Hearing and Vision Program
Public Health – Muskegon County

With a vision of a healthier Muskegon
H&V Screening:
Two of the Required Public Health Services in Michigan

- The Hearing and Vision programs are required by the Michigan Public Health Code, Act 368 of 1978 (as amended), Part 93.
- The program exists to screen children for deficiencies in hearing or vision and refer them to a doctor if necessary.
- The program works to assure that children have screening periodically throughout their preschool and school-aged years and to assure that they receive needed follow-up services.
Our Hearing Statistics:

- In FY 2013 (10/1/12 – 9/30/13) We screened 7,603 school aged children and 1,642 preschoolers for hearing.
- Of these, 191 were referred to physicians for follow-up.
- Of the 191 referred, we received notice that 112 (58.6%) did receive the needed medical follow-up.
Our Vision Statistics:

- In FY 2013 (10/1/12 – 9/30/13) We provided 10,457 vision screens for school aged children and 1,614 screens for preschoolers.
- Of these, 2,076 were referred to physicians for follow-up.
- Of the 2,076 referred, we received notice that 777 (37.4%) did receive the needed medical follow-up.
Why is screening important?

- Kids can’t learn if they can’t see.
- Kids can’t learn if they can’t hear.
- Some of the problems we test for can cause permanent damage if they’re not corrected early.
**Vision Simulators**: Simulate your vision for friends, family, doctors, and attorneys.

### Extreme Blur Hand Motion Vision Contact Lenses Simulator

**Blurry Vision**

In normal, healthy eyes with good vision, blurry vision indicates a need for prescription lens that adds additional power or corrects astigmatism that distorts the natural optics of the eye. Blurred vision can coexist with ghosting, smeared vision, or other visual aberrations.

### Animation #2 Animation #1 Image Set Simulator

**Ghosted Vision**

The term 'ghosting' was coined around 1957, and originally referred to the false image on a TV screen, caused by signal reflection. Ghosts are caused by residual astigmatism, or irregularities in the corneal surface. They vary in terms of transparency, size, and colors ghosted.

### Simulator

**Glare**

The term ‘glare’ is sometimes used to refer to the perception of any higher-order aberration. Here, the term is restricted to situations in which light seems to overflow, or ‘seep outside,’ its normal boundaries around light sources, or sources of reflected light, such as shiny objects.
Halos

Halos are usually huge globes of illuminated fog surrounding sources of light. Sometimes the globes seem to contain other globes, brighter and denser, nested two or more levels deep.

Loss of Contrast

Contrast sensitivity refers to the ability to distinguish between variations of lightness and darkness. Perceptually, this effect is similar to turning down the Contrast on your television or monitor: Eventually sharp boundaries are lost, objects merge together, as if a haze of grey soup had been poured over the visual field.

Starbursting

Starbursting refers to rays or fine filaments coming off lights. At night, these rays can become dramatically longer and denser. Starbursts are highly variable between patients, differing in terms of their size and shape, length of rays, the density of rays, and transparency (whether the light source is visible through the starburst).
Floaters

Floaters are typically seen as specks, threads, or filaments, sometimes isolated and sometimes interconnected, that seem to "float" across the visual field.

Retinal Detachment

The receptors responsible for human vision are located on the retina, at the back of the eye. Information from these receptors is aggregated at the optic nerve, and sent on to the visual cortex for further processing and interpretation. Portions of the retina that are detached are no longer in communication with the brain, resulting in areas of blankness or blackness. Spatial distortions may exist at the margin of the detachment.

Glaucoma

Glaucoma is a group of eye diseases that slowly steal sight, often with no immediately recognizable symptoms. Most often, vision loss is the result of increased pressure inside the eye, which causes damage to the optic nerve. As glaucoma progresses, peripheral vision becomes more and more compromised as the area of effective vision continues to shrink. How does pressure cause loss of sight? Think of the eye as a balloon filled with air. As more air is pumped in, the balloon expands. The eye, however, is too strong to expand. As the pressure increases, the eye gives at its weakest point, where the optic nerve leaves the eye.
Visual Snow

Patients who complain of Visual Snow literally see what resembles "television snow," that is, specs or particles that blink on and off in their vision.

