

A Day in the Life of a Medical Record

Lifting the veil on the security of today's paper-based environment

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Aside effect of the electronic cure being prescribed for the use of medical records is a mounting concern about the safety of the sensitive healthcare information contained in the records. How completely will a connected electronic system of record-keeping prevent unauthorized eyes from seeing medical details unnecessarily? Without a satisfactory answer to this question, consumers may not see connected health information for what it is: the key to coordinating and maintaining sound documentation of their health history in a far more comprehensive and secure method than any medical caregiver can provide today.

As important a concern as security is to consumers, they should understand that electronic systems offer much more than current paper-based methods when considered in the broader context of why patient records exist at all. Electronic systems offer a quantum leap in the beneficial uses of medical records, by allowing the full value of all information ever written down or stored as images at many sites of care to be indexed and utilized by multiple caregivers in multiple locations at any time. The security of electronic systems and their ease of access have been much-discussed, but the state of security for records kept in paper binders and manila folders has not attracted the same amount of attention. Warnings that an electronic system is not bullet-proof, and may be a threat to confidentiality of personal health information, do not take into account the security weaknesses of paper records.

What does the average citizen know about the current security of a paper medical record? The National Alliance for Health Information Technology figured the only way to find out was to see the process first-hand. In June 2005, a representative visited a typical hospital using paper records, and a paper-deluged community medical clinic. In September the representative visited a hospital using an electronic system.

This is the report of what we saw, what we learned, and what the public can use to make a reasoned comparison between current and emerging approaches to medical record security. It also looks at protecting the integrity of the

information for safe and sound medical decision-making; making critical information available when needed; and addressing the efficiency, and with it the effectiveness, of nurses and doctors in providing care to their patients.

Recording a record's journey

A porter wheeled the 58-year-old woman out of an elevator and down the deserted corridor of the community hospital during an early morning in mid-June of 2005. In a back pocket of the wheelchair was the binder of personal medical information—the patient's chart—that went wherever she did. It would be the first and most solitary of the five trips the chart would take this day with a porter pushing the wheelchair and the patient staring ahead, thinking about the tests she would undergo to shed light on her stroke-like symptoms.

During the course of this episode of care, the sensitive details of the patient's medical past and current travails would be only as secure as the ethics of the hospital workers pushing her wheelchair or flipping through the chart to read observations. The confidential details on the patient above, who we'll call Amy, would be safe in the hands of respectful workers at an undisclosed facility in America's heartland, which we'll call Community Hospital. But if that were not the case, a quick grab and a few flips through the conveniently organized binder would have easily yielded the woman's demographic data, including Social Security number; her history of high blood pressure, diabetes and a prior stroke; the six medications she was taking; her allergies to several drugs; and the full report from the emergency room the night before. And unless there was an eyewitness to spot the breach of confidentiality, no one would ever know.

This report follows the journey of a paper-based medical record for one day. In so doing, the report compiles a chart of its own: direct observations, high-level insights, anecdotes, statistics and analysis on the handling of personal health information in today's predominantly loose-leaf system of originating and keeping records. In the gathering debate over whether electronic medical records present

security risks, it's essential to acknowledge the less-than-perfect state of security that exists on paper today.

From the time a record is mobilized for use, it goes by cart, box, courier or car to different floors of a facility or to other facilities across a community. It gets wheeled down halls, put in door slots, leafed through by many people. Even when a record is sequestered in a records room, each test result or status report routed to the record involves another set of eyes and hands.

Contrast that with an electronic record system, which automatically adds items to a patient's file without involving couriers and restricts access to those needing to know—often granting selective access to parts of the record instead of full access to the whole chart. Any attempt to “flip through” the record is caught and catalogued by an automatically vigilant electronic system known as an audit trail.

