

Improved Hospital Quality Measures with Automated Pupillometry

Quality measures help quantify healthcare processes, outcomes, patient perceptions, and organizational structure. They are associated with the ability to provide high-quality health care and relate to one or more quality goals for health care. These goals include: effective, safe, efficient, patient-centered, equitable, and timely care. Ongoing quality improvement is a cornerstone for all hospitals and automated pupillometry is a natural fit as hospital quality continues to evolve.

Accurate Pupil Assessments Independent of Examiner

Assessment of pupil size and reactivity is a fundamental aspect of the neurological examination; however, manual pupil assessments (penlight) are subjective and fraught with a high degree of inter-examiner variability. A recent prospective study from *The University of Texas Southwestern Medical Center* found a large degree of disagreement between trained observers when assessing and scoring pupillary findings with a penlight.¹ In this study, under identical conditions, two assessors simultaneously evaluated the left and right pupils of consented patients. 1,183 paired exams were performed by neurology and neurosurgery attending and resident physicians, staff nurses and mid-level practitioners. Automated pupillometry provides completely accurate, reliable and objective pupil data, independent of examiner, resulting in a significant quality improvement for this important component of the neurological examination.

Adherence to Hospital Protocols and Guidelines

Standard hospital protocols and guidelines for neurologically injured patients call for pupil assessments at regularly scheduled intervals. A typical day with a critical patient requires lab draws, trips to CT scan, titrating drips, tending to the patient's family and more. Despite best intentions, nurses might miss a scheduled exam, or just make a judgment call on pupil status without actually performing the assessment. One key feature of automated pupillometry is that each assessment is time and date stamped and automatically uploaded to the patient's record. This provides hospitals with another tool to help monitor and ensure quality compliance and adherence to protocols and guidelines.

Manual Data Entry and Upload-Accidental Entry Errors

Despite best intentions, entry errors during charting and manual upload can occur. With automatic upload of data directly from the pupillometer, any possibility of accidental data entry error is eliminated, thus removing this quality concern completely.

¹"Interrater Reliability of Pupillary Assessments Among Physicians and Nurses." University of Texas Southwestern Medical Center. Neurocritical Care Society Meeting. Seattle, Washington.