

I See!

The Clear Connection Between Children's Vision Health and Early Learning



**Early Childhood Summit
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**What Do You Know About
Children's Vision Health?**

How Clear Is Your Vision Knowledge?

What are the requirements in Arizona law for vision screening young children under age 5?

- a. All children age 3 to 5 years must receive a vision and hearing screening from their primary care provider**
- b. There is no requirement for vision screening of children under age 5**
- c. All children must receive a vision screening prior to entering kindergarten**

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How Clear Is Your Vision Knowledge?

How many children under age 5 in Arizona will have a vision problem?

- a. 1 in 20
- b. 1 in 100
- c. 1 in 4

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How Clear Is Your Vision Knowledge?

What is the most common cause of vision loss in children under age 5?

- a. **Amblyopia (“Lazy Eye”)**
- b. **Refractive Error (nearsightedness, farsightedness)**
- c. **Retinopathy of Prematurity (in newborns)**

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How Clear Is Your Vision Knowledge?

What is the name of this Pokemon character?

- a. Magby
- b. Jumpluff
- c. Pikachu



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Our Learning Today:



Identify children's **vision problems and impact on early learning** if left untreated

Understand evidence-based **recommendations for vision screening and treatment**

Determine the **vision health system in your community**

Propose **supports and solutions needed** to address gaps

Healthy Vision and Early Learning



80% of children's learning is through their eyes.

Children rarely complain about vision problems. They think everyone sees the world the same way they do.

Healthy Vision and Early Learning



Uncorrected vision problems **impair child development, interfere with learning, and even lead to permanent vision loss**; early detection and treatment are critical. (Wen, et.al. 2011)

Uncorrected refractive errors in infants and preschool age children are associated with developmental delay and deficits in cognitive and visual motor functions that **may impact school readiness**. (Orlansky, et.al. 2015)

Healthy vision is a **strong predictor of academic performance** in school-age children. (Maples 2003)

Vision Problems in Young Children



AMBLYOPIA



STRABISMUS



Vision Problems in Young Children

REFRACTIVE ERRORS

Normal Vision



Light rays focus on the retina

Myopia
“Nearsighted”



Light rays focus in front of the retina

Astigmatism



Light rays focus on more than one point (unequal refraction of light in different meridians)

Hyperopia
“Farsighted”



Light rays focus behind the retina

Healthy Vision and Early Learning

Vision screening alone will not lead to earlier identification unless our vision health system ensures that a child referred or additional diagnosis and treatment actually receives the care.

PATH TO HEALTHY VISION

SCREENING ► EYE EXAM ► TREATMENT

Routine vision screenings are important for a child's growth and learning milestones. Children should receive vision screening:



**FOR THE FIRST TIME
AT 6 MONTHS OLD**



**AT LEAST ONCE BETWEEN
3-5 YEARS OLD**



**EVERY 1 TO 2 YEARS
THROUGHOUT GRADE SCHOOL**

We must change the children's vision health system.

Healthy Vision and Early Learning

Estimate about **300,000** children in AZ have a vision problem

5% of preschool age children

25% of school-age children

“Literacy crisis” – **59%** of children in third grade do not read proficiently based on statewide assessment (AzMERIT 2016)

