," he says, "they may not really understand it. We realize that and spend extra time to make sure there are no surprises after the fact."

Anthony Milano of Market Insights in San Francisco says a main part of his company's philosophy is that its products, Clinical Compass and Financial Compass, be intuitively easy for users. "Our products are designed to be picked up and used immediately," he says. A hospital needs only a standard Pentium-based computer with 16 MB of RAM to use Market Insights' products. His company's Clinical Compass on CD-ROM for benchmarking is based on publicly available databases and does not use a hospital's demographic information.

For more information, contact:

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Anthony Milano, president, Market Insights, San Francisco. Telephone: (415) 553-8888.

Ron Paulus, MD, president, Care Management Science, Philadelphia. Telephone: (888) 223-8247. Web site: www.cmscience.com. ■

GUEST COLUMN

How to manage clinical path variance data

Identifying correctable system breakdowns

By **Patrice Spath**, RHIT
Brown-Spath & Associates
Forest Grove, OR

The purpose of collecting clinical path variance data is to identify correctable system breakdowns that cause patients to vary from the path, test the validity of the path recommendations, and correlate the processes of care with patient outcomes. However, hospitals involved in clinical path initiatives commonly find themselves with mountains of path variance data they don't know what to do with. Case management departments can use simple data management techniques to overcome information overload.

Up-front planning

First, limit the number of variables that people are asked to collect manually. Go to the patient record and determine whether the data are currently available there. Don't ask people to document information on a separate form when they are already writing the data in the patient record. Rather than asking caregivers to document the same information in two places, you can usually extract the information from the record more efficiently after the patient is discharged.

Thinking ahead of time about what information is really necessary will also help to ensure the variables being gathered will be sufficient to answer your study question. It is expensive to add variables to the data set that may have been overlooked in the original study design. The study question should be the principal determinant of variable selection. For example, if caregivers wish to know whether or not patient satisfaction has improved as a result of a process change, then a focused survey may be the best way to gather that information. Gathering "wouldn't it be nice to know" data is labor-intensive, and, in many cases, a waste of time.

Excerpt of Data File from Pain Management Study

Case No.	Patient taught relaxation techniques?	Total mg of Demerol (1st 24 hrs postop)	Total mg of morphine (1st 24 hours postop)	Level of pain reported by patient at 24 hours postop (0 = no pain; 10 = worst pain)
03-75-32	Y	400		0
15-38-81	Y		40	1
43-51-09	Y	500		1
31-00-65	Y		30	2
01-45-87	Y		60	1
42-76-32	N	700		3
21-44-91	N		55	3
19-55-17	N		85	5
45-61-39	N	650		2

Source: Patrice Spath, RHIT, health care quality specialist, Forest Grove, OR.

The variables needed to analyze clinical path variances may be contained in many data sources. Don't ask people to manually gather data that are already available in another information system. For instance, the number and type of diagnostic tests performed for a patient are data that can usually be found in the financial database. Information that comes from more than one source of data can be merged into a single record for each observation.

Pick one variable as focus for data merge

The method for merging data from various sources will vary depending upon the analyses being performed. If you are conducting a study at the individual patient level, a unique individual identifier (for example, medical record number or Social Security number) is the best choice for a merging variable. If one is analyzing information about providers (for example, physicians or facilities), then the identifier for the provider may be the best merging variable.

If unique identifiers are not available, merging data sources can be time-consuming and expensive. For example, one might use the patient's Social Security number to link records from the financial system with information stored in the case management system. Such links require an exact match, and any data input errors in either system will result in a failure to match. Unless great care is taken in linking files and merging data sets, biases of unknown magnitude or direction may be introduced into the conclusions.

After collecting the data for a month, organize the data elements into a data file (sometimes called a *data set*, or, if computerized, a *database*). A data file arranges the information like a spreadsheet. Each column represents a different variable, and each line represents a different case, or vice versa. An individual number in a data set represents the value of a particular variable for a particular case. Ideally, the data file is designed prior to variance data collection so the path variance report form can be arranged to expedite the efficiency and timeliness of the data entry process.

