Adverse Events

Measuring Adverse Events in Psychiatry

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Measuring and improving quality of care in hospitals is a growing health policy requirement. Outcomes need to be demonstrated, report cards are to be posted on the internet for comparison, data are required to be gathered, and a continuum of clinical practice striving toward measurable goals needs to be demonstrated.

Generic screening criteria to identify what constitutes adverse events have not been agreed upon or delineated in psychiatry. For example, hospitals track "sentinel" and other events, among which mortality and readmission rates for post-surgical complications and postoperative infection rates are included, as well as administration of required medications within a specified duration of a medical event. These generic screening criteria were developed in the early 90s and continue to be widely utilized for evaluating quality of care. Although such parameters exist for measurements in general medicine and surgery, no such standards exist in psychiatry.

Adverse events may be defined as unintended injuries caused by medical management resulting in prolongation of a hospital stay or in diminished function/disability at the time of discharge. Accordingly, severe adverse events would constitute those that result in the death of a patient or permanent or prolonged disability.

The Agency for Healthcare Research and Quality (AHRQ) developed a set of patient safety indicators for identifying suspected instances of compromised patient safety based on hospital administrative data.[1] These were not pertinent to psychiatry.

Among the potential patient safety events of surgical, medical, and obstetric patients, published in *Health Affairs* in 2003, no psychiatric care indicators are included.[2] Although Romano et al[2] made a concerted effort to evaluate those ethnic groups and age groups that were most prone to certain safety events, no psychiatric care problems have been identified. Their data only took into consideration general medical, surgical, and obstetric data.

Bates et al[3] reported in a patient safety forum in 2003 that the highest rate of adverse drug events was on an inpatient psychiatric unit. The authors point to the lack of clear evidence in psychiatry of the nature and types of errors. They call for further investigation in this regard.

As Pronovost[4] indicates in his report on May 14, 2008, although complications can be measured with reasonable accuracy, the degree of preventability must be estimated accurately too. With psychiatric patients this is not an easy task. The patient's role in negative developments of treatment is variable, sometimes ambiguous, and at other times, not detectable. Who is to blame when participation in a treatment regimen is greatly affected by a

patient's mental state, competence, or ability to report accurately? These problems are particular to vulnerable psychiatric patients and could affect their medical care as well.

Mortality is not a common occurrence in psychiatry. We could use prior admission, rehospitalization within a month of discharge, unexpected prolongation of hospital stay, adverse drug reactions, medical complications resulting from comorbid conditions, serious cognitive dysfunction as an unexpected outcome of treatment, noncognitive complications of electroconvulsive therapy (ECT), suicide, or other serious self injury with complications as indicators of quality. We could also, for example, include unexpected transfer to a medical service, cardiac complications, and suicide after an improper discharge from the emergency department to assess quality of care.

Therapeutic drug monitoring has stimulated clinical pharmacological research including investigations on inherited differences in drug metabolism that are closely linked to drug monitoring in psychiatry. Pharmacokinetic drug interactions play a role in adverse events. Complex tasks involving the prescriber, the lab specialist, and the clinical pharmacologist as well as the patient may result in errors that can be detected by the appropriate use of therapeutic drug monitoring.[5]

Other adverse events that are commonly discussed for their roles in clinical psychiatry are the pharmacokinetics of atypical antipsychotics, plasma concentrations of second-generation antipsychotics, and clinical responses.[6]

Glassman et al[7] have described the mechanisms that lead to Torsades de Pointes and sudden death with antipsychotic drugs. Prolongation of the QTc interval and drug-drug interactions that may pose a risk have been described in the literature,[7] as have concerns about weight gain, hypoglycemia, diabetes, increases in lipid levels, and cardiovascular events from the use of atypical antipsychotics.[8]

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What are some efficient ways for hospitals to target specific psychiatric events with a high percentage of yield either by one or a combination of strategies? The likelihood that an electronic-based system, used by hospitals, will yield more numbers of such events is certain; however, the specificity of such a yield remains to be demonstrated. Also, self reports are highly variable. We need to be able to show that generic screens, such as chart review, do not yield a high rate of false-positive results. What should be the qualifications of the screener to demonstrate reliability? Do all adverse events have a clear, linear relationship with the quality of care? Screens can be combined to reduce false positives. Which of these would be the best way to demonstrate how to improve psychiatric care quality? Also, how do we know if any specified measure is both sensitive and specific for detecting adverse events?

Bates[9] in 1995 noted that using univariate or multivariate comparisons by logistic regression in which the dependent variable was the presence of an adverse event was important in assessing the validity of the screens that were used.

We could, in psychiatry, use both sensitivity and specificity and positive predictive values by the use of reliable screens; we could also determine on what to focus, among our admissions, as adverse events that would be critical to the quality of care.

We may have to use several layers of screening to determine the impact of an adverse event. For example, one method might be to use a database of self-reported events followed by a chart audit by two independent, qualified reviewers to calculate interrater reliability, followed by an examination of trends that pertain to a unit of service or individual, and finally, use statistics to measure not mere percentages but reliability as well as validity. We need to show that the measure/s used are specific to the event.

Generalizabilty from the examination of events from one urban hospital to other community hospitals or smaller hospitals that are staffed differently or serve less critically ill patients is difficult. Applying lessons learned from one institution may only be partially applicable to others. So we may have to categorize hospitals by tiers of complexity, establish standards or benchmarks, and work with each other to coordinate goals.

What about the costs involved in using these strategies? Bates[9] estimated these costs. They are not applicable to psychiatry. Such costs are not included in the reimbursement for care provided nor is the time built into job descriptions of various disciplines. Such an effort would take

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consistent investment of time and attention by service or hospital leadership to effect change.[9]

The examination of psychiatric adverse events in a systematic, reportable format with transparency and clarity is in its fledgling stage. Progress is inevitable with more attention being paid to decrease untoward events and promoting quality.

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