49% of AZ children are economically disadvantaged

Children of color are **54%** of the population

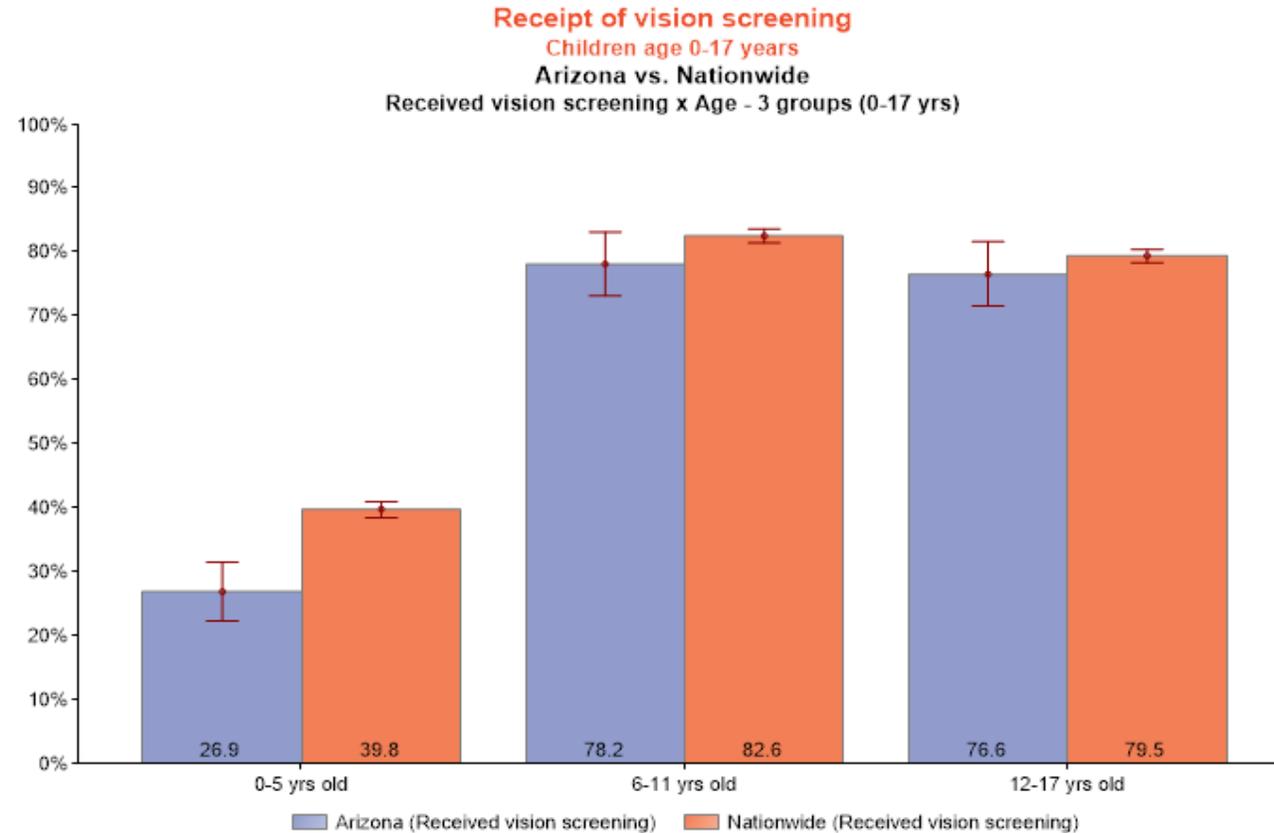
41% of AZ children on Medicaid (higher for very young children)



