KIDS COUNT Indicator Brief

Reducing the Child Death Rate

July 2009

The Annie E. Casey Foundation

701 St. Paul Street

Baltimore, MD 21201

www.aecf.org

www.kidscount.org

Produced for the Annie E. Casey Foundation by Rima Shore, Ph.D. & Barbara Shore, M.A.

KIDS COUNT Indicator Brief

Reducing the Child Death Rate

In the 20th century's final decades, advances in the prevention and treatment of infectious diseases sharply reduced the child death rate. Between 1980 and 2000, the death rate for children ages 1 to 4 dropped by nearly 50 percent, and for children ages 5 to14 by approximately 40 percent (Federal Interagency Forum on Children and Family Statistics, 2003).

Progress has continued into the new century. From 2000-2006, the mortality rate for children ages 1 to 14 years fell by 14 percent, dropping from 22 to 19 deaths per 100,000 children (KIDS COUNT Data Center, 2009). The development of new pediatric vaccines has played an important role in safeguarding children's health and improving survival rates.

Despite this progress, the child death rate in the U.S. remains higher than in many other wealthy nations. The under-five mortality rate in the U.S. is almost three times higher than that of Iceland and Sweden and double that of Czech Republic, Finland, Italy, Japan, Norway and Slovenia (Save the Children, 2008).Many of these deaths are preventable. Injury continues to be the chief cause of death for the nation's children and youth.

Moreover, despite decades of progress, geographic, racial and ethnic disparities in the child mortality rate persist. In 2006, the child death rate per 100,000 children ranged from 9 in Connecticut to 33 in Alaska (KIDS COUNT Data Center, 2009). In the same year, African American and American Indian/Alaskan Native children were at significantly higher risk of death than white children (Annie E. Casey Foundation, 2009).

This *KIDS COUNT Indicator Brief* considers five broad strategies to address both the larger socioeconomic forces and some of the specific hazards that threaten the well-being of children ages 1 to 14, including:

- **Prevent chronic childhood illnesses and promote lifelong health**
- **Support parents and other adults in their caretaking roles**
- **Continue to promote motor vehicle safety**
- **Target other leading health and safety issues**
- **Ensure children have safe places to live, learn and play**

- **Prevent chronic childhood conditions and promote lifelong health**

In recent years, researchers have widened their lens on childhood risks, paying closer attention to chronic childhood conditions and seeking strategies to instill healthy habits from an early age. This shift reflects data showing a significant increase, over two decades, in the number of children affected by chronic diseases and health impairments—from allergies and asthma to obesity and obesity-related diabetes. A 2004 study found that approximately 15 percent of children have a chronic illness, and approximately one

third of those illnesses are moderate to severe. As a result, the majority of children's non-injury hospitalizations and deaths are now related to chronic illnesses (Wise, 2004).

While researchers have long known that chronic diseases often originate in childhood, recent studies have determined that many of those diseases take root much earlier than previously thought. Increasingly, both research and prevention programs are looking closely at the links between maternal and child health to determine the conditions necessary to prevent chronic disease and promote lifelong health. In fact, new research has found clear connections between children's lifelong health patterns and maternal health prior to conception, at the time of conception, throughout pregnancy, and in the weeks and months following birth (Collins et al., 2009).

Address the environmental factors that contribute to the development of chronic diseases in children. Today, obesity and asthma are the leading childhood chronic illnesses. While children can be genetically predisposed to develop either condition, the origins of obesity and asthma are also strongly connected to children's environments. Children living in poor neighborhoods, for example, are at much greater risk for developing asthma as a result of exposure to asthma triggers such as mold, mildew, dust mites, cockroaches and pollution. The origins of obesity are complex, and include lack of physical exercise and food intake that is high in calories and fat. While childhood obesity is on the rise among children of every socioeconomic status, a wide range of studies have shown that children from low-income families have higher rates of obesity due in part to diminished access to healthy food choices and safe spaces to walk and play.