Between 7:20 a.m. and 2:50 p.m., the chart traveling with Amy will change hands 17 times. A visitor to the Intermediate Care Unit where Amy is staying will take a personal phone call while standing over the chart on the counter of the nursing station. The chart will be perused not only by the attending doctor and assigned nurse but also by technicians in the neurology, cardiology and radiology departments as well as by a physical therapist and an occupational therapist. All professionals, but all looking at anything they want to look at.

Nurses' station a magnet for paper

Amy's paper chart of past encounters in the hospital is 4 inches thick, wrapped in a manila folder. It stands on end, filling a 4-inch-wide cubbyhole behind the nurses' station—one of 25 such boxes for charts labeled by room and bed number. Most other charts are thinner, though the chart for one room is wedged in; it's probably 5 inches thick when not pressed together. Another is stacked off to one side, much too big for the designated room slot.

This is where the “old charts” will stay for the duration of each patient's hospitalization after being sent up from the medical records department. The doctor attending Amy reviewed her chart between 6:30 and 7 a.m., but otherwise no one will see her record of previous medical conditions, excepting what clinicians asked and wrote down during the ER episode that initiated this admission or what resulted from yet another oral history the doctor took as part of conducting an exam and assessment. The binders passed around on the nurses' stations and sent with

patients during tests or therapies—the “active charts”—are started from scratch each time a patient is admitted. Other hospitals don't fetch the previous record from the medical records department at all. At Marymount Medical Center in London, Ky., doctors occasionally ask for a patient's full record to be sent up from storage to the nurses' station in charge of a patient, but otherwise those charts stay put, says Stacie Smith, the facility's director of health information management and also its privacy officer. Just like at Community Hospital, the chart on admitted patients at Marymount is started on the nursing unit.

The nurse responsible for attending to a given patient at Community Hospital is also charged with collecting, collating and compiling the “active chart” on that patient. Aiding nurses is the unit clerk, a kind of traffic cop for the nurses' station and the central point of contact for information and communication. The chart-making routine is a feat of paper-handling accomplished through an array of trays, wall slots, printers and couriers.

Couriers deliver to the unit clerk's inbox a steady stream of envelopes with paper reports, everything from simple patient histories to analyses of stress tests. Progress notes and strips of electrocardiograph printouts go the nursing unit's charge nurse, who puts them in the boxes for each nurse under her supervision. Neurology tests go the mailbox of the nurse manager, who hands them to the unit clerk. Lab and radiology results print automatically to printers on the appropriate nursing unit, and the unit clerk files those and all the other items coming her way in one of five wall-mounted boxes, each covering five beds. Nurses check the boxes, leaf through for their patients' information, and add the new materials to active charts kept on a shelf.

Personnel from the hospital lab go through all the charts on the night shift to pull various reports printed during the day and replace them with a one-page cumulative report. The pulled pages are tossed into a wastebasket with a special green trash bag in it, which designates sensitive patient information to be shredded. The trashcans holding patient-identifying details can be seen in clinical care areas throughout the hospital, usually next to the black-bagged regular trashcans. Periodically the green bags are removed and taken to be disposed.

Amy's chart for this admission was started with the pages of tests, observations and demographic details that accompanied her on the cart transporting her from the ER. As the

first full day dawned in her hospital stay, she was scheduled for four more tests—then abruptly, a fifth—that would add pages to the chart and prompt a progression of people to view her personal information.

A three-hour tour

The porter wheeling Amy through the deserted hallway eventually goes through a waiting area to the EEG room, hands the chart to the technician there and leaves. The technician looks through the chart before prepping Amy for the first test and closing the door. By 8 a.m. the test is done, the door opens to show the chart on a desk, and the porter arrives to take Amy to the vascular lab in the cardiology department. With the chart back in the wheelchair pocket, the porter is alone with Amy for another few minutes before getting to the next stop. The next technician receives the chart and looks through it on a desk before closing the door and doing two tests, an echocardiogram and an exam of Amy's carotid arteries. At 8:47, the door opens and the tech flips through the chart on the desk near the door. A different porter is back, the chart is returned to the wheelchair pocket, and it's down the hallway to radiology. The porter leaves Amy and her chart in the hall for five minutes.

