children (64% with 2003 refractive and strabismic risk factors), 2WIN refraction screen achieved sensitivity, specificity and PPV of 59%, 86%, and 88% while adding CR improved to 69%, 88%, and 91%.
Discussion: 2WIN provided valid estimates of astigmatic power and axis and hyperopia compared to Retinomax in delayed and normal children and adults. The new CR strabismus function reliably estimated prism cover test in horizontal and vertical deviations.
Conclusions: CR wand with 2WIN is useful for community pediatric screening and strabismus clinic.

052 Numeric equivalents for alpha acuities: salvation for EMR research disasters. Robert W. Arnold
Introduction: You are interested to know how much vision improvement happened with your amblyopia care or cataract surgery? Your techs have labored costly hours to meticulously record patient data. Sounds simple, but your electronic medical record (EMR) CANNOT give you the answer. Why not?
Methods: Multiple EMRs were evaluated to determine whether the visual acuity fields (and refraction and motility fields) are either numeric or alpha formatted. Pediatric preverbal vision research and a previous digital conversion were reviewed.
Results: Many prominent EMRs have not formatted visual acuity fields as numeric in part because some adult patients have poor vision characterized as count fingers (CF), hand movement (HM), light projection (LProj), light perception (LP) or no light perception (NLP). Children also have alpha acuities: centered (C), steady (S) and maintained (M). An American and International logMAR paradigm is proposed to simplify digital conversion of typical alpha acuities: CSM (0.44), CS (0.86), C (0.97) in addition to NLP (2.50), LP (2.30), LProj (2.20), HM (2.00), CF (1.70).
Discussion: EMR 'upgrades' may prioritize billing over research, so programmers have defaulted certain data appearance by alpha designating variables that require numeric formats to be analyzable. Reconfiguration of refraction and strabismus field formatting is also needed.
Conclusions: Pediatric ophthalmologists (AAPOS) should lead the effort to scientifically classify infant vision and low vision designations so EMRs have a chance to improve.

053 Long-term outcomes of baerveldt glaucoma implant (BGI) in management of glaucoma following congenital cataract surgery (Gf-CCS). Jane Ashworth, Siddharth Agrawal, Bhamy Hariprasad Shenoy, Susmito Biswas, Cecilia Fenerty
Introduction: Glaucoma is the most common vision threatening complication following congenital cataract surgery. Previous studies have shown Glaucoma Drainage Implants (GDI) to be relatively safe in management of paediatric glaucoma including Gf-CCS. These studies have been limited by small sample size and limited follow-up. Aim of this study was to assess long-term outcomes of BGI in management of Gf-CCS.
Methods: Retrospective interventional case series of children <16 years who underwent BGI for Gf-CCS. Age at cataract surgery <12 months and minimum post-BGI follow-up of 1 year was essential for inclusion.
Results: Forty-seven eyes of 41 patients (6 bilateral, 35 unilateral) were analysed. Mean age at cataract surgery was 10.1 10 weeks. Mean age at glaucoma diagnosis was 16.7 20.3 months. Mean age at BGI surgery was 47.3 55.8 months. 39 eyes were aphakic and 8 were pseudophakic. Mean IOP reduced from 29.96 4.75 mm Hg preoperatively to 15.1 5.15 mm Hg at the last follow-up ($P = 0.000$). Mean no.of glaucoma medication reduced from 2.9 1.02 preoperatively to 0.94 1.04 at the last follow-up ($p = 0.0000$). Mean duration of follow-up was 73.85 56.7 months (range, 12-193 months). One eye developed retinal detachment during the follow-up and resulted in no light perception vision. IOP < 21 mm Hg was maintained in 91.5% eyes at the last follow-up.
Discussion: Current study demonstrates that BGI results in effective control of IOP in children with refractory Gf-CCS. This study benefits from being the largest series with longest mean duration of follow-up.
Conclusions: BGI is a relatively safe and effective procedure for managing Gf-CCS in children and may be considered as the primary intervention in these cases.