Take a lifespan approach to family health. Women of childbearing age who have chronic health problems, such as obesity, type-2 diabetes, cardiovascular disease—even dental problems—are more likely to experience complications during pregnancy and give birth to children who are at greater risk for developing chronic diseases. And children who develop health issues in their early years are more prone to medical problems as adults. For example, studies show that obese children between the ages of five and eight have, on average, two or more markers for cardiovascular disease, such as high blood pressure and high cholesterol, and are at risk for becoming morbidly obese adults (Collins et al., 2009). Given these findings, there is a need for a broader definition of maternal and child health that focuses on both individuals—mothers as well as their children—and families over a lifespan.

Use policy as a lever to improve health care. Efforts to improve children's overall health hinge not only on direct services, but also on policy reforms, especially those designed to improve the quality and delivery of Medicaid managed care. Effective efforts have focused on improving outpatient management and treatment of asthma; improving preventive services for children; and expanding access to early screening and care for children with special needs.

Ensure up-to-date immunization. New pediatric vaccines have played a key role in reducing child mortality. As of 2007, it is recommended that children receive 25 doses of vaccines in their first 18 months, compared with eight recommended doses in 1987.

However, vaccination has become more expensive and immunization schedules have grown more complex. Parents' ability to safeguard children may therefore depend on whether they have health insurance that fully covers vaccination (Joyce, 2005).

- **Support parents and families in their caretaking roles**

Accidental injury continues to be the greatest danger to children, causing more than half of all childhood deaths (Centers for Disease Control, 2008; Schnitzer, 2006). The leading causes of death among children ages one to 14 are motor vehicle crashes, drowning and fires/burns. Policymakers and communities can take many steps to strengthen consumer product safety, pass laws to protect children and create safer play spaces. However, these actions do not take the place of responsible and informed adults who are able to look after children's health and safety. In recent decades, national and local regulations requiring better safety labeling, child safety seats, restraints and airbags in automobiles, residential smoke detectors, and window guards markedly lowered the child mortality rate. Research has shown that recent declines in child mortality due to accidental injury is likely the product of both improvements in parent education about the use of safety products such as seat belts and bicycle helmets, and improvements in the products themselves (Currie, 2005).

The fact remains, however, that some parents have greater access to child safety information and education than others. Studies show that despite the drop in child mortality, the safety gap between children of more and less educated parents has actually widened (Francis, 2001). Research also indicates that compared with children from better off families, children from poor families generally suffer from more frequent and more serious health problems. Parent education, early childhood interventions, and efforts to reduce poverty all have positive impacts on children's health and survival (Currie, 2005; Heckman, 2007). In recent years, studies of parental stress have found links between parents' stress level and their ability to protect their children's health and safety. Research suggests that screening for factors that contribute to parental stress—a demanding workload, a low level of social support, the perception that a child is fussy or difficult, negative life events, child care challenges, many children in the family, and high maternal age (Ostberg & Hagekull, 2000)—and supporting parents' ability to handle stress can have a positive impact on outcomes for children (Alemagno et al., 2008).

Expand family support and parent education initiatives, and increase attention to safety within those programs. Expanding family support, home visitation, and parent education initiatives can strengthen parents' ability to safeguard their children and act as effective advocates for their children's receipt of community services. Programs aimed at helping parents look after children's health and safety need to extend beyond the first year of life, recognizing youngsters' vulnerability throughout childhood.

Strengthen efforts to prevent child abuse and neglect. It is estimated that more than 1,200 children die every year in the U.S. as a result of child abuse and neglect (Lung & Daro, 2006). That number is almost certainly higher, however, due to reporting gaps and varying state methodologies for investigating and substantiating cause of death. In fact, a recent study estimated that 85 percent of deaths from abuse or neglect were not identified

as such on the children's death certificates (McClain et al., 2007). Other research points to the lifelong health deficits associated with child abuse and neglect. For example, a recent study found that abuse, neglect, and being exposed to traumatic events in early childhood have a significant impact on children's health and behavior later in life (Hillis et al., 2004). Successful preventive interventions include parenting education, respite care for families at risk, support groups and networking for teen mothers, better detection and intervention training for social works and health care providers, and more effective long-term tracking of patterns of abuse within families.

Support maternal mental health. Models that use home visiting, social networks, and peer supports to address parents' mental health needs can be highly effective across diverse cultures for reducing maternal depression and promoting young children's healthy development.