Arizona Vision Screening Data - Age

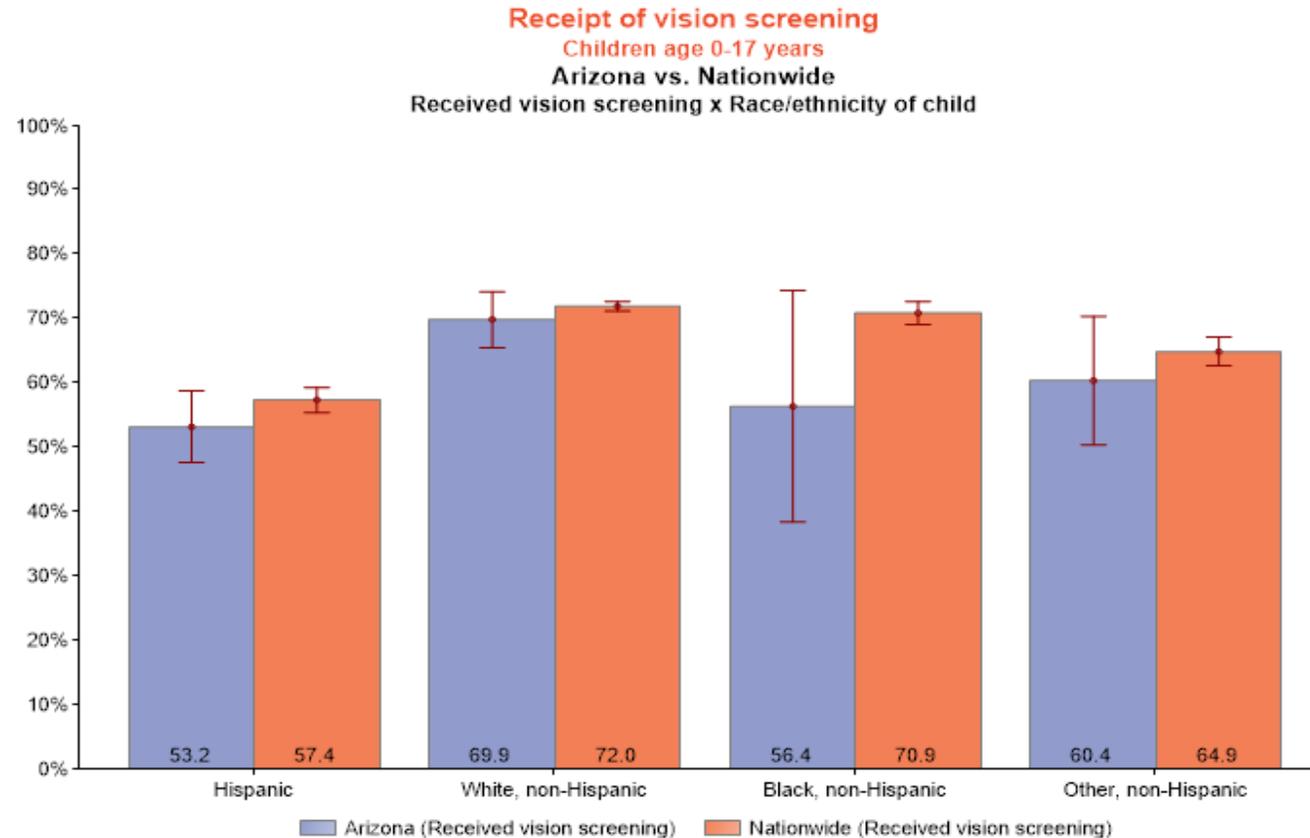
Only 27% of Arizona children age 0-5 years receive vision screening.

This is the lowest rate the U.S.



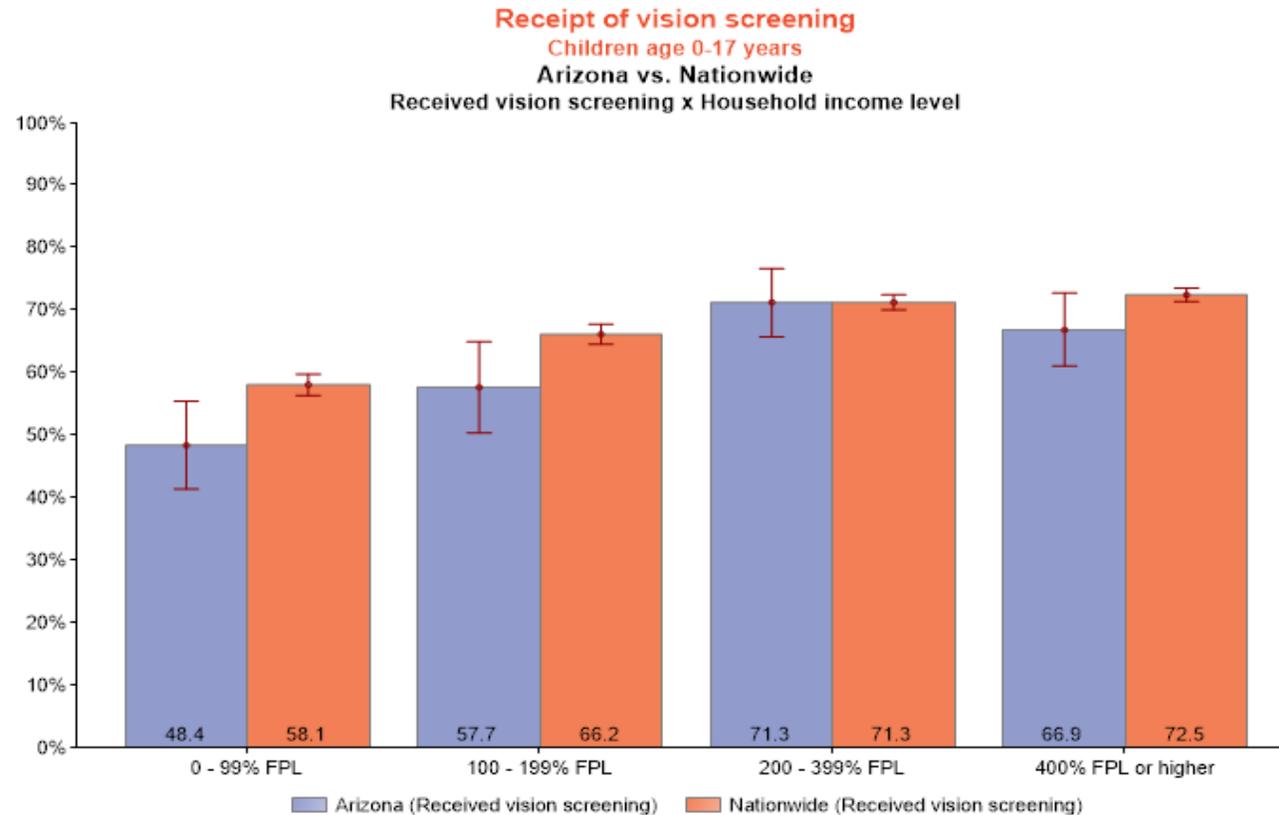
National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. Retrieved from www.childhealthdata.org.