A technician arrives to explain the test for dysphagia, or difficulty swallowing. The tech removes the chart from the wheelchair pocket and takes Amy into an X-ray room. At 9:20 the technician is back in the hall with the chart. She puts first the chart, and then Amy, back in the wheelchair. At 9:25 yet a different porter takes over, wheels Amy and her chart into an out-of-the-way elevator and back up to the Intermediate Care Unit. After wheeling Amy into Room 211, she brings the chart to the nurses' station.

It's 9:30 and the morning's tests are over, but the chart isn't done moving around. It's next inspected by a physical therapist at the rim of the counter circling the nurses' station. The therapist enters room 211 accompanied by an occupational therapist, leaving the chart on the counter. At about 10 a visitor is called to the station to take an outside phone call. She hovers over Amy's chart while taking the call. The two therapists return at 10:10 and add items to the chart. A few minutes later a nurse takes the chart from the physical therapist and works with it on the station.

That's not the end of chart usage for the day, as it turns out. At 1:45 the chart is pulled from its

shelf to order a stat CT scan on Amy. Visiting family members can't get much of a response from her even though she's sitting up and conscious, and her extreme lethargy springs the care team into action. Another porter comes to pick up Amy at 2:15 and the prior routine is repeated: elevator down to the first floor, into radiology, the chart delivered to a technician who puts it on a computer desk. The technician flips through and refers to entries as she prepares the CT scan. A second radiology technician grabs the chart and looks for information at the first tech's request. By 2:45 Amy and her chart are in the wheelchair with another porter, who hands the chart to someone at the nurse station after the trip back.

Looking where they shouldn't

Every hospital hands off paper charts and keeps track of medical records a little differently, says Smith, who serves on a Privacy and Security Practice Council convened by the American Health Information Management Association (AHIMA). At Marymount, staff from destination departments come up to nursing units to transport patients. They take the chart of a patient in hand or lay it in on the gurney during transport.

Sometimes records don't get back to the nursing unit or the medical records department as expected, says Harry Rhodes, AHIMA's director of practice leadership. A health information management professional for many years, Rhodes has encountered numerous situations in which charts were hidden, stolen or fraudulently requested. In contrast with electronic medical records, "in a paper record you only have one of everything and if you lose it, it's lost." Ironically, the limited availability of paper records is one reason some clinicians hold onto records, making them unavailable to others.

Rhodes has seen clinicians in hospitals or ambulatory facilities who don't want to lose track of a record—so they hide it for their own use. "They serve themselves but do a disservice to everyone else." In one case, a doctor on staff who had a new set of Ping golf clubs took Rhodes, then the medical records director of the hospital, out to his car to show them off. "He opened the trunk and there were a bunch of my records." The doctor didn't think he was doing anything wrong; many clinicians did the same thing. When they got their hands on a record, "They didn't want to give it up," Rhodes says, "because they were afraid they would lose it and not be able to get it back."

Up on the nursing units, incidents such as the Community Hospital visitor's hovering near patient charts are minor compared with documented breaches of security. From patients' family members to impersonators, the portability of the paper chart has prompted many to make off with a medical record in an unguarded moment, says Rhodes.

AHIMA recently asked provider facilities to anonymously offer anecdotes of privacy and security lapses and "horror stories" involving paper records. One hospital reported that in 2000, a family member of a patient waited until staff left the nursing station one night and took the patient's record out of the hospital to copy it at a local Kinko's. Other family members reported the breach.

At an Oklahoma hospital where Rhodes once worked, officials were investigating a case of child abuse in which evidence was included in the child's chart. A woman came in dressed in a tailored suit, holding a briefcase and saying she was from the Department of Child Services. When a clinician asked to see a photo ID, the woman walked away saying she would come back with one, but she never did. Investigators later determined the mystery woman to be the alleged abuser.

