Physician Order Entry Goes Online: the Effect on Records and HIM Operations

by Elizabeth Curtis, RHIA

As CPOE turns from vision to reality, what impact is it having on HIM? And what impact is HIM having on it?

Installing an order entry system in a busy hospital environment can be a huge undertaking for administration, information systems, nursing, ancillary departments, and the medical staff. Its benefits to patient safety, patient throughput, and quality of care can be tremendous, but what about its impact on the medical record itself? And what effect does the system have on HIM operations?

This article provides some insight into this fast-growing component of the electronic health record. It reviews traditional HIM functions to illustrate how computerized physician order entry (CPOE) changed the health record and HIM operations at The Ohio State University Health System (OSUHS) in Columbus, OH, and a sample of other medical centers.

OSUHS has completed installation of CPOE on the inpatient units at all five of its hospitals. The HIM department was involved in the selection process and had representation on the steering committee. The steering committee worked to develop a system that communicated patient order information effectively and documented it for a legible and concise set of inpatient orders.

Verbal and Telephone Orders

CPOE systems can have a positive or negative effect on the number of unsigned verbal and telephone orders. HIM's role in planning the system installation can result in a design that encourages timely signatures on these orders.

When OSUHS planned its CPOE installation, its signature rate on telephone and verbal orders by discharge was below 60 percent. Working with the information systems department, we designed a system that requires a physician to enter an order to discharge a patient. To do so, the physician must resolve all outstanding verbal and telephone orders. As a result, our signature rate on patient orders by point of discharge is greater than 98 percent.

The installation of CPOE removed the need for a staff member to check for signatures on these orders, too. The system alerts the physician of outstanding orders when the physician attempts to enter any order on a patient, so the record analysts were able to discontinue marking these chart deficiencies. After installation of CPOE at University Hospital East, our delinquent chart rate dropped within 60 days from 42 percent of an average month's discharges to 26 percent.

Carol Smith, RHIA, director of health information services at University of Virginia Medical Center, notes that their system has also eliminated analysis of deficiencies for unsigned orders. By design, orders at the medical center must be signed before new orders can be entered. Smith says that 98 percent of orders are signed within 24 hours.

Linda McNeil, RHIT, manager of HIM at Vanderbilt University Medical Center in Nashville, TN, reports that they still have many written orders (approximately 20 percent) that need to be analyzed for signature, but the order entry system alerts physicians of electronic orders awaiting signature.

In Syracuse, NY, University Hospital of the State University of New York (SUNY) Upstate Medical University also has seen improvements in signatures on orders through CPOE. The system automatically requires cosignatures on physician assistant orders, whereas before a hospital staff member had to flag the doctor to cosign them, says Roxanne Austin, RHIA, director of clinical data services. The HIM department receives an outstanding order report from CPOE and works with the doctors to

obtain signatures. The unsigned orders only remain on the physician's work list for seven days; after seven days, HIM flags the orders as a deficiency.

Print It?

At OSUHS, CPOE orders are a part of the electronic health record. At the point of discharge, the cumulative order set is sent to the clinical data repository. We no longer print and file physician orders in our paper inpatient records. This has saved valuable staff time, reduced wear and tear on our printers, and has also reduced the size of the paper medical record we store.

At Yale-New Haven Hospital the experience has been somewhat different. Jean Pawlich, RHIA, associate director of clinical information service, reports that they receive medical records from the units with daily order reports included. The biggest impact for them has been the volume of paper. Pawlich has completed studies that reveal that the size of the medical record has increased by 40 percent with the order entry reports as well as medication administration records.

At Vanderbilt the daily order sheets print on the nursing unit and are filed by unit staff. The printed orders, according to McNeil, take up more space than the handwritten orders did. A more concise set of orders can be printed by HIM staff. However, additional staff time is needed to purge the daily orders and replace them with the cumulative orders, so this is not being done.

At University of Virginia Medical Center, HIM staff members do not print and file orders in a paper medical record. The orders are accessed after discharge through the data repository and printed on demand. Medication administration and discharge planning documentation collected in CPOE is also stored in the repository.

The HIM department at Massachusetts General Hospital does not print orders. According to Deborah Adair, MPH, MS, RHIA, director of health information services and privacy officer, orders stay in the order entry system repository for 30 years (the state law for medical record retention). To direct those looking for orders in the paper medical record, the notice "orders online" is placed behind the record's color tab where orders were previously filed.

At University Hospital of SUNY, HIM staff print orders when they are signed and file them as a part of the permanent record. This is additional work for the staff. Austin is working to get signed orders into the hospital's clinical data repository to eliminate the manual file process.

Medication Administration Records

CPOE generates additional record components at OSUHS, including a medication administration record. At the point of record assembly, the HIM staff queue the medication administration record to print. Unfortunately, due to the system's record length limits, we have been unable to send these reports to the clinical data repository.

At Yale-New Haven Hospital the medication administration records print automatically each evening on the nursing units, and the unit staff files them in the records. At University Hospital of SUNY, the medication administration record forms print out of CPOE on the nursing units; the nursing staff complete the administration by hand and file the form in the medical record.

Tools for Documentation

CPOE at OSUHS and Yale-New Haven is used on all inpatient units and in some outpatient settings. Beyond orders and medication administration records, CPOE is used to generate consultation requests, discharge instructions, patient teaching records, diagnoses lists, and medication lists.

