Improving Patient Safety Successful Practices in Iowa Hospitals

Iowa Hospital Association
100 East Grand, Suite 100
Des Moines, IA 50309-1835
515/288-1955
www.ihaonline.org

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Introduction

In November 1999, the Institute of Medicine (IOM) released the landmark report, "To Err Is Human: Building a Safer Health System." In response to this renewed momentum on medical errors, IHA developed a Medical Errors Position Paper and Action Plan, which was approved by the IHA Board in February of 2000.

In accordance with the Action Plan, a Policy Discussion Paper raised issues on how to redefine accomplishing one of the basic tenets of medical practices: "First, Is Do No Harm."

Based on discussion held with the Medical Errors Work Group, Council on Membership Services, and the IHA Board, the Association learned that a major problem of medical errors is due to inadequate dissemination and implementation of ideas and examples of good practices we know work.

In light of this feedback, IHA implemented a "Successful Practices in Iowa Hospitals" program. Through this initiative, IHA hoped to learn about any special practices or programs that Iowa hospitals have adopted to minimize medical/medication errors, improve patient safety and improve quality of patient care. In essence, the goal of this effort was two fold:

- Recognize hospitals for implementing successful practices that improve patient care and reduce medical/medication errors.
- Share successful practices with other Iowa hospitals through the *Friday Mailing*, IHA Website, and district meeting presentations.

IHA recognizes that many hospitals have made the commitment to systematically reduce the risk of patient harm in health care.

A number of hospitals have participated in the Successful Practices in Iowa Hospitals Program. What each of them has achieved can be replicated by others to continue to improve the quality of care and enhance a safe work environment.

Staff Education

Sheldon¾ Northwest Iowa Health Center

Northwest Iowa Health Center in Sheldon has implemented a successful initiative which reduced medical/medication errors and improved patient care with very minimal financial outlay.

Biannually, a medication competency quiz is developed, based on medication inaccuracies that occurred during the previous six months. This approach extends a learning experience to many individuals, instead of those involved in an isolated incident. The goal is system improvement, rather than individual scrutiny. Confidentiality is maintained throughout. The last competency testing concerned the administration of chemotherapy medication, a low volume but high-risk issue. Competency was tested, even though there were no chemo administration errors placing emphasis on "prevention" rather than "improvement."

Patient safety has been enhanced for only the cost of developing the competency quiz. For more information, contact: Kathy Altena, director of Acute Care Nursing, Northwest Iowa Health Center in Sheldon. Phone: 712/324-5041

Cherokee¾ Sioux Valley Memorial Hospital

At Sioux Valley Memorial Hospital in Cherokee, the goal for the Nursing Department was to emphasize education concerning medication errors among the nursing staff. An analysis called, "Saga of a Med Error" was presented at the nursing staff meeting, which reviewed the sequence of events that lead to the actual medication error. Discussion of ways to decrease medication errors involved the identification of a method for patients to use in clarifying medications taken at home. A medication card was developed 1) for patients to keep for their personal reference and 2) for presentation when admitted to the hospital.

The cards became part of the focus on "Medication Safety" in the hospital booth at two local fairs. The cards were distributed and explained. One-week pill boxes were also distributed in an effort to help people keep their medications organized at home. Posters about medication safety were also used in the booth.

The same cards are now being used in discharge instructions when patients leave the hospital. Since this activity was recently implemented, it is not known whether medication errors have been reduced. Financial investment for items distributed at the fair booth include:

- Medication Cards
  $1.95 (500 @ 39 cents/100)
- Pill Boxes
  $579 (500 @ 90 cents each plus charge for hospital logo)
- Laminated Posters
  $15

Contact Connie Mohn at Sioux Valley Memorial Hospital in Cherokee (712/225-5101) with questions.

Improving Medication Safety

■ Waterloo¾Allen Memorial Hospital

Allen Memorial Hospital in Waterloo has implemented a hospital-wide practice that has reduced medical/medication errors, and positively affected the delivery of patient care.