In the all-paper world of 1997, a mother signed the appropriate authorization to review the record of her deceased child. The employee working with her turned to answer the phone and in a matter of seconds, the mother put the chart under her shirt and was gone. Hospital officials contacted the father and got the chart back, according to the AHIMA anecdote.

Threats from outside are only half of it. Rhodes knows of many incidents involving doctors and other clinicians who sought to steal or destroy parts of charts or to try to find out facts about patients they didn't need to find out. On a quiet weekend, records can be found piled in a corner or in a "special place" a doctor keeps them to do work. Without the ability to know who has accessed a paper chart, there is limited accountability for prying eyes, he says.

An egregious case of confidentiality abuse goes back to the early 1990s in the AHIMA's "horror stories" file. One of the file clerks in a medical records department ran a background-check service for her friends, screening records of young men to determine if they met her friends' standards for dating. The clerk pulled records to look into the young men's social, financial and medical backgrounds—at a time when the public was just becoming aware of the risk of HIV and

AIDS. Only an anonymous tip to the hospital administration put a stop to this invasion of privacy.

Medical records: the processing plant

At the end of Amy's hospitalization, the elements accumulated in her active chart are merged with the existing medical chart down in the medical records department. Workers from the records department pick up the entries that comprised the active charts of discharged patients from trays in the nursing units and take them to a room where they are logged into a computer tracking system as received. For patients without a running record, new folders are created with a bar-code ID number. Then records technicians flip through all pages of the chart to see if there are any deficiencies—unsigned orders, reports needing dictation or physician signature, etc. Those problems are flagged and deficient charts are sent to one of several areas where physicians go to check what they need to complete. In 2004, the records department of Community Hospital delivered 14,287 medical records to other in-hospital locations for physician completion.

In an electronic environment, no records would have to be delivered and laid out for doctors. The chart assembly and analysis area of a medical records department would not exist out in the open. In a paper environment, that area is a hub of paper-passing. On the day Amy underwent her tests, a staff of 17 medical records department employees over a period of 14.5 hours filed 420 patient reports into charts, moved 898 patient reports from one location to another within the department and moved 483 full medical records from one location to another both in and outside of the department. The mid-size hospital's records unit employs 48 full-time-equivalent workers on three shifts per day, with about 20 on the day shift.

Much of Community Hospital's volume of clinical reports and results is computerized already. Besides the lab and radiology reports that are created online and printed to nursing floors, the departments of physical medicine, respiratory therapy, dietary management, social services and others enter information directly into a clinical documentation system. However, since the paper record is still considered the legal document, all reports are printed to the medical records department for filing 24 hours after patient discharge. The paper record is also the only means of keeping information in one place for the long term. Community Hospital is gradually transitioning to electronic medical

records, but right now it doesn't have the storage capacity to maintain lifelong patient records. All information is purged 60 to 90 days after being entered to make room for new patient information. Nurses can go online for results during a patient's hospitalization, but a paper copy is routed to the paper chart.

Historical medical records are fragmented in other ways. An outside firm began scanning old charts into an optical imaging system earlier this year, so the records department is pulling only paper charts from 2004 and 2005. Doctors can access records from 2001 and 2002 through the imaging system at the hospital. Everything before 2001 is on microfilm, pulled only on request.

The medical records used in patient care at Community Hospital are largely complete for inpatient services, because as the only hospital for miles around, it's likely to be the only facility that has served most of the admitted patients. For hospitals in a larger healthcare system, records need to get to other facilities. When Rhodes was at a hospital system in Bexar County, Texas, it took a fleet of vans to circulate charts among the main hospital in downtown San Antonio, an adjacent ambulatory center, a new medical center in the suburbs and a network of satellite clinics. (A clinic operation has a separate set of security issues—See Appendix.) Many times the records required to make good decisions on behalf of a patient were in a truck and running late, says Rhodes. Sometimes a record got wedged somewhere during transit and wasn't delivered at all. At Marymount, the hospital exchanges information with two offsite clinics by fax, e-mail or courier, says Smith. One courier drives all day among the three sites, handling not only clinical records but also deliveries for the materials management department and business office.