054 The value of multiple telephone calls in ensuring follow-up after referral from vision screening. Chase R. Atiga, Connie J. Oh, Richard A. Ulangca, Leila M. Khazaeni, Jennifer A. Dunbar
Introduction: The success of a vision screening program depends on follow-up of referred children for comprehensive exam. This study evaluates the benefit of multiple phone calls to families of children referred from vision screening for scheduling follow-up appointments.
Methods: Families of children referred from vision screening between 9/2015 and 4/2018 were called up to 3 times to provide referrals and confirm follow-up. Children with scheduled appointments were marked 'completed follow-up'. Follow-up confirmation responses were compared according to number of call attempts made. Follow-up nonconfirmation responses for 1st calls, 2nd calls, and consecutive call responses were compared; χ^2 tests were performed for comparisons.
Results: 1928 (62%) referred children reported follow-up. 7102 telephone calls were made. Follow up yield after the 1st call was 25%. Of those children remaining, a 2nd call yielded 29% and a 3rd call 28% ($P = 0.007$). For 1st ($P < 0.001$), 2nd ($P < 0.001$), and consecutive ($P < 0.001$) call response comparisons, the "answered phone, without scheduled appointment" group (n = 116 [66%]; n = 156 [66%]; n = 43 [68%]) had higher follow-up than those "left a message" (n = 397 [36%]; n = 277 [28%]; n = 215 [26%]), which had higher follow-up than the "unable to reach" (n = 32 [18%]; n = 29 [15%]; n = 11 10%]).
Discussion: Improved communication following vision screening reduces barriers to follow-up compliance. In this study, follow-up rates increased with multiple phone calls compared to one phone call. Follow-up rates were higher for families reached by telephone than those for whom messages were left or who were unreachable.
Conclusions: Reaching families by pursuing multiple telephone calls is effective in increasing follow-up rates after vision screening referral.

055 Single lateral rectus resection in adult nonaccommodative esotropia. Vanessa K. Avellaneda-Chevrier, Helen A. Kim, Mrunalini D. Parvataneni
Introduction: One muscle strabismus surgery is typically avoided due to concerns about undercorrection or ocular incomitance. We report the results from a series of patients who underwent single lateral rectus resection to treat a symptomatic moderate angle nonaccommodative esodeviation.
Methods: A retrospective chart review was performed for 19 patients (aged 21-85) who were surgically treated with either a 6.0 mm or 6.5 mm unilateral rectus resection. Patients with esotropia between

15^{Δ}-25^{Δ} were included. Preoperative and postoperative sensorimotor exams were compared.
Results: Preoperatively, all patients had symptomatic esodeviation (mean, $17^{\Delta} \pm 2.83^{\Delta}$). Postoperative visits at <2 weeks resulted in an average angle of deviation at distance of $2.21^{\Delta} \pm 2.93^{\Delta}$ ($P < 0.0001$) for all patients. Postoperative visits with 13 of the 19 patients at greater than 6 months resulted in an angle at distance of $4.31^{\Delta} \pm 4.09^{\Delta}$ ($P < 0.0001$). Two patients were treated with prism glasses and one other with surgery for residual diplopia. No patients had symptoms from lateral incomitancy.
Discussion: Primary single muscle resection has not been typically performed except in divergence insufficiency. It is usually reserved for undercorrected or recurrent strabismus. Patients showed improvement in binocular function and had additional benefits of shorter anesthesia time, faster recovery, and less cost.
Conclusions: Unilateral lateral rectus resection as a primary procedure can be an effective surgical option in the management of adult patients with moderate angle esodeviation.

056 Ocular Trauma Score (OTS) versus adapted OTS in pediatric open globe injuries. Nashwa Badr Eldine, Maha M. Youssef, Ghada Gawdat, Ghada Osama
Introduction: Ocular Trauma Score (OTS) is a categorical system used for standardized assessment and visual prognosis of ocular injuries. Relative afferent pupillary defect (RAPD) is a variable that is difficult to assess in pediatric patients. An adapted OTS score was suggested excluding RAPD. In this study, we compare the prognostic value of OTS and adapted OTS in predicting the likely visual outcome of pediatric patients with open globe injuries.
Methods: A prospective observational study including children with open globe injuries. Initial and final best corrected visual acuity (BCVA) (after 3 months) were recorded as follows: (1) NLP (no light perception); (2) LP to HM (light perception to hand movement); (3) 1/200 to 19/200; (4) 20/200 to 20/50, and (5) ≥20/40. OTS and adapted OTS were calculated and compared regarding the prediction for final visual outcome.
Results: A total of 130 patients were included, ages (4-18; mean, 10.06 ± 3.94 years). The median initial visual acuity category (LP to HM) significantly improved to 20/200-20/50 ($P < 0.001$). OTS parameters analysis showed that the initial visual acuity category, retinal detachment and RAPD had a highly significant impact on final visual outcome ($P < 0.001$). The final visual acuity according to OTS and adapted OTS prediction was comparable with the achieved final visual outcome. Comparing both scores as a whole, OTS had a higher predictive value however not statistically significant ($P = 0.55$).
Discussion: Excluding RAPD would still make the OTS reliable and highly prognostic while rendering it much easier to apply.
Conclusions: Adapted OTS can be reliably used among pediatric patients.