When a consultation at OSUHS is ordered through CPOE, the consultation request is routed and prints at the area specified by the consulting service. The consultants write their advice on the form or dictate. The nursing unit staff or the consultant files the form in the paper medical record on the unit.

At Massachusetts General Hospital, the CPOE system includes a discharge documentation module. The staff applied technologies so users can build on order entry documentation to complete a discharge summary. According to Adair, doctors can add the hospital course and significant findings to the discharge documentation by typing, and the entire document is then

sent to the HIM department's electronic signature system as a discharge summary. Plans are under way to allow the physicians to dictate this section instead of typing.

Discharge instructions at OSUHS include the patient's final diagnoses, procedures performed, discharge medications, any follow-up appointments, and limitations on diet and activity. The instructions are recognized as a short-stay summary for chart completion purposes. All discharge instructions are routed to the electronic physician signature system and must be signed by the attending physician for the record to be deemed complete. We also allow physicians to dictate an abbreviated discharge summary when the patient has a discharge instruction form, only dictating the reason for admission, significant findings, and hospital course. HIM staff members release the discharge instructions and the abbreviated summary whenever a discharge summary is requested.

Medical Record Reviews

Tracer record reviews are an important part of OSUHS's plan for Joint Commission survey readiness. Physician orders must be countersigned within specified time periods in accordance with our medical staff rules and regulations. To ascertain our compliance, the tracer team signs on to the CPOE system and checks when orders are signed. The system alerts physicians to unsigned orders whenever they attempt to place orders in CPOE, so our compliance with order signature deadlines has improved.

Staff at the University of Virginia Medical Center and Massachusetts General Hospital also access the order entry system to complete reviews. Vanderbilt has had three Joint Commission surveys since installing its CPOE system. According to McNeil, there have been no order issues during the surveys.

Compliance Reports

The detailed orders are sent to the information warehouse at OSUHS, where we aggregate reporting and monitor compliance with medical record documentation requirements. For example, we run reports routinely to present to the medical information committee on the percentage of verbal and telephone orders signed.

At the University of Virginia Medical Center, order signature rates in CPOE are incorporated into the quarterly medical record review reports to the medical records health information system committee.

At Massachusetts General Hospital, Adair designed reports she receives monthly and quarterly. The reports detail unsigned orders by type and timeframe. Medication orders must be signed within 24 hours at the hospital. Based on these reports, the clinical policy and patient records committee requested a system change. Now the CPOE system features a pop-up reminder when signatures are overdue; if the reminder is overridden three times, the system requires the user to enter a reason.

At Yale-New Haven Hospital, the HIM department generates a monthly report indicating the number of unsigned orders by service at the time of the report. The unsigned order report is presented to the medical record and clinical information committee and the medical board for ongoing monitoring of compliance with medical staff rules and regulations.

Inclusion in the Legal Record

OSUHS has a hybrid medical record. In the event a complete copy of the patient's record is requested, staff use the clinical data repository to retrieve information. We produce the cumulative order summary and the discharge instructions sent to the clinical data repository from CPOE as a part of our legal record.

Connecticut state law requires that the medical record be maintained on either paper or microfilm, says Pawlich at Yale-New Haven Hospital. The Connecticut Hospital Association lobbied successfully to change this, and starting in October 2005, electronic health records will be recognized by state law.

OSUHS set limits on the time between admission and entering an admission order. The emergency department medical staff can enter orders before admission, and the admitting staff can enter orders for care without being required to enter an admission order immediately upon admission. This helps us better meet the patient's needs. However, the system requires that an admission order be entered within hours of admission so our third-party payers can see when and why it was necessary that

the patient be admitted. There were no such reminders or rules in the paper ordering system, and as a result, occasionally we could not locate an admission order.

Removing Unapproved Abbreviations

Soon after the unapproved abbreviations list was finalized by OSUHS medical staff administration, the HIM department removed all unapproved abbreviations from CPOE. Yale-New Haven Hospital and the University of Virginia Medical Center did the same, and similar work is under way at Massachusetts General Hospital, Vanderbilt Hospital, and University Hospital of SUNY. The challenge for some system vendors is to find space in the displays to expand from the unapproved abbreviation to the preferred documentation.

Amending Rules, Regulations, and Bylaws

With the introduction of CPOE, OSUHS revisited the wording of the medical staff rules and regulations to indicate that written orders refer to both handwritten and electronically entered orders. Electronic orders are equivalent to written orders, and they have the same force.

Yale-New Haven Hospital revised the medical staff rules and regulations to mandate order signing within 24 hours for state and federally required or internally mandated “do not resuscitate” and “do not intubate” orders. Previously, all orders required signing within 24 hours. Now, any remaining unsigned orders must be signed at time of patient transfer or discharge.

Vanderbilt made changes in the bylaws regarding signing orders. It was decided that anyone on the team could sign the orders while the patient was in-house, up to two days after discharge. After two days, the order goes to the individual who gave the order.

At University Hospital of SUNY, Austin is currently working with the medical director, medical record committee, and CPOE advisory board to finalize a policy that will allow suspension of privileges for delinquent order signatures.

CPOE provides an opportunity to re-engineer processes and redefine the legal medical record. It is a complicated system, and presents challenges to the definition of the medical record. To make the most of the opportunity, it is important that HIM be involved in the selection and installation. With HIM leadership and involvement, CPOE design can be optimized to improve the organization’s clinical and administrative processes and improve its legal medical record.

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