



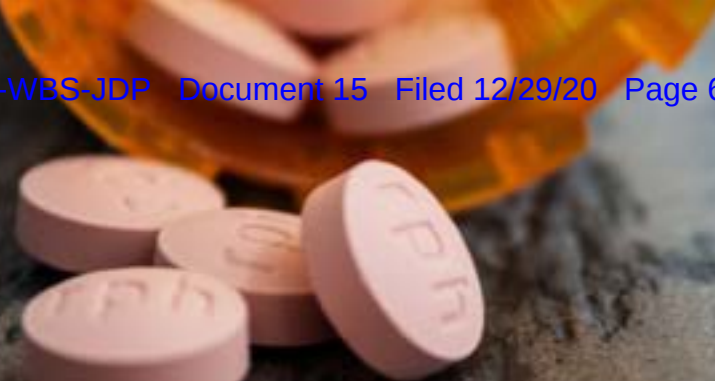
HEALTH CRISIS IN AMERICA

High Infant Mortality

Notwithstanding that the United States spends more on healthcare than any country in the world, American children have poorer outcomes and are less likely to survive their first year of life than children born in many other high-income nations.

On their first day of birth, American infants have the highest mortality rate of any industrialized nation in the world. Even when premature births are excluded, more apparently healthy American babies die in infancy of sudden and unexplained causes than infants in other wealthy countries.

MacDorman et al. (2014). International comparisons of infant mortality and related factors: United States and Europe, 2010. National Vital Statistics Reports 63(5):1-6. https://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_05.pdf



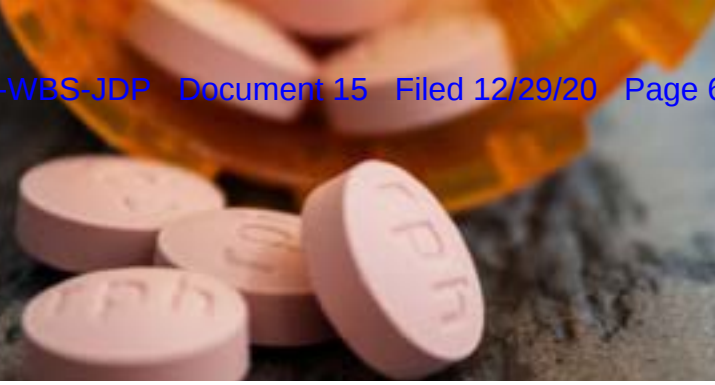
HEALTH CRISIS IN AMERICA

Pandemic of Chronic Diseases

In recent decades, American children have experienced a decline in once common childhood infections, such as measles, whooping cough and chickenpox. At the same time, a growing number of children have begun suffering from a wide range of non-communicable, serious and often incurable illnesses, including neurodevelopmental disorders such as autism and learning disabilities, mental illnesses such as anxiety and obsessive compulsive disorder, and an array of immune-mediated diseases such as asthma and autoimmune diseases. These once rare pediatric anomalies now afflict American children in pandemic proportions.

A 2011 Health Affairs assessment estimated that 43 percent (32 million) of American children currently suffer from at least one of twenty chronic health conditions, which increases to more than half (54.1 percent) when overweight, obesity or being at risk for developmental delays are included. Nearly one-fifth (14.2 million) of children have conditions resulting in a special health care need.

Bethell et al. (2011). A national and state profile of leading health problems and health care quality for US children: key insurance disparities and across-state variations. *Academic Pediatrics* 11(3 Suppl):S22-S33.
<https://doi.org/10.1016/j.acap.2010.08.011>



Pandemic of Chronic Diseases (cont'd)

The Centers for Disease Control and Prevention (CDC) estimates that more than a quarter (27 percent) of American children have a chronic condition and one in fifteen are burdened with multiple chronic conditions.

Centers for Disease Control and Prevention, Multiple Chronic Conditions Among Outpatient Pediatric Patients, Southeastern Michigan, 2008–2013. BRIEF, Vol. 12, 2015. https://www.cdc.gov/pcd/issues/2015/14_0397.htm

It was reported in *The Journal of the American Medical Association* (JAMA) that chronic illnesses in children doubled from 12.8 to 26.6 percent between 1994 and 2006, with low-income, racial and ethnic minority children being disproportionately affected in an epidemic that has continued to grow.

Van Cleave et al. (2010). Dynamics of Obesity and Chronic Health Conditions among Children and Youth. JAMA 303(7):623–630. <https://doi.org/10.1001/jama.2010.104>.