In an electronic-records environment, the prospects of a patient record being lost, stolen or spied on would dwindle to almost zero, Rhodes says. "People can't hide it, hoard it, it can't fall between the seats in the van."

Handling patient data electronically

At three-hospital Evanston (Ill.) Northwestern Healthcare, nursing stations are uncluttered and nearly devoid of paper with any medical details on patients. The only paper kept by routine is a hanging file of electrocardiogram strips—and the hospital system has a project underway with its IT vendor to have these stored electronically as

well. Since an electronic record went into operation more than a year ago, there is little out on the nursing floors for people to glance at it or take elsewhere. At a 36-bed surgical unit in the flagship Evanston Hospital, for example, the only access to patient records is through seven mobile computers wheeled around by the five to seven registered nurses on a typical shift, plus nine wired computers placed around the nursing station.

It wasn't that way before, says unit nurse Kimberly Marrese. When she started at Evanston in 1999 it was the same story as Community Hospital and elsewhere: A unit clerk was in charge of getting all the paper to the right place and continually calling diagnostic departments to make sure appointments were set up for patients on the unit. "There were papers everywhere, names floating around—this is so much better." Now the system manages orders automatically; they're sent without having to "filter through every single person" along the way, says Marrese. The unit clerk, or secretary as they're called at Evanston, sees some clinical information when she signs onto the computer system, such as demographics and emergency contacts, but she doesn't see a patient's plan of care and can't read physician or nurse notes—there's no need for her to know these details.

Nurses and doctors have unrestricted access to clinical information, but their electronic mark is on everything they call up on a computer screen using a password-protected sign-in. Employees doing clerical, billing or reception work can see only what they need to see to do their job, and some workers have no access rights at all—including those who transport patients from one place to another. "The people coming to pick up the patients can't get the chart," says Marrese. "They have no reason to."

As tests are ordered, results reported, progress notes created and patient details jotted, the patient chart comes together without anyone taking part in it. The computer system takes care of it as a byproduct of conducting electronic business. The computer also manages access by more than one user at a time, which removes the temptation of physicians and others to hide or hoard the single available copy of a patient's record. Charts are "always" open to more than one user, says Marrese. Besides nurses and physicians, various therapists and technologists can share the record online, as can pharmacists and administrators such as performance-improvement specialists and, of course, security-monitoring staffers.

Out on the nursing unit, Marrese relies on one of the wireless flat-screen personal computers stationed on rolling carts, nicknamed “Jetsons.” “We take it everywhere we go,” she says. Having it with her inherently protects privacy because the computer is not standing in a hallway while open to a patient’s chart. If a nurse or other authorized user goes away from a computer, it logs the person off after a few minutes. When the nurse comes back, she can sign in and the screen will be in the exact place she was working, eliminating the time it would have taken to start at the beginning and find her place.

The stationary computers on the nursing station are mainly for clinicians who don’t work full time on the unit: doctors, medical and nursing students, discharge planners, social workers. Doctors can have multiple charts open at once, but nurses can see charts only one at a time. Marrese says it’s easier for nurses to enter information on the wrong chart in a computer than on paper charts in front of them, and this restriction discourages such errors. An exception is the women’s hospital attached to the Evanston facility, where nurses may have to see charts of mother and child together. Clinicians can compose notes at the same time in a chart, but not orders.