Involve parents and other community members in planning health services. Researchers say that difficulties in immunizing young children and identifying those with special needs stem in part from a lack of parental involvement in the design and implementation of health services (Brooks-Gunn, 1996). This is especially true in low-income neighborhoods. Programs that aim to identify young children at risk for illness or injury and refer them for appropriate services are effective only when they engage parents.

Create accessible health-and-safety-related materials in a variety of media and languages, and distribute them in places where families are likely to be receptive to them. Today, more safety information is available to parents than ever before, thanks to mandatory safety labeling, safety-oriented websites, public-service announcements, and more coverage of safety in parenting manuals. However, isolated families, immigrant parents or parents with low literacy levels may not benefit fully from these materials. Closing the safety gap will require intensive efforts to give all families access to the information and support they need, in a variety of media and languages. Many families also need help decoding health information. Improving health literacy will require an intensive effort by public health and health care systems, the education system, the media, and health care consumers. A particularly promising strategy is the inclusion of health knowledge and skills into Kindergarten through 12th-grade curricula, adult education classes and community public health programs (Institute of Medicine, 2004).

- **Ensure children have safe places to learn and play when they are away from home**

Ensuring that people have safe communities and public spaces in which to gather is essential to expanding or reinforcing social networks in communities. It is also a key strategy for safeguarding children.

Take steps to guarantee health and safety in child care settings. While injured children represent only a small percentage of those in non-parental care, the number is much too high considering that most of these injuries are preventable. Policymakers have a crucial role to play. In a review of state licensing requirements for child care, the U.S.

Consumer Product Safety Commission (CPSC) found that states had not addressed many important safety issues. For example, many states did not require daycare centers to use cribs that meet federal regulations or voluntary safety standards. Moreover, while the National Association of Child Care Resource and Referral Agencies recommends quarterly inspections of child care centers, its 2007 survey found that only 10 states required unannounced inspections and eight states did not even require annual inspections. Parents can play a key role by asking providers to resolve any and all safety problems, using checklists available from many resource and referral (R&R) agencies, or from the CPSC.

Increasingly, the Internet has become a source of information about child care licensing and inspections. Research shows that posting user-friendly inspection and complaint reports online has a positive impact on both the frequency of inspections and the quality of child care—particularly the care provided to low-income children (Witt & Queralt, 2004). At present, 17 states post reports of child care facility monitoring and inspections that have taken place in response to complaints (National Association of Child Care Resource and Referral Agencies, 2009).

Link child care providers with "medical homes." Providers need to have a medical contact for every child in their care. Many health experts believe that the providers themselves need to have an ongoing relationship with a pediatrician or clinic that can become a "medical home" for the program. In July 2008, the American Academy of Pediatrics introduced its National Center for Medical Home Implementation to ensure children and youth both with and without special medical needs have the support and services they need for full community inclusion.

Improve playground availability and safety. Playgrounds and recreation areas can help keep children off streets and away from traffic. But these areas are not always the safe havens that parents hope for. In 2004, more than 200,000 children under the age of 14 received emergency room treatment for playground accidents. Eighty percent of those injuries were the result of falls (U.S. Consumer Product Safety Commission, 2005). The problems most commonly found in public playgrounds include hard surfaces, equipment that is too high, openings that can entrap or strangle children, and swings that are too close together. Among the most important strategies for preventing playground injuries are increasing active adult supervision and educating parents and the public about the need for separate age-appropriate play equipment for younger children (ages two to five) and older children (ages five to 12) (U.S. Consumer Product Safety Commission, 2005).

Design strategies for safeguarding children that reflect local realities and cultural diversity. Injury prevention is not a one-size-fits-all project. Some groups have made headway on longstanding safety issues by consulting with community-based organizations and conducting focus groups among residents. One example is the challenge of increasing proper car seat and seat belt use by Latino families. Researchers report a significantly higher death rate from motor vehicle crashes for Latino than for non-Latino children (National Highway Traffic Safety Administration Center for Statistics and Analysis, 2009). The National Highway Traffic Safety Administration and

the National Latino Children's Institute teamed up to create "*Corazón de mi vida*," an initiative designed to convince Latino families, through reason and emotion, to use car seats and seat belts to protect young children. The project reflected research indicating a cultural preference, in some Latino communities, for holding children, and a negative reaction to car restraints. Through a variety of culturally responsive public information messages, parents are encouraged to make promises to protect their children through the use of car safety restraints (National Latino Children's Institute, 2008).