The data file is built by copying the information from various data sources onto a template you've created on a piece of paper (or into a computer database) using one line per case. Once all the spaces on the form are filled out, the data file is automatically created. A portion of a data file from a study of patients' use of postoperative analgesics is shown in the table accompanying this article. **(See table, above.)** Caregivers wanted to determine if patients used less pain medication if they are taught simple relaxation techniques preoperatively.

The variables collected during the study are listed across the top according to the order in which they appeared on the data collection form. The results for each case are added, one line per case. You may choose to input the case data in no particular order if entering into a computerized database where sorting is easily accomplished. If building a manual data file, you may wish to arrange the information by case number or the answer to a specific variable (for example, "Y" for patient taught relaxation techniques).

Once the information is entered into the database, it is easier to perform quality checks. Check for missing data and identify why they are missing and if corrections are required. Check for measurement errors caused by poorly worded study questions or misinterpretations of data collection instructions. Try to identify possible sources of bias that may affect the study results. Now is the perfect time to clean up the data before summarizing the results. If the quality checks reveal problems with the data, that will have implications for the results.

Consider automating your data files

When the data are organized in a data file, whether on paper or in a computer file, it's much easier to view the relationship between independent and dependent variables. The data file should facilitate ease of entry, storage, editing, and preparation of the data for analysis. The design should allow for querying and sorting, should interface with all potential users, and should be flexible enough to respond to data field modifications, patient types, measurement intervals, and new studies that evolve as a result of your data analysis. For this reason, consider automating the data file using statistical software or spreadsheet programs.

Path variance and patient outcome data can be a valuable source of information for clinical process improvement initiatives. With up-front planning and application of common data management techniques, collection and analysis of these data can become both more efficient and more worthwhile.

Editor's note: Patrice Spath, author of this column, has written a new 135-page book titled How to Measure and Improve Case Management Performance, *published by Brown-Spath and Associates. Cost: $35. To order, call (503) 357-9185, or order on the Internet at www.brownspath.com.* ■

NEWS BRIEFS

URAC adopts CM accreditation standards

The board of directors of the American Accreditation HealthCare Commission / URAC in Washington, DC, recently approved new standards that apply to organizations or programs that provide case management services by telephone or on-site. The standards require companies to establish a process to assess, plan, and

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implement case management interventions and cover the following areas:

- staff structure and qualifications;
- quality improvement;
- information management;
- oversight of delegated functions;
- ethics;
- complaints;
- the case management process.

They also address approaches to ensuring appropriate patient protections have been established, such as policies for confidentiality of patient information, informed consent, dispute resolution, and other issues. ▼

More periop oxygen halves surgical wound infection rate

Administration of 80% oxygen during elective colorectal surgery and for two hours afterward reduces by 50% the rate of surgical wound infections compared with administration of 30% oxygen, according to a new report.[1]

Researchers at the University of California at San Francisco examined the effects of administering both concentrations of oxygen during and for two hours after elective colorectal surgery in 500 patients. The rationale for providing the higher oxygen concentrations is that neutrophils require oxygen for the production of bactericidal superoxide radicals. Therefore, bactericidal activity is strongly related to the partial pressure of oxygen in the tissues. Surgery disrupts the local vascular supply and causes thrombosis, with associated local wound apoxia, which is corrected by increasing arterial oxygen tension beyond that required to saturate the red blood cells. Arterial oxygen saturation, subcutaneous oxygen tension, and intraoperative oxygen tension in muscle were significantly higher among the patients who received 80% oxygen, the authors report.

Although infections prolonged hospital stays by an average of a week, there was no overall difference between the two groups in the duration of their hospitalizations. According to the results of prior studies, infections after surgery for cancer can add an average of $12,500 to a patient's hospital bill. More patients in the 30% oxygen group than in the 80% oxygen group required ICU admission, and more patients in the 30% group died, though neither difference was statistically significant, the investigators note.

Reference

1. Grief R, et al. Supplemental perioperative oxygen to reduce the incidence of surgical-wound infection. *N Engl J Med* 2000; 342:161-167. ■

CE objectives

After reading each issue of *Hospital Case Management*, the nurse will be able to do the following:

- identify particular clinical, administrative, or regulatory issues related to the profession of case management;
- describe how those issues affect patients, case managers, hospitals, or the health care industry in general;
- cite practical solutions to problems associated with the issue, based on independent recommendations from clinicians at individual institutions or other authorities. ■