Using Technology to Improve Safety through Accurate Weight Documentation
University of Maryland Medical Center

Program/Project Description.
Many medications are dosed by patient weight. Some of these medications include high risk drugs that may cause patient harm if not dosed accurately. Inaccurate weight documentation may lead to errors in medication dosing. The ability to document weight in either metric or imperial units creates an additional potential for errors in weight documentation in patients’ medical records. A baseline weight audit showed that there was a greater than 10% difference between documented Admission Weight & the Measured Weight in 29.2% patients audited. There was a greater than 10% difference between the documented Flowsheet Weight & the Measured Weight in 18.8% patients audited. The goal was to ensure that accurate patient weights are documented in the medical record to promote appropriate medication dosing and prevent medication dosing errors.

Process.
A multi-professional committee was formed to review the current practice of weight documentation. The committee consisted of representatives from the following areas: pharmacy, medicine, nursing, information technology, and professional development. Reported Medication Events were reviewed and discussed. Current practice was evaluated. The approach was to standardize the weight documentation process and to use technology to promote compliance and safety.

Solution.
We standardized to the metric system for weight and height documentation. We no longer have the ability to document weight and height in imperial units in our electronic medical record, although both metric and imperial units display after a value is entered as a double check. We limited the autopopulation of online weight documentation from multiple online forms. We standardized online weight documentation on admission to intake forms only, and we standardized routine weight documentation to one form for all areas. We implemented alerts in our computer system to promote compliance and safety. We implemented an alert to nurses to obtain a measured weight for all patients within 24 hours of admission. This alert fires to nurses when a patient's chart is opened if a measured weight is not documented within 24 hours of admission. Nurses may defer for 24 hours if they are not able to obtain a measured weight at that time. We implemented alerts to both nurses and prescribers if there is a greater than 10% difference in the last two charted weights. Nurses are prompted to confirm the last documented weight, correct the last documented weight, or they may defer for 12 hours. Prescribers are alerted to review medication doses to assess if changes are necessary based on the most recently charted weight. We also have alerts for weights that are outside of the expected range. An alert will fire if an adult patient’s weight is greater than 181.8 kilograms or 400 pounds. The nurse must confirm the patient’s weight before proceeding. Hard stops have been implemented for charted weights of greater than 454.5 kilograms or 1,000 pounds and for weights less than 31.8 kilograms or 70 pounds for adult patients.

Measurable Outcomes.
We are working with our IT department to develop a report to assess the percentage of patients who have a documented measured weight within 24 hours of admission. We also intend to query our medical record to determine the percentage of patients with a greater than 10% difference in two documented weights. Because there is one standardized online form that documents weights, providers have expressed that tracking weight trends is much easier.

Sustainability.
We have used technology to ensure compliance and to promote safety. We plan to develop additional rules within our electronic system for pediatric patients of different ages. For example, we will develop expected weight ranges for babies in the Neonatal Intensive Care Unit. If a weight is entered that is outside of the expected range, we have the ability to either fire an alert or to develop a hard stop with notification to the provider that the documented weight is outside of the expected range.
Role of Collaboration and Leadership.
Teamwork and collaboration was key to developing and implementing our solution. Senior leadership was engaged and supported the standardization to the metric system with one standardized online form for routine documentation of weight. Senior leaders supported the development of system alerts to providers for weights outside of the expected range and for weight changes greater than 10%. Partners in this collaborative effort included pharmacists, physicians, nurses, coordinators in professional development, and representatives from information technology.

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