Build on research to expand knowledge of the linkages between community conditions and children's health outcomes. Communities that are disorganized and have few resources tend to produce poor health outcomes for children and adults alike (Coulton & Korbin, 2007; Pan et al., 2005). In the last decade, there have been many efforts to understand how conditions found in such communities, such as economic hardship or racial segregation, affect the likelihood that residents will suffer ill health, have accidents, or die. Researchers using Geographic Information Systems (GIS) technology, which can map environmental "hot spots" for disease and mortality on a "house-by-house" basis, can now compiled detailed data snapshots of specific neighborhoods (Hood, 2005). Such studies hold promise for better targeted prevention efforts. Another promising line of research focuses on the link between housing and health disparities. Several large-scale community-based participatory research projects (such as the High Point Healthy Homes and Community Project in Seattle) offer opportunities to gain new insight into the relationships among "built" environments, social environments and health. Other research efforts are based on the Asset Based Community Development (ABCD) approach, which focuses on discovering and mobilizing the resources that already exist in communities in partnership with community members, volunteer associations and institutions (Pan et al., 2005). As researchers shed additional light on the linkages between community conditions and child well-being, existing programs to support families and strengthen communities can be reconsidered and improved.

- **Continue to Promote Motor Vehicle Safety**

The National Highway Traffic Safety Administration reported that in 2007, motor vehicle accidents were the leading cause of death for children ages three to six and eight to 14 (NHTSA, 2009). Riding without appropriate restraints (seatbelts or properly installed child safety seats) continues to be the greatest risk factor for death and injury among child occupants of motor vehicles. For 2007, NHTSA reported that 45 percent of the children ages 14 and younger who died in vehicle crashes were unrestrained.

Promote the use of seat belts. The American Academy of Pediatrics recommends that all children who are passengers in motor vehicles should use the restraint device offering maximum protection for their size and age. No matter which restraint is used, children should ride in the back seat. All 50 states have child occupant protection laws; however, these laws vary widely in their age requirements, exemptions, enforcement procedures, and penalties. Safety studies have shown that in states where police officers are authorized to stop and ticket drivers for seat belt violations, the rate of seat belt use is higher and there are lower fatality and injury rates (NHTSA, 1999).

Encourage the proper use of child safety seats. The proper use of child car seats saves lives, but safety experts estimate that approximately 80 percent of children who are placed in child safety seats are improperly restrained. The NHTSA currently recommends four stages of child safety restraints—rear-facing car seats, front-facing car seats, booster seats and seat belts—and operates Child Safety Seat Inspection Stations across the country. In addition to providing instructions for parents on the correct installation and use of child car seats, many health departments and community organizations provide car seats to low-income parents free of charge, have a loaner program, or make them available for purchase on a sliding-scale fee.

- **Target other leading health and safety hazards**

Every day, approximately 20 children die from preventable injuries—more than the number of child deaths from all diseases combined (CDC, 2008). Safety experts believe that the vast majority of unintentional injuries are avoidable.

Increase water safety. From 2000 to 2006, drowning was the second leading cause of unintentional injury-related death among children ages one to 14, and the leading cause of death for one- to four-year-olds. Childhood drownings and near-drownings usually happen both quickly and silently. In fact, most children between the ages of one and four who drown are in the care of one or both parents at the time, and are out of sight for less than five minutes (CDC, 2008). States and communities can increase water safety by passing laws requiring fencing around residential swimming pools and encouraging pool owners to remove floats and other toys that attract children from the pool area immediately after use. Older children are more likely to drown in natural water sites, such as lakes, rivers and oceans. In these locations, lifeguards, personal flotation devices, and water safety instruction offer the best protection.

Boating safety is also important. According to the U.S. Coast Guard, the use of life jackets could prevent approximately two thirds of the boating-related drownings among children under age 14. While most states require that children under 13 wear life jackets when boating, research shows that children are more likely to wear life jackets—and continue to wear them beyond the required age—when parents use them as well.