The newly adopted policy (June 2000) requires the ordering physician to verify all medications to be used by the patient following discharge. The policy uses a physician order form listing all medications the patient is receiving in the hospital. Upon discharge, the physician must verify what medications the patient is to continue taking by indicating a "yes - continue" or "no - discontinue" beside each of the patient's prescribed medications.

Medication errors have been reduced because the physician can view, compare, or delete medications no longer required in the care of the patient. This policy has increased patient safety because of the elimination of dual prescribing. Overall, hospital charges have decreased because of declining pharmacy charges and diminished staff time at discharge to verify correct patient medications. The financial impact has not been completely evaluated due to the short timeframe since implementation.

For further information, contact JoAn Headington, vice president of operations, at (319) 235-3997 or Chris Clayton, director of pharmacy, at (319) 235-3510 with Allen Memorial Hospital.

■ Vinton¾Virginia Gay Hospital

Virginia Gay Hospital in Vinton has implemented a safety and efficiency strategy that works! In January 1998, the 58-bed, long-term care unit initiated OPUS (a color-coded cassette unit dose system). Each cassette is color-coded for the time of day that medications are administered.

Medication errors have been reduced by 49 percent because the nurse or oral medication technician can visualize whether all medications have been distributed for each medication pass simply by viewing the color of the cassettes. The financial investment of $3,500 covered the cost of purchasing two carts with the cassettes for 58 patients. This method greatly increased accuracy in medication administration and patient care.

For additional information about the OPUS system and the benefits achieved, contact Michele Schoonover, Director of General Service and Coordination of Safety, at Virginia Gay Hospital (319/472-6200).

■ Sac City¾Loring Hospital

Several small steps have culminated in improving the delivery of safe, quality care at Loring Hospital in Sac City:

- The standardized abbreviation list is being reviewed and revised;
- Physician orders that are not legible are verified before filling the order;
- The precise use of decimal points with no trailing zeros on medication orders is carefully managed; and
- All new and/or changed orders are reviewed at change of shift with oncoming staff.

These directives have minimized drug errors and maximized patient safety.

Computer generated reports provide trending of medication errors and incident reporting, making the environment a safer place for patients and employees.

The financial investment can be counted in the time and wages expended for staff to implement the change and become familiar with the computer programs. For additional information, contact LaRue Schade at Loring Hospital (712/662-7105).

■ Manchester¾Regional Medical Center of Northeast Iowa and Delaware County

After 1999 second quarter data identified a significant increase in drug omissions and transcription errors, Regional Medical Center of Northeast Iowa and Delaware County in Manchester developed a "Meds-I-Pass" quality monitoring project. The project was instituted even though the Manchester hospital numbers were low compared to other hospitals in Iowa of similar size (CORS data).

Pharmacy staff working collaboratively with the medical/surgical nursing staff instituted a form that challenged each team to decrease medication errors. Medical errors were decreased while at the same time the medication administration process was improved.

A contest was developed to effectively retrain staff to administer medications safely and improve documentation. Participants were awarded points for performing certain tasks, proper documentation, and investigating and promoting a safe medication delivery review.

The staff was divided into three teams with leaders being responsible for collection and tallying of points for the team. Daily points were tallied by each individual and reported on a spreadsheet. The spreadsheet was collected and reported on every two-weeks. Teams were divided according to weekends worked to facilitate coordination and planning of poster displays, skits, etc.

The goal of decreasing medication errors was realized, patient safety and improved outcomes were accomplished. The financial investment for the project was minimal.

For more information, contact Pat Doyle, vice president, at 319/927-3232.

■ Independence¾People's Memorial Hospital of Buchanan County

At People's Memorial Hospital in Independence, staff from the pharmacy and nursing departments has been collaborating on successful initiatives that have positively affected the delivery of patient care.

A Safe Medication Committee has begun; one outcome to date has been a new reporting forum to track the flow of medications from order to administration. The committee has updated policies and procedures concerning safe medication practices.