An electronic ripple effect

For Rupal Patel-Shah, a registered nurse who manages the hospital’s interventional radiology department, incoming patients are no longer an unknown quantity until the chart is presented upon arrival. Instead of having to flip through the chart to find data on lab work, review orders in the chart and view essential information such as allergies, everything is available in advance on the computer. Patient history and recent notes from nurses and doctor’s office visits can be called up as needed, along with past encounters and diagnostic images in the radiology department. Radiologists, RNs and technicians can see notes from the other two hospitals in the system, Glenbrook Hospital and Highland Park Hospital—a valuable feature because the Evanston facility gets a lot of transferred patients from those community hospitals, says Patel-Shah. The department still deals with limited paper-based data from outpatients and transfers from outside the Evanston system, but this information is scanned in.

The scanned and internally created chart information populating the electronic record each day makes the medical records department

a quiet place instead of a beehive of paper-passing activity, says Teresa Bunsen, director of medical records. The main Evanston facility now employs 47.5 FTEs in the medical records area—about the same as for Community Hospital’s much smaller operation—and only 77 FTEs are needed for the three hospitals combined. Fourteen of those Evanston employers are “coders” who work from home using a dedicated connection to the hospital’s computer system, says Bunsen. Coders assign numerical procedure or disease codes to charted services for billing purposes.

The electronic medical records system aids clinicians by gathering information as it’s generated and routing it to the appropriate blanks in the documentation notes. Faxes from physician offices, laboratories and other sources of data outside the Evanston system go to a fax server and are converted to electronic images, so there is no paper on the hospital’s end. Doctors no longer have to pore through paper charts to sign dictations, authenticate verbal orders written down by others, or co-sign orders of residents. At one time, a room in an area of the medical records department was filled with paper charts, and no one could leave with a chart; that policy constituted the only security the records had. That room was also the only place physicians could juggle and sign sheets in the binders; now the eight carrels in the signing area each have a flat-screen computer, a phone and a writing area, but little in the way of paper. It’s no longer the only place to get the work done, either. Doctors can view and sign electronically from their offices or anywhere else they can get to a computer, says Bunsen.

Besides security improvements, electronic records have been a boon to financial and operational improvements. One tally of efficiency is known as “discharged but not final billed,” a dollar-volume tally of patient discharges for which all the billing codes are not final. The codes can’t be final until doctors view certain chart details and sign off. In the spring of 2003, the dollar volume stood at \$38 million. As of late September 2005, that figure had plummeted to \$5.6 million, says Bunsen.

Three sides of the security triangle

The aspect of patient-data security currently getting the most attention is confidentiality, but Rhodes of AHIMA says there are two other aspects to consider: integrity, or the assurance that information is comprehensive and accurate, and availability, or the ability to deliver essential information when and where it’s needed. Paper-

based methods of capturing and storing records can lead to problems with both integrity and availability.

With one copy of all medical encounters in one folder, the risk of losing an important piece of information is always a concern. Sometimes it's intentional, says Rhodes. A patient who argues he did not sign a consent form for a medical action might ask to see his record and wait for nurses or records professionals to get busy and destroy evidence of his consent. Hospital staff and medical providers also have been caught trying to eliminate documentation in a patient's chart, he says.

The materials used to collect and compile paper records can be a source of problems for information integrity. For example, adhesives often are used to paste reports or results to a page. A doctor may dictate a report into a digital recorder, and someone later transcribes it on a word processor using paper with peel-off adhesive backing. "Even the best adhesives eventually lose their adhesive properties," says Rhodes. Something dislodges it from a chart and it's filed back in the wrong place or lost entirely.

As recently as 10 years ago, electrocardiograms were printed on thermal paper, using heat rather than ink. But a heat-produced image eventually starts to fade. Meanwhile, carbon-less paper copies placed near thermal paper speed up the process of thermal degradation, causing a loss in legibility. Stored on top of each other in a closed record, a thermal document eventually ends up as a blank page. Those technologies are not in wide use now, but inkjet printers cause a new range of problems when pressed on other pages—jumbling text to the point that it's illegible.