Vision Screening Data – Race/Ethnicity



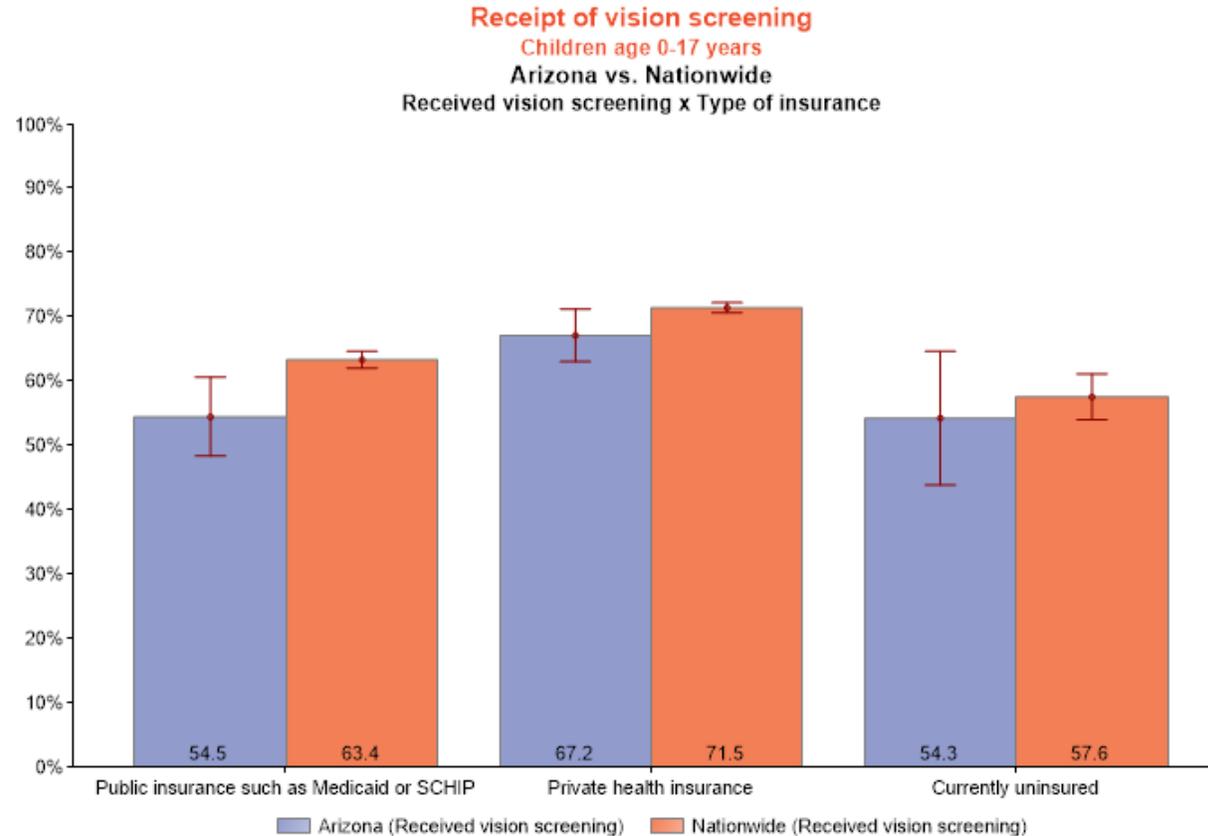
National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. Retrieved from www.childhealthdata.org.