- Communication and collaboration between pharmacy and nursing has been significantly improved.
- A sizable increase in the number of medication error occurrences has been reported due to the new forum verses the previous process emphasis.
- The financial investment and impact on the hospital's operating budget has primarily involved staff commitment to committee work.

- An increased emphasis and time spent on quality improvement as the number of occurrences have been reported. Review of the cause and effect of each occurrence has been done by the nursing staff.

Another successful initiative has been the enactment of standardized ranges for sliding scale insulin on preprinted physician order forms. In the past, there were multiple ranges for sliding scale insulin, causing some parameters to be omitted on occasion. Currently, the ranges are set and the physician identifies the specific amount of insulin to be administered.

There is evidence of early success and improved patient safety because of this change in care delivery. It is hoped that this initiative will serve as a catalyst for the development of more standardized physician orders.

For more information contact Christie Bitterman, RN; Kathy Post, RN; or William Hicky, pharmacist, at People's Memorial Hospital at 319/334-6071.

Jefferson¾Greene County Medical Center

Greene County Medical Center in Jefferson, working through a multi-disciplinary performance team, has initiated several quality improvement projects to prevent medical errors and increase patient safety. Over a two-year period, the team reviewed medication errors, critiqued current literature, and implemented an improved reporting system, which captured the type of error (i.e., error of omission or commission). A tracking system to analyze the entire process of medication delivery has been instrumental in determining where corrections were needed to improve the process. Implementing the following projects has significantly reduced medication errors:

Potassium Chloride

- In January 2000, potassium chloride vials were removed from floor stock in the patient care areas.
- KCL is now stocked only in pharmacy. The shelf area in pharmacy is marked with RED TAPE to call attention to product difference. This has eliminated the possibility of mistaking KCL with normal saline or bacteriostatic water.
- Financial investment considered minimal.

Pharmacy Computerization Leading to Computer Generated Medication Administration Record (MAR)

- Computerized MARs were implemented in January 1999 following the purchase and installation of a pharmacy software package.
- Transcription errors have decreased. The pharmacist is able to identify drug-to-drug interactions, and multidisciplinary intervention with the dietician has improved food-to-drug interactions.
- Over $50,000 has been invested in software and hardware. Paybacks have improved clinical monitoring of medication profiles and increased patient safety.

Performance Improvement Study on Physician Prescribing:

- Pharmacists conduct on-going review of physician orders. Statistics are maintained in prescribing irregularities (i.e., prescribing tablets rather than specifying milligrams, use of non-approved abbreviations).
- This activity enhanced physician-prescribing practices. Each physician is provided feedback on individual improvements.

- Financial impact was minimal. However, greater productivity and satisfaction was achieved for physicians and nurses because doctors received fewer calls to verify orders. Medication errors have declined.

P1 Study on Physician Prescribing

- This progressive rural hospital implemented a unit dose system in 1990. The initial cost of increasing the full-time equivalent of a pharmacist and pharmacy technician has been recouped because of improved medication delivery and heightened safeguards for patient safety.

For additional information on these successful medical/medication practices, contact: Greene County's Cindy Carstens, clinical care nurse manager, at 515/386-2114.

Patient Safety – Staff Policies Procedures

Shenandoah¾Shenandoah Medical Center

Vivian Reed, coordinator of Continuous Quality Improvement at Shenandoah Medical Center, generously submitted 14 examples of successful initiatives that have been implemented at their southwest Iowa hospital. She emphasized that innovative changes that lead to increased safety measures in patient care need not involve a large financial investment, and may simply be a policy or procedure that positively affects the delivery of care.

