Check Boxes Are No Substitute for Narrative Documentation

Thank you for Lisa Day’s insightful article, “What Is Documentation for?”1 Although I too understand the importance of standardized documentation for auditability of regulatory requirements, documentation that consists of only standardized charting fails to demonstrate critical thinking and the true art of nursing. It teaches up-and-coming nurses that the context and relational aspects of nursing practice are not important.

I use narrative format often to express my concerns or document why I chose to act in a certain way, how patients responded to my actions, and if I phoned a physician exactly what I told him or asked of him. Not only does this serve as a communication tool for other nurses and ancillary departments caring for the patient, but I believe it protects me from liability. This sort of documentation can portray critical thinking in a way that standardized check boxes do not. The following is an example of my documentation:

2000: On initial assessment, patient found to have peak airway pressures consistently running 48-52 on current vent settings of AC 12, VT 750, PEEP 5, FiO2 40%, with sedation level at a Modified Ramsey of 3 on Propofol @ 25 mcg/kg/min. No spontaneous respirations over vent settings at this time. Breath sounds present bilaterally in all lung fields and diminished in bases. R chest tube to -20 CM suction with air leak present. SubQ emphysema noted to R anterior chest area as was also reported by day nurse, with no increase in crepitus outside of marked area. ET tube suctioned for scant amount of thick pale yellow secretions with no improvement in peak airway pressures. Morphine 4mg IV given.

2015: No improvement in peak airway pressures (50-55) after morphine. Modified Ramsey remains at level 3 on Propofol at 25 mcg/kg/min. AM CXR results reviewed and reveal an R sided 10% residual pneumothorax and subQ emphysema, which is noted in today’s progress notes by the pulmonary physician. Propofol increased to 35 mcg/kg/min. Respiratory therapist (RT) notified of peak airway pressures for assist in troubleshooting.

2030: Modified Ramsey level now at 4 on 35mcg/kg/min of Propofol. Peak airway pressures remain greater than or equal to 50 despite suctioning, and increased analgesia and sedation. RT attempted to decrease peak pressures by changing the waveform and adjusting the I time with no improvement in peak airway or plateau pressures. Call placed to Dr So and So.

2045: Dr So and So notified of consistently elevated peak airway pressures 48-55 despite analgesia, increased sedation, suctioning and I time changes by RT. Dr So and So states, “I am not worried about his airway pressures. He has stiff lungs.” I reminded him of the SubQ emphysema and 10% residual pneumothorax on AM CXR, and voiced my concerns regarding barotrauma and volutrauma. He states there is not anything to be done. I asked for possible vent changes such as decreased VT or pressure control ventilation. No further orders received.

I believe that this sort of charting communicates to any caregivers following me that the airway pressures have been this way, it conveys all the troubleshooting measures that were attempted and their results, and it makes clear that the pulmonologist is aware. It adequately demonstrates the nursing process and my critical thinking regarding the patient in my care. It also covers me in the event the patient develops a tension pneumothorax. None of this would be accomplished by the check boxes in our charting.

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None reported.

REFERENCE
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Investigators Did Not Follow Guidelines for Evaluating Point-of-Care Glucose Testing

In your January 2009 issue, Cook et al1 compared glucose meter results for central venous catheter (CVC) blood and fingerstick to a laboratory method for CVC blood, and observed meter error that purportedly would lead to faulty treatment decisions. Although we agree with the “split-sample” design (ie, testing portions of the same
blood sample with the meter and laboratory method), we believe the data were confounded by
the authors’ failure to follow Clinical and Laboratory Standards Institute (CLSI, formerly
the National Committee for Clinical Laboratory Standards) recommendations in several crucial aspects.2

The authors state that the average time from blood sampling to laboratory analysis was less than 1 hour.
However, CLSI recommends either blood analysis or centrifugation and erythrocyte removal within 5 min-
utes of collection, because longer delays can produce marked changes in glucose concentrations due to gly-
colysis.3 The bias and imprecision of the laboratory instrument (Olympus AU640) were not established,
duplicate meter and laboratory tests were not performed, and the hematocrit was not measured for each
sample. (Chart recordings were used.) Some patients clearly had hematocrits below the labeled lower limit
for the point-of-care meter system used in this study, the SureStepFlexx.

The authors state that glucose meters are normally calibrated to capillary blood glucose and must be
adjusted to measure venous blood glucose. However, no such adjustments are either necessary or desirable
for SureStepFlexx, which, like most glucose meters, displays plasma-equivalent glucose results.

Finally, the data analysis is problematic. The authors cite glucose differences greater than 20 mg/dL
as significant. However, CLSI defines clinical accuracy as meter results within ±20% of a reference method
for glucose ≥75 mg/dL (or within ±15 mg/dL for glucose <75 mg/dL). When we apply these criteria to Fig-
ure 1, most reported differences appear to meet the CLSI standard.

In summary, this study contains methodological flaws that may have skewed the data. Investigators
should follow published standards and guidelines for glucose meter evaluations.4 Furthermore, the authors
provide no evidence for the premise that a device meeting current performance standards may lead to incorrect treatment.

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John J. Mahoney, John M. Ellison, and Alan T. Cariski are
employees of LifeScan, Inc, the manufacturer of the
SureStepFlexx System, and are stockholders in Johnson &
Johnson, the manufacturer’s umbrella company.

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Response:
Thank you for your letter regarding our article,
“Differences in Glucose Values From Point-of-Care
Glucose Meters and Laboratory Analysis in Critically Ill Patients.”

Our selection, a priori, of glucose differences of more than 20 mg/dL as being significant was based
on a clinical judgment. It was not tied to an industry standard related to use of a point-of-care (POC)
device for trend monitoring of glucose. Glucose determinations in critically ill patients are used for
titration of continuous intravenous insulin infusions based on narrowly defined ranges of glucose
values, necessitating a performance level that is more precise than what may be acceptable for trend
monitoring.

We agree that the POC device used in this
study did perform as described in the manufactur-
ner's information. The concern we raised based on
the results of this study, as well as those raised by
other recent publications,3,4 is related to whether
devices with this level of precision are appropriate
when used for therapeutic insulin manipulations,
not trend monitoring, in critically ill patients.

This study was designed to determine the dif-
ference in POC and laboratory glucose values
under circumstances of usual device usage (multi-
ple device users, venous and capillary blood sources,
in patients with normal and low hematocrit [HCT]
levels), including typical laboratory turnaround times.
Whereas the rate of glucose degradation prior to lab-
oration determination varies, most laboratories esti-
mate this glucose decrease to be less than 7 mg/dL
per hour. Because time from blood sampling to labo-
atory analysis for stat specimens is less than 30 to 40
minutes, this “delay” represents a small potential
change in glucose (3-5 mg/dL). Although national
laboratory standards groups may recommend no
more than a 5-minute delay, most clinical laborato-
ries in acute care hospitals do not or cannot process
samples that rapidly.

Data from this study concur with the con-
cerns voiced in other studies2,4 of using POC glu-
cose devices in patients with HCT values below
the labeled lower limit (depending on the manufac-
turer, HCT less than 30% to 35%). Unfortunately,
most clinical facilities do not restrict the use of
these devices in patients with abnormally
low HCT values, a clinical situation that is present in many hospitalized patients. Data from this clinical study emphasize the need to restrict use of POC devices to individuals with relatively normal HCT levels.

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