Vision Screening Data – Household Income



National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. Retrieved from www.childhealthdata.org.

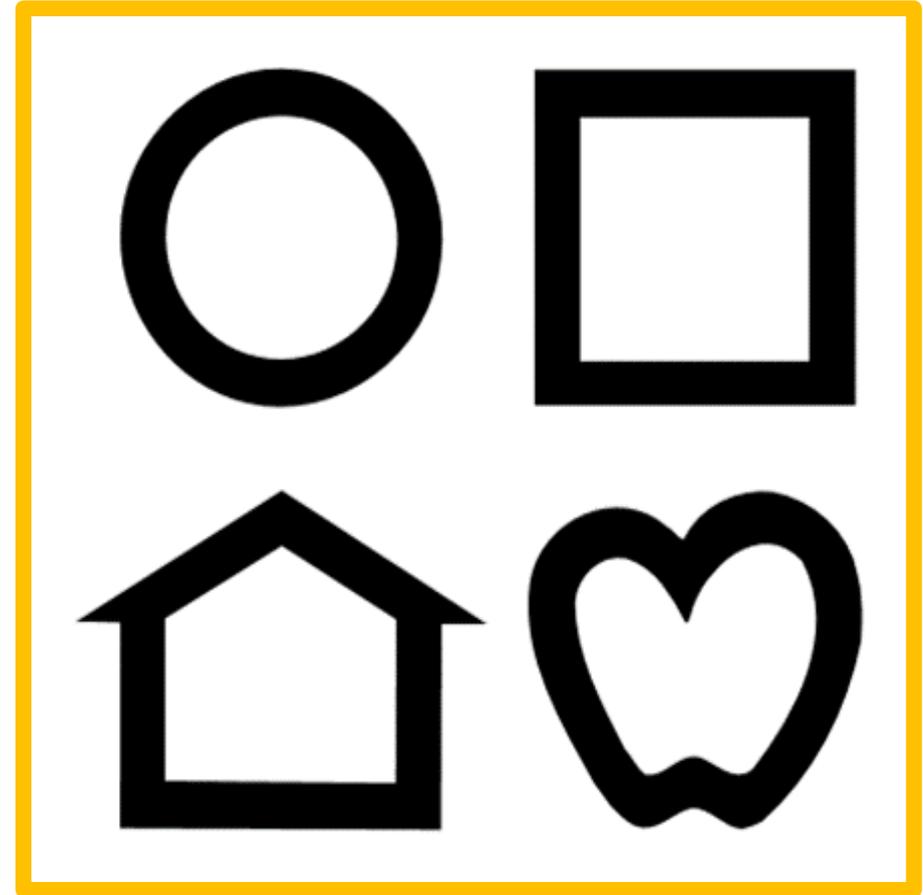
Vision Screening Data – Health Insurance



National Survey of Children's Health. NSCH 2011/12. Data query from the Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health website. Retrieved from www.childhealthdata.org.

Vision Health Pathway: Vision Screening

- ✓ Early and regular vision screening
- ✓ It matters how it's done – use valid and reliable screening methods appropriate for young children
- ✓ Happens in the medical home, Head Start or preschool program, home visiting program and by other community providers
- ✓ Children with neurodevelopmental delays or disabilities don't need screening – they should be directly referred to an eye care professional for an eye exam



Vision Screening Methods Age 3-5

Vision Screening Instruments measure the presence and magnitude of refractive error. They do not measure visual acuity.

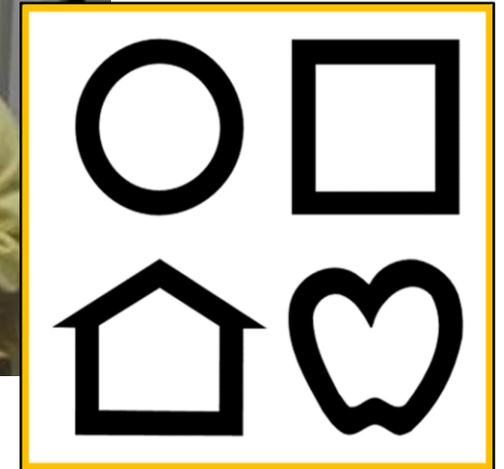


Autorefractors and Photoscreeners

Optotype Chart screening is a valid and reliable method to measure visual acuity in young children.



