



Newborn Screening Saves Lives and Money

Newborn screening is the practice of testing every newborn for certain genetic, metabolic, hormonal and functional conditions that are not otherwise apparent at birth. If diagnosed early, many of these conditions can be successfully managed, improving lives and reducing costs.

Newborn Screening Saves Lives:

- Every year, more than 12,000 children are identified as having a condition detected through newborn screening.¹ Severe Combined Immunodeficiency Disorder (SCID) and Medium-Chain Acyl-coenzyme Dehydrogenase Deficiency (MCADD) are two examples of conditions on the Department of Health and Human Services' Recommended Uniform Screening Panel (RUSP) that are fatal for children if left untreated.
- Critical Congenital Heart Disease (CCHD) is the most common birth defect and a major cause of infant death during the first year of life.² Infants with CCHD are at significant risk for death or disability if their condition is not diagnosed soon after birth. Newborn screening for CCHD allows affected infants to receive critical life-saving interventions.

Newborn Screening Saves Money:

- Clinicians can successfully manage specific conditions if treated early. In some cases, simple changes to an infant's diet can prevent intellectual disability or other medical complications such as seizures or blindness.³ Disability-related health care costs the United States \$400 billion every year, of which the public pays \$280 billion.⁴
- Screening for congenital hypothyroidism, a condition on the RUSP, saves an estimated \$400 million dollars per year; early detection allows for thyroid hormone supplementation to prevent cognitive impairment.⁵
- Phenylketonuria (PKU), the first newborn screening test developed in the United States, is a genetic condition costing \$1-2 billion annually in care for patients treated too late.⁶ The annual costs associated with screening (\$142 million) and treatment (\$200 million for special formula for PKU patients) are much lower.⁷
- SCID is a treatable illness in which an infant fails to develop a normal immune system. If undetected and untreated, SCID typically leads to death before the baby's first birthday. Early diagnosis can lead to a cure via bone marrow transplant which costs \$100,000 if the procedure occurs before 3 ½ months of age.⁸ The Medicaid treatment cost for an infant with SCID can exceed \$2 million.⁹ One model estimates that for each dollar invested in SCID screening saves five dollars in health care costs..¹⁰

Examples of Cost Savings:

- Each year congenital hypothyroidism screening prevents 160 intellectual disability cases.¹¹ The economic benefits of screening for this condition are roughly 20 times greater than the costs.¹²
- Congenital hearing loss screening can reduce education costs. In 2007 dollars, the estimated educational cost of hearing impairment over one child's lifetime is \$115,600.¹³
- Tandem mass spectrometry (MS/MS) requires a few drops of blood to screen for more than 30 disorders in newborns.¹⁴ In California, MS/MS newborn screening for more than 40 conditions saved \$9.32 in health care costs and value of life saved.¹⁵



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References

- ¹ Centers for Disease Control and Prevention. CDC grand rounds. Newborn screening and improved outcomes. *Morbidity and Mortality Weekly Report*. 2012;61(21):390-393. In: Association of Public Health Laboratories. *Newborn Screening: Four Facts Policymakers Need to Know*.
- ² Centers for Disease Control and Prevention. Facts about Congenital Heart Defects. Centers for Disease Control and Prevention. <http://www.cdc.gov/ncbddd/heartdefects/facts.html>. Updated March 29, 2012. Accessed June 12, 2013.
- ³ Association of Public Health Laboratories. *Newborn Screening: Four Facts Policymakers Need to Know*. 3-4.
- ⁴ Centers for Disease Control and Prevention. Disability & Health: Health Care Data & Statistics. <http://www.cdc.gov/ncbddd/disabilityandhealth/healthcare-data.html>. Updated June 22, 2011. Accessed June 18, 2013.
- ⁵ Grosse S. (2011, November) New estimates of the economic costs of newborn screening for congenital hypothyroidism in the US. Presentation at the APHL Newborn Screening & Genetics Testing Symposium, San Diego, California. In: Association of Public Health Laboratories. *Newborn Screening: Four Facts Policymakers Need to Know*.
- ⁶ National PKU Alliance. The Economic Impact of PKU. National PKU Alliance. <http://npkua.org/index.php/the-economic-impact-of-pku>. Accessed May 6, 2013.
- ⁷ National PKU Alliance. The Economic Impact of PKU. National PKU Alliance. <http://npkua.org/index.php/the-economic-impact-of-pku>. Accessed May 6, 2013.
- ⁸ Buckley RH. The long quest for neonatal screening for severe combined immunodeficiency. *Journal of Allergy and Clinical Immunology*. 2012;129:597-604. In: Association of Public Health Laboratories. *Newborn Screening: Four Facts Policymakers Need to Know*.
- ⁹ Buckley RH. The long quest for neonatal screening for severe combined immunodeficiency. *Journal of Allergy and Clinical Immunology*. 2012;129:597-604. In: Association of Public Health Laboratories. *Newborn Screening: Four Facts Policymakers Need to Know*.
- ¹⁰Thompson JD, Glass M. Guide to the Newborn Screening Cost-Benefit Model for Adding Severe Combined Immunodeficiency. Washington State Department of Health. http://sboh.wa.gov/Meetings/2012/06-13/Docs/Tab07f-SCID_cost-benefit_analysis.pdf. Accessed May 28, 2013.
- ¹¹Grosse SD, Van Vliet G. *Arch Dis Child*. 2011;96(4):374-379. In: Grosse SD. *Newborn Screening Health Impact and Return on Investment*. National Center on Birth Defects and Developmental Disabilities and Centers for Disease Control and Prevention.
- ¹²Grosse SD. *AERE Newsletter*. 2007; 27(2):17-21 Grosse, SD et al. *Med Care*. 2009;47(7 Suppl 1):S94-S103. In Grosse SD. *Newborn Screening Health Impact and Return on Investment*. National Center on Birth Defects and Developmental Disabilities and Centers for Disease Control and Prevention.
- ¹³Grosse SD. Education cost savings from early detection of hearing loss: New findings. *Volta Voices*. 2007;14(6):38-40.
- ¹⁴STAR-G: Screening, Technology and Research in Genetics. Expanded Newborn Screening Using Tandem Mass Spectrometry: Financial, Ethical, Legal and Social Issues (FELSI). <http://www.newbornscreening.info/Parents/info.html>. Updated May 22, 2012. Accessed May 28, 2013
- ¹⁵ Association of Public Health Laboratories. *Newborn Screening: Four Facts Policymakers Need to Know*. 5.