



Correspondence

Re: Goldstein et al: Visual acuity: assessment of data quality and usability in an electronic health record system (*Ophthalmol Sci.* 2023;3(1):100215)



TO THE EDITOR: Goldstein et al¹ from Johns Hopkins have performed an elegant and important analysis of their data quality associated with ophthalmology's most important variable, visual acuity (VA). They concluded that direct analysis of electronic medical record (EMR) data at their institution was less than ideal, and even reconstructed data had limited reliability. The problem may be due in part to sloppy direct data entry, but is primarily a result of historically incorrect EMR formatting of VA data. After decades of EMR evolution, is quality VA data *dead*?

Encouragingly, the study noted that my subspecialty of pediatric ophthalmology, which directly deals with non-numeric classification of VA, still had one of the lowest levels of VA unusability (4.5%). Perhaps there is hope. You mention computer-adaptive VA testing and predefined VA-structured fields. How would the authors suggest concrete solutions to the otherwise dismal VA direct data reliability? What solutions are quick, simple, and efficient for the technician while also providing reasonable reliability?

Age-based, physiological evidence has recently been employed to provide unique digital equivalents for both pediatric fixation-based VA and low-vision designations similar to your "internal data dictionary" for VA.² The publication provides formulae that convert such digital or descriptive visual acuities from United States customary units and metrics to logarithm of the minimum

angle of resolution (logMAR) and back. What level of logMAR would the authors assign to no light perception blindness?

What would it take for all the ophthalmology EMR systems to abandon the alpha character formatting for VA and convert to a uniform, digitally useful version? The sooner, the better. Researchers, policy-makers, physicians, taxpayers, and patients deserve it.

ROBERT W. ARNOLD, MD

Pediatric Ophthalmology and Strabismus, Alaska Children's EYE & Strabismus, Anchorage, Alaska

Disclosures:

The author has completed and submitted the ICMJE disclosures form. The author has made the following disclosures: R.W.A. is President and board member of PDI check, which holds a patent and provides a visual testing game for the autostereoscopic screens such as the Nintendo 3DS.

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Correspondence:

Robert W. Arnold, MD, Alaska Children's EYE & Strabismus, 3500 Latouche #280, Anchorage, AK 99508. E-mail: eyedoc@alaska.net.

References

1. Goldstein JE, Guo X, Boland MV, Smith KE. Visual acuity: assessment of data quality and usability in an electronic health record system. *Ophthalmol Sci.* 2023;3(1):100215. <https://doi.org/10.1016/j.xops.2022.100215>.
2. Arnold RW. Digital values for alpha acuities. *J Pediatr Ophthalmol Strabismus.* 2021;58(2):132–135. <https://doi.org/10.3928/01913913-20210111-02>.