LEA Symbols



Visual Acuity: sharpness of vision, measured by the ability to discern letters or numbers at a given distance according to a fixed standard.

Best Practice Vision Screening Methods Age 3-5

	Best Practice	Acceptable Practice	Unacceptable
Optotype	Single surrounded HOTV letters or LEA Symbols	Rectangular crowding bar surrounding a single line of HOTV Letters or LEA Symbols on an eye chart or flip book style presentation	Snellen, Allen figures, Tumbling E, Landolt C, Lighthouse, Kindergarten Eye Chart, machines simulating distance
Occlusion	Adhesive patch or opaque paper tape	Specialized occluder glasses	Hand, tissue, paper cup, cover paddle
Test Distance	5 ft	10 ft	20 ft Near card Any distance <5 ft

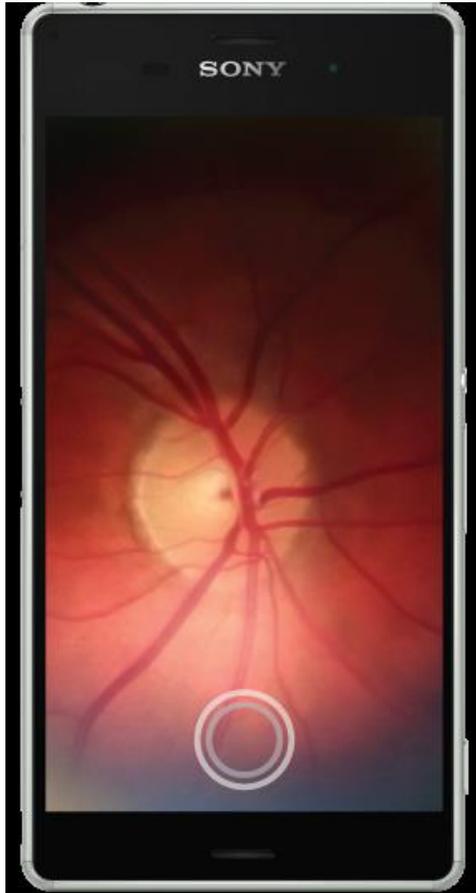
What's Wrong With These Pictures?



E	1	20/200
F P	2	20/100
T O Z	3	20/70
L P E D	4	20/50
P E C F D	5	20/40
E D F C Z P	6	20/30
F E L O P Z D	7	20/25
D E F F O T E C	8	20/20