Prevent deaths from fires, burns, and smoke inhalation. Child deaths from fire and flame injury have declined in recent years. However, fires and burns remain the third leading cause of accidental injury-related death among children ages one to 14. When home fires occur, children—especially those ages five and younger—are at the highest risk of injury and death. The chances of dying in a residential fire are cut in half when a smoke alarm is present. In 2004, only 75 percent of those homes had a functioning smoke alarm (Safe Kids USA, 2008).

Promote the use of bicycle helmets. With the exception of motor vehicles, bicycles are involved in more childhood injuries than any other consumer product. Studies show that children 14 and younger are five times more likely to be injured in bicycle-related crashes (Safe Kids Worldwide, 2007). Among the most common and serious consequences of

bicycle-related accidents are head injuries. Studies estimate that the use of helmets can reduce the risk of head injury by 85 percent and severe brain injury by 88 percent, and could have prevented 75 percent of fatal head injuries among child bicyclists (Insurance Institute for Highway Safety, 2009). While bicycle helmet laws have been shown to increase helmet use and lower the number of bicycle-related deaths and injuries, only 21 states and the District of Columbia require that children wear helmets.

Prevent deaths caused by airway obstructions. Suffocation is the leading cause of injury deaths among children under one year of age. Families and child care providers need adequate information about preventing suffocation, choking, and strangulation, particularly in young children.

Prevent deaths from firearms. In 2006, 409 children under the age of 15 died from firearm injury. More than half were in 10 to14 age span. Many more suffered non-fatal injuries (Centers for Disease Control and Prevention, 2009). Parents play a key role. If they keep firearms at home, they must ensure that they are unloaded and locked. Keeping them "hidden away" but unlocked can be a tragic mistake. Before sending their children to visit other homes, parents are encouraged to ask if there are guns in the home and, if so, how and where they are stored. Legislators need to consider the welfare of children when voting on gun control laws.

In conclusion, while it is important to target specific accidents and illnesses, many children today are threatened less by particular diseases or safety hazards than by the economic and social forces that affect the communities in which they live. In the long run, efforts to reduce the child mortality rate will have to focus on health promotion and accident prevention, while also taking into account the larger forces that make some children more vulnerable to illness and injury.

References

Alemagno, S., Niles, S., Shaffer-King, P., Miller, W. 2008. Promoting health and preventing injury in preschool children: The role of parenting stress. *Early Childhood Research & Practice* 10. Accessed at: http://ecrp.uiuc.edu/v10n2/alemagno.html.

Annie E. Casey Foundation. *2009 KIDS COUNT Data Book*. Baltimore, MD.

Brooks-Gunn, J. 1996. Big-city kids and their families: Integration of research and practice. In A.J. Kahn and S.B. Kamerman, eds. *Children and their families in big cities: Strategies for service reform*. New York: Columbia University School of Social Work.

Centers for Disease Control and Prevention. 2008. *CDC Injury Fact Book 2006.* Accessed at www.cdc.gov/ncipc/fact_book/factbook.htm.

Centers for Disease Control and Prevention. 2009. WISQARS, *Injury Mortality Reports*, 2006 data. Accessed at: http://webapp.cdc.gov/sasweb/ncipc/mortrate10_sy.html.

Collins, J.L., Lehnherr, J., Posner, S.F., Toomey, K.E.. 2009. Ties that bind: Maternal and child health and chronic disease prevention at the Centers for Disease Control and Prevention. Accessed online at www.cdc.gov/pcd/issues/2009/jan/08_0233.htm.

Consumer Product Safety Commission. 2008. Public Playground Safety Handbook. Accessed online at www.cpsc.gov/CPSCPUB/PUBS/325.pdf.

Coulton, C.J. & Korbin, J.E.. 2007. Indicators of child well-being through a neighborhood lens. *Social Indicators Research* 84(3): 349-361.

Currie J. 2005. Child health and mortality. Accessed at www.econ.columbia.edu/currie/Papers/palgraves_mortality.pdf.

Federal Interagency Forum on Child and Family Statistics. 2003. *America's children: Key national Indicators of well-being 2003.* Washington, D.C.

Francis, D.R.. 2001. Reducing accidents is key to lower child mortality. *National Bureau of Economic Research Digest.* Available at www.nber.org.