Following are three short excerpts from the Medical Center:

- Senior Solutions (Psychiatric Department) began the "Panic Button System" in April 2000. Staff wears buttons while providing care to psychiatric patients. If there is a significant change in patient behavior to suggest lessening of control of the situation, staff activates the panic button. This action immediately brings additional people to the unit to assist in providing safe care to the patient. This change, combined with staff education on the appropriate management of assaultive behavior, has significantly reduced both patient and staff injuries. Incident reports are reviewed monthly, data and trending concerning the reduction of injuries, and the use of medication--all safety and quality procedures.
- In four months, the Obstetrics Department developed and implemented department-wide orders for labor and delivery, postpartum, and newborn care. Previously, three different sets of orders were utilized, occasionally causing confusion about what was considered routine for which patient. Before the change was implemented, this practice increased the threshold for errors to occur. Since implementation, safe patient care is more secure.
- The Medical/Surgical Unit facilitated the implementation of a "Fall Risk Assessment and Alarm Program." An assessment tool was developed which enabled identification of patients at risk of falling. Patients meeting the criteria were provided "fall alarms" to wear. This increased safety by identifying the high-risk patient, and alerting staff when this patient attempts to get out of bed without assistance. The program has decreased the number of falls from 10/1,000 patient days to 3.51 falls per 1,000 days, which is below the state of Iowa average.

For additional information, contact Shenandoah's Vivian Reed at 712/246-1230.

Boone¾Family Birth Center of Boone County Hospital

The Family Birth Center of Boone County Hospital has implemented an infant security system to enhance the protection and safety of newborns at the hospital. The new system is a computer-generated chip, which is attached to the baby's umbilical cord. The transponder prevents infant removal from the obstetrics unit and offers security for the parents and the newborn.

A computer chip is fitted to the baby immediately after birth. The chip becomes activated when clamped down onto the umbilical cord, and remains active until the baby leaves the hospital (24-72 hours later). The obstetrics department ceiling is equipped with "exciters," which track the movement of the infant throughout the department. If a baby leaves the OB unit, the alarm system is activated, the doors and elevators lock down, and alarms sound. Hospital employees go to designated checkpoints, and the hospital in essence, shuts down until the baby returns to the maternity department.

Newborns continue to wear identifying wristbands connecting them to their mother in order to prevent mistaken identity. Many Iowa hospitals have implemented infant security systems due to the recent increase of infant abductions from hospital nurseries across the nation. The cost for providing this security ranges from $8,000 - upward; but most hospitals agree the increased security for the family unit and the heightened peace of mind for all warrant the expenditure.

For additional information on the Boone County Hospital experience, contact Denise Turner, director of Inpatient Services, at 515/432-3140.

Technology

- **Cedar Rapids¾Mercy Medical Center**

Mercy Medical Center in Cedar Rapids installed the McKesson HBOC Robot-Rx in May 1999. A trial using the Robot-Rx began in August, with full implementation achieved in October. The Robot-Rx is a centralized robotic drug distribution system that automates the storage, retrieval, and dispensing of unit dose, bar-coded inpatient medications. The robot currently handles 82 percent of all medications distributed through the unit dose cart fill process.

Advantages realized by the Robot-Rx are:

- Accuracy of picking unit dose medications;
- Reduction in the amount of pharmacist and technician time required picking and checking unit doses being sent to the inpatient areas;
- Automation of medication control within the pharmacy.

AcuDose unit-based cabinets for the dispensing of stat, prn, and controlled substance medications were installed and implemented in 11 areas in April 2000. AcuDose has provided more control on these medications, made stat and prn doses more readily available, reduced inventory, and dramatically reduced the amount of time and paperwork for both pharmacy and nursing services.

Both systems are leased from McKesson. The cost over five years is estimated at $1.2 million, which includes site preparation, installation, rental, maintenance, and material costs.

Savings will occur primarily through the redeployment of pharmacists into clinical activities.

Additional information may be obtained from Jan Wenger, Director of Pharmacy, Mercy Medical Center in Cedar Rapids (319/398-6060).