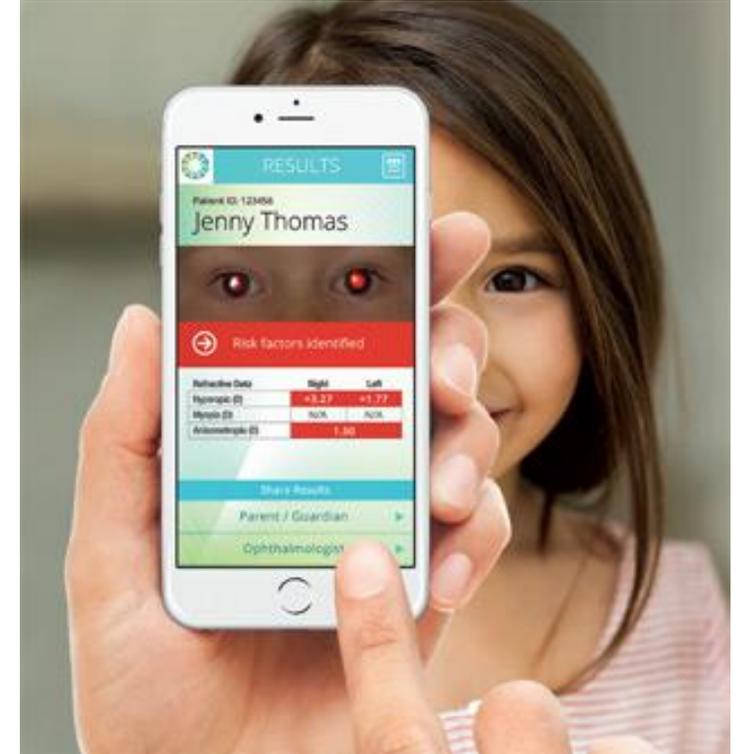


Vision Screening Methods – New Technology

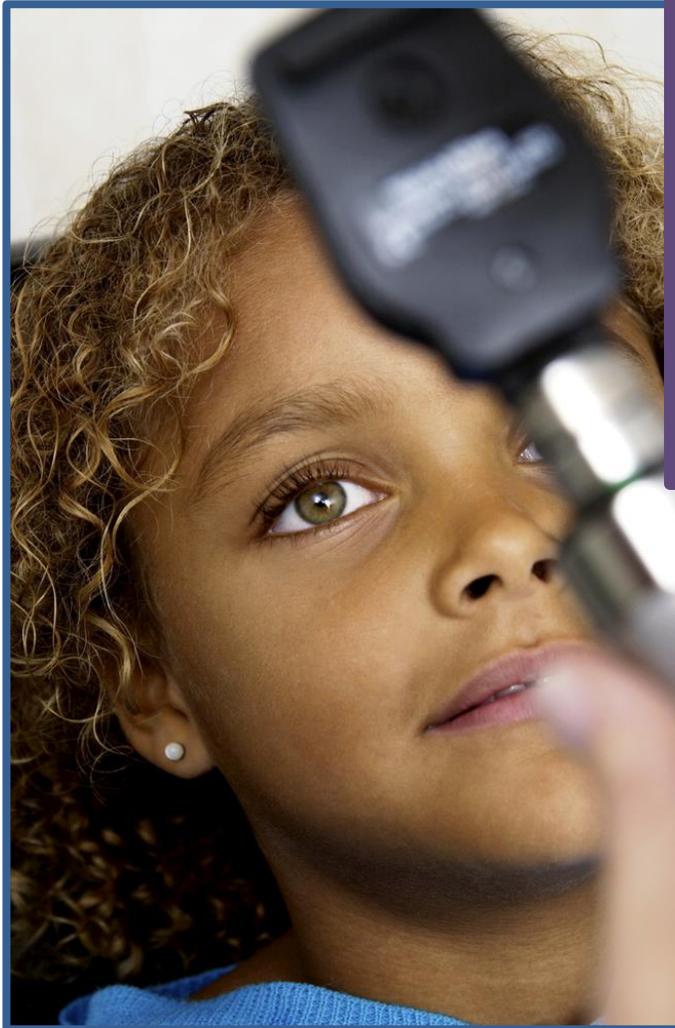


Need to ensure new technology is valid and reliable

HOW iSCREEN WORKS
The science of digital vision screening.



Vision Health Pathway: Eye Exam



Eye care professional:

- Optometrist or
- Ophthalmologist



Vision Health Pathway: Treatment



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Eye Protection and Safety

Protect eyes outdoors with a hat and sunglasses that block UV rays

Play with age-appropriate toys and avoid toys with sharp or protruding parts

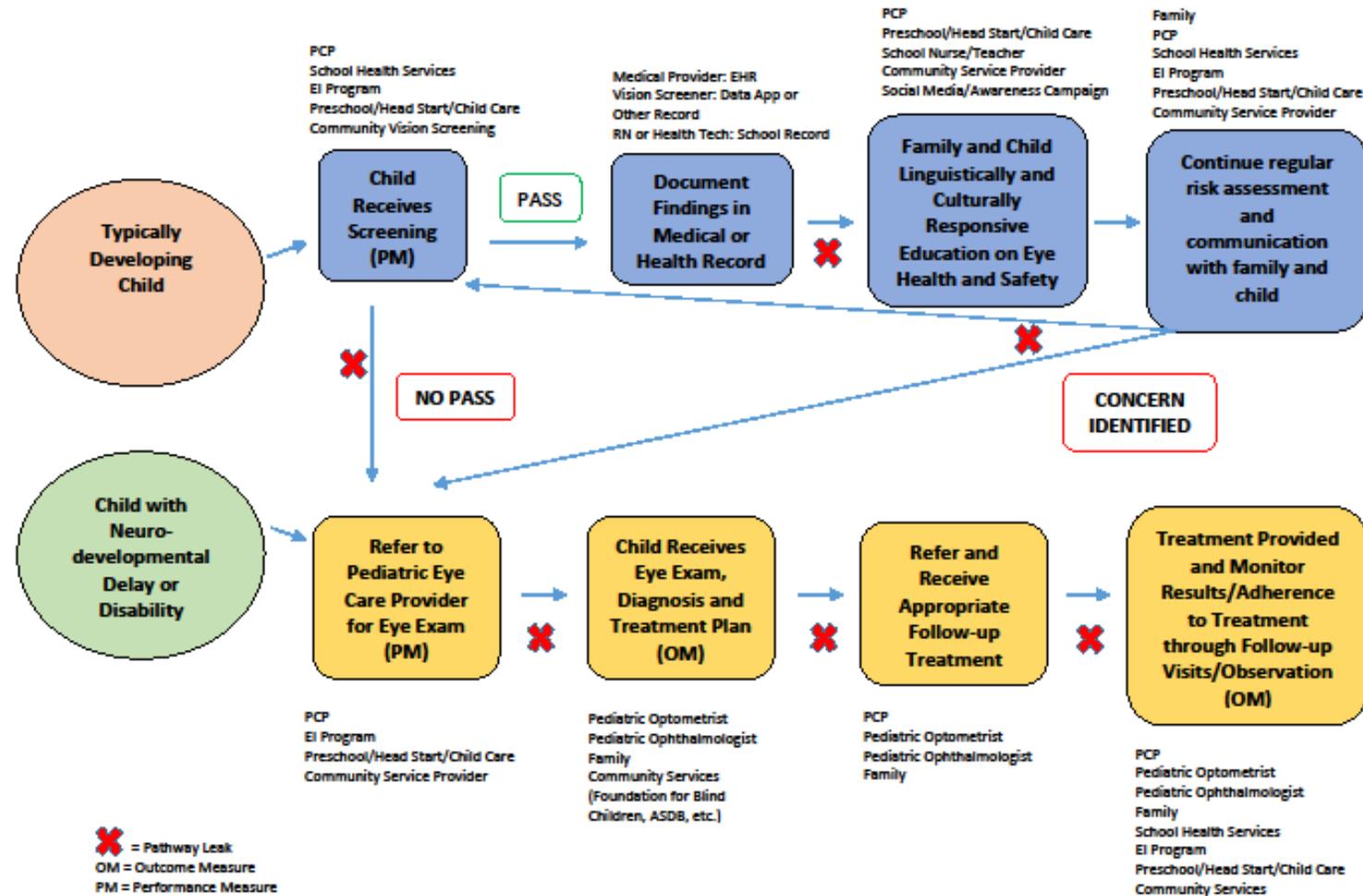


Screen Time and the Pitfalls of Pokemon Go



Arizona Children's Vision Health Pathway: Screening, Eye Exam, Treatment (0-17 years)

The Arizona Children's Vision Health System is missing an integrated data system, and assistance and coordination for families after referral is made.



Children's Healthy Vision in Your Program/Community

How many children have health insurance?

How many children are connected to a medical home?

Where does vision screening occur?

Is vision screening targeted or random?

How many children are moving on the vision health pathway of screening, eye exam and treatment?

Are there supports for children/families who need assistance to access eye exams and follow-up treatment?

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Public private coalition of Arizona health, education, community, philanthropic and business partners with collective commitment to vision health and learning success

Aligned with Read On Arizona to advance literacy and reading proficiency.



EXPECTED RESULTS (Difference Made):

- **Children with vision problems are identified early and receive follow-up care resulting in healthy corrected vision**
- **Children make accelerated progress toward 3rd grade reading proficiency and school readiness**

INDICATORS AND TARGETS:

- Increase by X% the percentage of children age 12 and under who receive vision screening by December 31, 2018
- Increase by Y% the percentage of children age 12 and under who fail screening and receive follow-up vision evaluation and/or care by December 31, 2018

STRATEGIES:

- Access to Vision Screening, Eye Exams and Treatment
- Quality Standards and Best Practices
- Statewide Coalition, Community Partnerships and Administration
- Integrated Data Infrastructure and Evaluation
- Professional Development and Training
- Family and Public Engagement, Awareness and Education



Complete the Breakout Session Evaluation on the Mobile App