Hemianopia

Hemianopia refers to loss of vision in one half of the visual field of both eyes, most commonly on the right side. Causes of hemianopia include injury to the brain (temporal or occipital lobe) or optic nerve pathways from accident, infection, stroke, or tumor. Hemianopia may also affect the upper or lower halves of the visual field.

Visual Quality Disparities

Patients with bilateral eye injury or LASIK complications may report different aberrations in each eye. With both eyes open, these aberrations are synthesized to yield a composite image. However, one eye usually contributes more to the resulting composite than the other, a phenomenon known as "ocular dominance." This simulation illustrates one possible scenario, in which vision in the left eye is blurred following LASIK, whereas vision in the right eye is ghosted.

Aberrations & Pupil Size

Patients with complications from refractive surgery often report that their vision seems much better in bright light than dim light. Not only does bright light help compensate for Loss of Contrast Sensitivity, it also shrinks the pupil, reducing the visual aberrations caused by an irregular cornea.
When we Screen:

VISION
- Before school, ages 3-5
- Grade 1
- Grade 3
- Grade 5
- Grade 7
- Grade 9 or Driver’s Ed
- At any parent / teacher / school request

HEARING
- Before school, ages 3-5
- Kindergarten
- Grade 2
- Grade 4
- Any child that has previously failed
- Any teacher / school / parent request
School Responsibilities

  - Sec 9307(3) Records of testing and screening administered and conducted shall be made and preserved as provided by the department. The records shall be available to health agencies and other persons to assist in obtaining proper and necessary health and education care, attention, and treatment as permitted by the department.
  - Michigan law requires that every child be screened for possible hearing and vision problems
Hearing / Vision Screening:

- Trained technicians: PHMC has 3 technicians trained by the State of Michigan
- We do not diagnose – we screen; child can pass/fail/or need rescreening
- Children that fail require follow up with the proper health care professional
- Parents of children who fail receive a letter with follow-up recommendations and a list of resources
- Parents are requested to notify us when children receive follow-up
- We are required to follow up with families to ensure that children get the services that they need.
Scheduling Process:

- Each school is assigned a primary technician, who will work with the school to set screening dates
  - Initial screen
  - Rescreen – at least 3 weeks later (to allow temporary hearing problems to resolve before rescreening)
- Round-Up - orientation events:
  - “Best practice” guidelines from the state recommend screening be valid for no more than 6 months before the start of school.
  - Evening / weekend events are challenging to attend
What we need from the school:

- It is the school’s responsibility to **notify parents/guardians** that Public Health will be conducting vision and hearing screenings.
  - If a parent does not want their child screened, please provide a signed refusal slip to us at our arrival.
- **Quiet Space** to screen
- **Table and 2 chairs**
What we need from the school (cont.):

- **List of students** by class, with student DOB, parent names, addresses and phone numbers, sent electronically in advance.
  - Report can be done through Power School.
- **Identified school contact person** who will work with us to get help for students who are a priority to follow-up (we never want to worry alone!)
- **FEEDBACK!** You will be given a survey to let us know how the screening went. The survey is also available online at:
Additional Services we Offer:

- PHMC Hearing and Vision screening for children is free; walk-in hours are available each Friday.
- Children who fail both hearing screens are eligible for a free otology clinic at the health department, where an ENT specialist examines them and makes recommendations.
- We offer Medicaid enrollment at our Apple Ave office and refer for free children's eye exam / glasses programs.
Questions?

Main Contact:
- Public Health Hearing and Vision Programs
  - 209 E. Apple Ave.
  - Muskegon, MI 49442
  - 231-724-6246
  - publichealth@co.muskegon.mi.us