Paper records can be damaged where they are stored. "I've had water mains bust and flood the records," says Rhodes. The extremes of this type of damage were plainly seen in the aftermath of Hurricane Katrina's storms and resulting floods, in which nearly a million people's medical records were destroyed or became unavailable for use by doctors when patients were relocated and thus separated from their medical documentation.

Records also can slip behind office furniture or be otherwise misplaced. Rhodes recalls a time when a record slipped behind a cabinet and wasn't found until the records area was remodeled years later. "The electronic record is not going to fall behind the counter."

Making the comparisons relevant

Privacy and information control are central issues as the healthcare industry begins to envision a future where patient details are kept in computers. Publicity about the benefits of accessible and complete medical information will help build support. But publicity about the perceived downside of having sensitive data in electronic form can slow this momentum or even threaten the forward movement to electronic health records.

Both the current paper and the envisioned electronic methods of keeping and using medical records have their downsides. "We are having a debate about privacy of health information in the United States, and we need to explain to the American people why electronic systems are preferable to paper," said Dr. David Brailer, National Coordinator for Health Information Technology, in a speech on Feb. 17, 2005. That explanation must include showing how paper records work.

"Paper medical records are difficult to secure and keep private—records can be left unattended on people's desks, inadvertently placed in the trash, or transported among clinician offices via taxicabs or other couriers," Brailer said. "Even when they are in secure facilities, it is not possible to restrict viewers to only the information they need to see to do their work. We rarely can identify when privacy of paper records has been compromised. By comparison, electronic records have strict security measures in place to prevent misuse or unauthorized access by using audit trails, access permissions and viewing restrictions."

The challenge, he continued, is "to be disciplined about developing the business rules, policies and protections that get consumer health information where they want it—immediately—and keep it from going where they don't—ever."

Postscript

At the end of September 2005, medical-records executives at the facility we've called Community Hospital received support from upper management to include an electronic imaging system in the 2006 budget. The information system will enable scanning of the last remaining paper in the post-discharge records handling process. When combined with the already-electronic documents associated with clinical care, the system will allow the facility to finally stop printing paper and make the transition to an electronic medical record. The hospital's director of medical records says she was thrilled with the decision.

Appendix

Care amid the clutter: a visit to a physician facility

Five paces directly behind the receptionist chair in the urban health clinic is an alcove storing all the paper charts on patients. Six floor-to-ceiling stacks, measuring about 12 feet wide by eight feet high, comprise the patient-information hub for the doctors, nurses and clerical workers at this primary-care facility in a working-class suburb of a city in the Midwest. It is by no means the only place you'll see patient charts or detail-rich reports.

As of 8:25 a.m., four basket gurneys in the immediate area of the stacks are holding charts for various purposes. One is filled with folders waiting to be refiled on the chart shelves. Another full basket of about 40 charts is right behind the reception area awaiting review and action. Some of the charts have forms clipped to the front with a view of patient notes, diagnosis and other details. Separate chart storage for obstetrics and gynecology patients, in a cabinet straddling a nearby doorway, shares space with office supplies.

This is a not-for-profit community health center of limited means; 80% of its patients are covered by the state's Medicaid program. The center's officials agreed to allow an observer into restricted and public areas of the clinic in return for having its identity protected. Patients on this morning in late June 2005 will include a 48-year-old man with a history of heart disease and an 8-month-old baby with an ear infection. Their charts will be among the hundreds parked on desks, in wall or door slots, or on a cart at the junction of two hallways serving eight exam rooms.

Charts of patients scheduled to come in during the day are in cubbyholes labeled by physician to the left of the reception desk. When patients arrive, a worker attaches a billing form on the front of the chart that includes demographic data and insurance information. The file folder is placed in one of nine wall-mounted slots to the right of the reception desk, each slot bearing the name of a doctor or nurse practitioner. That's the routine followed when A.J., a recently hospitalized heart patient, arrives just after 9 a.m. for a physician follow-up visit. A nurse at 9:20 a.m. pulls A.J.'s chart from the wall slot, calls him to a door and leads him down a hall to a scale where he is weighed and then directed to an exam room for preliminary questions. At 9:27, the nurse leaves the room and puts the chart in the door slot.