Heckman, J. 2007. The economics, technology, and neuroscience of human capability formation. Proceedings of the National Academy of Sciences of the U.S.A. August 14; 104(33): 13250–13255.

Hillis, S.D., Anda,, R.F. & Dube, S.R., Felitti, VJ, Marchbanks, PA, Marks, JS. 2004. The association between adverse childhood experiences and adolescent pregnancy, long-term psychosocial outcomes, and fetal death. *Pediatrics* 113(2):320-327.

Hood, E. 2005. Dwelling disparities: How poor housing leads to poor health.

Environmental Health Perspectives 113(5).

Institute of Medicine. 2004. *Health Literacy: A Prescription to End Confusion.*

Insurance Institute for Highway Safety. 2009. *Fatality facts 2007: Bicycles*. Accessed at www.iihs.org/research/fatality_facts_2007/bicycles.html.

Joyce, T. 2005. Infant and child health. National Bureau of Economic Research. Accessed online at www.nber.org/reporter/winter05/joyce.html#N_1_.

KIDS COUNT Data Center. 2009. Accessed at http://datacenter.kidscount.org

Lung, C. & Daro, D. 2006. Current Trends in Child Abuse Reporting and Fatalities: The Results of the 2005 Annual Fifty State Survey. National Committee to Prevent Child Abuse.

McClain, P., Sacks, J., Froehlke, R., & Ewigman, D. 2003. Estimates of fatal child abuse and neglect, United States, 1979 through 1988. *Pediatrics* 91, 338-343

National Association of Child Care Resource and Referral Agencies. 2009. We CAN Do Better: 2009 Update. NACCRRA's Ranking of State Child Care Center Regulation and Oversight. Accessed online at www.naccrra.org/policy/recent_reports/WCDB09.php.

National Association of Child Care Resource and Referral Agencies. 2009. *The economy's impact on child care*. Accessed online at www.naccrra.org/policy/economic-stimulus-briefing-room/docs/EconImpact_One_Pager.pdf.

National Highway Traffic Safety Administration Center for Statistics and Analysis. 2009. *Traffic safety facts: Children 2007 data*. Accessed online at www.nhtsa.gov/portal/site/nhtsa/menuitem.6a6eaf83cf719ad24ec86e10dba046a0/.

National Highway Traffic Safety Administration Center for Statistics and Analysis. 1999.

National Latino Children's Institute. 2009. Accessed at www.nlci.org/kits/corazon_intro page.htm.

Ostberg, M. & Hagekull, B. 2000. A structural modeling approach to the understanding of parenting stress. *Journal of Clinical Child Psychology* 29(4), 615-625.

Pan, R.J., Littlefield, D. et al. 2005. Building healthier communities for children and families: Applying asset-based community development to community pediatrics. *Pediatrics* 115: 1185-87.

Safe Kids USA. 2008. Accessed online at http://www.usa.safekids.org/fire/fire.html.

Safe Kids Worldwide. 2007. Bicycle, Rollerblade and Skateboard Injuries. Accessed online at www.usa.safekids.org/content_documents/2007_Fact_Sheet_Bicycling_Skating.doc.

Save the Children. 2008. *State of the world's mothers 2008: Closing the survival gap for children under 5*, page 41. Accessed online from: http://www.savethechildren.org/campaigns/state-of-the-worlds-mothers-report/2008/

Schnitzer, P.G. 2006. Prevention of unintentional childhood injuries. *American Family Physician* 74(11):1864-9.

Wise, P.H.. 2004. The transformation of child health in the United States. *Health Affairs* 23(5):9-25.

Witt, A.D. & Querait, M. 2004. *What happens when child care inspections and complaints are made available on the Internet?* National Bureau of Economic Research Working Paper Series, No. 10277. Accessed online at www.wellesley.edu/Economics/partner/w10227.pdf.

Online Resources

Child Welfare League of America
www.cwla.org

National Alliance for Safe Schools
www.safeschools.org

National Center for Injury Prevention and Control
www.cdc.gov/ncipc

National Highway Traffic Safety Administration
www.nhtsa.dot.gov

Safe Kids USA
www.usa.safekids.org

U.S. Consumer Product Safety Commission
www.cpsc.gov