057 Surgical outcomes for esotropia in children with high AC/A ratio. Reecha S. Bahl, Monique J. Cheng, Sabrina Dass
Introduction: To assess if high accommodative convergence/accommodation ratio (AC/A) impacts surgical outcomes in children with esotropia (ET).
Methods: A retrospective chart review identified patients who underwent primary bilateral medial rectus recessions (BMRc) for ET. High AC/A was defined as an increase of $\geq 10^{\Delta}$ deviation at near compared to distance. Outcome parameters were: (1) near and distance deviations $\leq 10^{\Delta}$ within orthophoria, and/or (2) presence of stereopsis (positive fly) postoperatively. Analysis used Yates' continuity correction, the Fischer exact test, and unpaired *t* test.
Results: Of 116 charts identified, thirty had a high AC/A preoperatively compared to 86 with normal AC/A. Mean age was 3.90 years (SD 2.71 years). Surgical success measured by postoperative alignment were 43% and 40% in the high AC/A and normal AC/A groups, respectively ($P = 0.88$). There was a statistically significant difference in postoperative stereopsis success, with 16% of patients with normal AC/A versus 44% of patients with high AC/A having positive fly on postoperative stereopsis testing ($P = 0.03$).
Discussion: In the setting of ET treated with BMRc, the presence of high AC/A does not affect surgical success as measured by postoperative alignment. However, patients with high AC/A preoperatively had a significantly improved surgical success as measured by postoperative stereopsis, compared to those with a normal AC/A. This difference is likely related to a partially accommodative etiology of misalignment when a high AC/A is present, compared to nonaccommodative esotropia with normal AC/A, with the latter having a lower probability of postoperative fusion.
Conclusions: Our findings can guide clinicians in their decisions regarding surgical treatment of patients with ET.

058 Music therapy may decrease apnea associated with retinopathy of prematurity exams. Susan M. Bakouros, John Evered, Kristin Rarey
Introduction: Many premature newborns need to be screened for retinopathy of prematurity (ROP). During and after ROP screening exams, newborns are at high risk for apnea, bradycardia and desaturation (ABD). NICU music therapy (NICU MT), has been shown to improve physiologic stability, including heart rate and oxygen saturations.
Methods: A NICU music therapist provided procedural support during ROP screening exams (n = 46) done with digital retinal imaging (DRI), to determine if NICU MT might help decrease screening-related ABD.
Results: For all 46 DRI exams, the mean number of ABD events in the 24 hour period before the DRI exams was 0.54, and in the 24 hour period following the exam, the mean number of ABD events was 0.41 ($P = 0.35$, 95% confidence interval, −0.15 to 0.41). Following ROP screening with NICU-MT, no infants had escalation of respiratory support, serious infection, or feeding interruption.
Discussion: This is the first study to evaluate the ability of NICU MT to decrease procedure-related ABD events in premature infants. It is also the first study of NICU MT during ROP screening. We found no increase, and a trend toward decrease, in post-procedure ABD when NICU MT was used during the ROP exam.
Conclusions: Our findings suggest that NICU MT during ROP screening exams using DRI is safe and may be associated with a decrease in post-procedure ABD events, consistent with other findings in the literature showing that NICU MT may decrease pain and improve physiologic stability in preterm infants.

059 Does the newer anti-vegf therapy impact neurodevelopmental outcomes more than conventional laser therapy in infants treated for retinopathy of prematurity? L. Daphna Y. Barbeau, Swati Agarwal
Introduction: To compare the neurodevelopmental outcomes in infants who have and who have not received bevacizumab injections (anti-VEGF) and or laser therapy for Retinopathy of Prematurity (ROP) treatment. We hypothesize that the neurodevelopmental outcomes may be similar by group, or that differences in outcomes might