The cramped hallway is the focus of activity for the doctor on duty and the nurses and workers attending to patients in person and on the phone. At a desk built into a wall niche in the hall, a call-center worker wearing a headset takes incoming phone calls and writes down narratives on telephone-triage forms. A sign on an overhead office cabinet with an arrow pointing down to the desk denotes a stack of "messages waiting for charts." Next to it is another sign identifying "messages awaiting physician review." Nurses escort patients past the station all day long. Sometimes patients and their family members stand around or idle by during weigh-ins that take place in the hall. Between patient appointments, the doctor is at the station looking at the day's appointments, flipping through charts, writing prescriptions or talking on the phone with patients or other providers.

At 10:04 a.m., the doctor pulls the chart from the door slot and enters A.J.'s room. Four minutes later she leaves, works with the chart on the call-center desk and writes a referral to a cardiologist. A.J. is escorted out while the doctor takes the chart to a nurses' station near the reception desk and writes a progress note. She puts the chart down on the counter, next to a stack of blood-test results from a laboratory service in the area.

When the doctor isn't taking the chart up to the front for some special reason, there's a gurney with two wire baskets at the junction of the two hallways for her use. The bottom basket holds charts for patients seen that day, which need to go back to the medical records area. The top basket has patient files she needs to review—for lab results that are in, or to check on what happened with a patient seen at the hospital, etc. The charts all have color-coded tabs visible on one side for quick location of progress notes, lab results, X-rays/EKGs, history and physical, prescriptions and insurance correspondence.

At 10:27 a.m., a nurse ushers a young mother and her baby into the same exam room and places the baby's chart in the door slot with the attached billing form facing out in full view. Moments later she picks it up again and turns it the other way to conceal the patient information. A half-hour later, the nurse

takes the baby to be weighed on a special scale in the hall, first leaving the chart on a chair and then making notes in it. The baby is 8 months old, according to the birth date accessible with one glance on the front of the chart. The nurse carries the baby and chart back to the room, closes the door and then leaves four minutes later after returning the chart to the door slot.

The doctor grabs the chart and goes in to see the baby at 11:34, leaving two minutes later to write notes on the chart at the call-center desk. She writes a prescription for the mother who leaves with her child. The doctor spends five minutes writing progress notes, tosses the chart in the bottom basket of her file gurney and carries the bill to an in-basket stacked on a desk to the right of the receptionist.

About the Alliance

The National Alliance for Health Information Technology is a diverse partnership of leaders from all healthcare sectors working to advance the implementation of information technology to achieve measurable improvements in patient safety, quality of care and operating performance. The Alliance collaborates with healthcare and government leaders to accelerate the implementation of world-class, standards-based information technology aimed at creating the most effective, safe, unified, and inclusive health system possible. Since its founding in 2002, the Chicago-based Alliance has helped forge consensus and accelerate progress on such important initiatives as developing an industry-endorsed interoperability definition and making available to the public, The Standards Directory. Scott Wallace, president and chief executive officer, chaired the Commission on Systemic Interoperability (CSI), which issued its report in October 2005. The Alliance is a co-founder of the Certification Commission of Health Information Technology (CCHIT). More information about the Alliance is available at www.nahit.org.

The AHIMA as partner

The Alliance is grateful for the support and collaboration of the American Health Information Management Association and especially its Privacy and Security Practice Council, which served as a sounding board and source of expertise and comment. The council also took responsibility for soliciting volunteers for a site visit and making arrangements with "Community Hospital." The Chicago-based AHIMA serves 50,000 health information management professionals.

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