Patient Safety and Health Outcomes:
IHA Initiatives and Position

Background

A report entitled: "To Err is Human: Building a Safer Health System" released in November 1999 by the Institute of Medicine (IOM) and corresponding news reports have focused public attention on medical errors. Patient safety initiatives have been seen at the federal level as well as in many states during 2000. Iowa hospitals and health systems' primary focus is on quality improvement through utilization review, peer review, quality improvement projects specific to each institution, and evaluation of medical errors. As the Institute of Medicine Report points out, there are very good systems in place for preventing and reducing medical errors, but systems can always be improved.

The American Hospital Association (AHA) in December 1999 initiated a campaign to help hospitals examine and further improve medication safety, the number one cause of medical errors in hospitals. As part of this campaign, AHA formed a relationship with the Institute for Safe Medication Practices (ISMP) to improve patient safety by reducing and preventing medication errors. The ISMP has helped AHA provide hospitals with an inventory of successful practices for reducing errors that hospitals can adopt. Other objectives of this campaign are:

- ✓ Sharing "best practices" with all hospitals
- ✓ Developing a Medication Safety Awareness Test that assesses a hospital's progress on implementing safe practice recommendations and allows ISMP to track hospital successes.
- ✓ Working with national experts to develop a non-punitive model medication error reporting process, and
- ✓ Serving as a clearinghouse of information and resources.

IHA Initiatives During 2000

- Developed a position statement and principles to be used in evaluation of federal and state legislation.
- Supported the American Hospital Association initiatives listed above.
- Evaluated existing databases and quality of care reporting systems (IHA Comparative Outcomes Profile Program from the Indiana Hospital & Health System Association, Quality Improvement Project of the Maryland Hospital Association and the Comparative Occurrence Reporting System from the University of Iowa) for medical error data. Key findings were: data components from the existing systems assess procedural results and quality of care and do not necessarily measure medical errors, definition of terms and data elements varied between systems, a majority of Iowa hospitals did not participate in any one system, and data reported also varied among hospitals.
- Evaluated the possibility of a voluntary program of medical error reporting by Iowa hospitals prior to any national or state mandate. Without patient confidentiality and discoverability protections a voluntary program is not possible.

- Implemented a “Successful Practices” survey to identify practices that improved patient safety and quality of care. Successful practices are being shared with IHA membership through the IHA Friday Mailing and will be organized into a compendium. The successful practices are also on the IHA website.

- Explored partnerships with public and private organizations to provide information, educational programs and other activities addressing patient safety.

2001 IHA Position on Patient Safety

The issue of patient safety has received a great deal of national attention with the release of the Institute of Medicine’s study on medical errors in December 1999. While this study has focused the public’s attention, the issue of medical errors has long been an area of focus for hospital risk managers. All hospitals take steps to examine errors when they occur by the use of quality improvement and peer review activities. In addition, the JCAHO recommends the non-punitive reporting of sentinel events for those institutions it accredits. Several models for reporting systems for medical errors have been proposed both by the federal government and the State of Iowa. Some of these models include legal protections for hospitals that report this information to outside entities.

IHA has researched the types of data currently being collected by hospitals. In addition, IHA is in the process of collecting “best practices” from Iowa hospitals to share with members. If a medical error reporting system is implemented it *must* be done in a non-punitive manner to be effective in decreasing medical errors. Any reporting system must include clear legal protections for hospitals that report information to outside entities.

Principles adopted to assist IHA and its members evaluate various legislative proposals

- Evaluate the effectiveness of current reporting systems for medical errors before legislating another reporting system.

- Definitions of medical and medication errors need to be established and standardized to do comparative benchmarking.

- Sentinel Events used by JCAHO should be the type of medical error data reported.

- Participation in any reporting system should be voluntary rather than mandatory.

- The reporting system must protect patient privacy and confidentiality.

- The data voluntarily reported by hospitals/systems should not be discoverable.

- Establish a non-punitive environment protecting health care provider confidentiality where error data is analyzed for quality improvement.

- Any reporting system must be an integral part of the hospital/system quality improvement and utilization review processes.

- A reporting system should include national, state and meaningful/relevant peer group data.