Compared to children two generations ago (in the 1960s), as reported in Health Affairs, American children are now more than four times more likely to be burdened with a health condition so severe that it affects their usual daily activities.

Perrin et al. (2014). The rise in chronic conditions among infants, children, and youth can be met with continued health system innovations. Health Affairs 33(12):2099-2105. <https://doi.org/10.1377/hltha.2014.0832>

A 2018 Pediatrics study reported that one-fifth of American children and adolescents regularly use prescription medication and 12% of boys aged six to 12 years are prescribed more than one drug.

Dima et al. (2018). Prescription Medication Use Among Children and Adolescents in the United States. Pediatrics 142(3):e20181042. <https://doi.org/10.1542/peds.2018-1042>

Much of this disease burden has come from neurodevelopmental disorders, mental illness, and immune-mediated conditions.



THE CONTROL GROUP
LITIGATION

Exhibit 474

HEALTH CRISIS IN AMERICA

Neurodevelopmental Disorders

The profound neurodevelopmental disorder called Autism Spectrum Disorder, virtually non-existent less than a century ago, has increased to one in 54 in children aged 8 years in 2016.

Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report, March 27, 2020. Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years – Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2016. https://www.cdc.gov/mmwr/volumes/69/ss/ss6904a1.htm?s_cid=ss6904a1_w

In addition, the CDC reports that today more than seven million American children have been diagnosed with attention-deficit/hyperactivity disorder (ADHD), including 388,000 children aged just two to five years old.

Centers for Disease Control and Prevention, Data and Statistics about ADHD. <https://www.cdc.gov/ncbddd/adhd/data.html>

The number of ADHD diagnoses swelled by 42 percent between 2003 and 2011 and continues to increase an average of five percent per year.

Centers for Disease Control and Prevention, Trends in the Parent-Report of Health Care Provider-Diagnosis and Medication Treatment for ADHD: United States, 2003–2011. <https://www.cdc.gov/ncbddd/adhd/features/key-findings-adhd72013.html>

Neurodevelopmental Disorders (cont'd)

“The estimate for learning disabilities in 2011–2012 was 8.0 percent for children of ages 3–17 (NSCH, 2012a).”

Boat TF, Wu JT, eds. Washington (DC): National Academies Press (US); 2015. Mental Disorders and Disabilities Among Low-Income Children. <https://www.ncbi.nlm.nih.gov/books/NBK332880/>

“The root causes of the present global pandemic of neurodevelopmental disorders are only partly understood,” according to a review in *Lancet Neurology*, which points to a significant role for environmental toxins in its causation. “Although genetic factors have a role, they cannot explain recent increases in reported prevalence, and none of the genes discovered so far seem to be responsible for more than a small proportion of cases.”

Grandjean & Landrigan (2014). Neurobehavioural effects of developmental toxicity. *Lancet Neurology* 13(3):330–338. [https://doi.org/10.1016/S1474-4422\(13\)70278-3](https://doi.org/10.1016/S1474-4422(13)70278-3)

ASD is projected to continue on its ascending trajectory into the future as its causes are unidentified and unaddressed.



HEALTH CRISIS IN AMERICA

Mental Illness

According to the Child Mind Institute, 17.1 million American children have had or have a diagnosable mental illness.

Child Mind Institute, 2016 Child Mind Institute Children's Mental Health Report.
<https://childmind.org/downloads/2016%20Childrens%20Mental%20Health%20Report.pdf>

The CDC reports that one in five children "experience a mental disorder in a given year," and that the Nation spends an estimated \$247 billion each year treating and managing childhood mental disorders.

United States Centers for Disease Control and Prevention, Improving Children's Behavioral Health.
<https://www.cdc.gov/childrensmentalhealth/features/child-mental-health.html>

The CDC reports that 7.1 percent (4.4 million) of American children aged three to 17 are diagnosed with anxiety disorders that have been increasing in recent years. Another 1.9 million children have been diagnosed with depression.

Centers for Disease Control and Prevention, Anxiety and depression in children: Get the facts.
<https://www.cdc.gov/childrensmentalhealth/features/anxiety-depression-children.html>



Mental Illness (cont'd)

According to the National Institute of Mental Health, “an estimated 49.5% of adolescents [aged 13-18] had any mental disorder. Of adolescents with any mental disorder, an estimated 22.2% had severe impairment.”

National Institute of Mental Health, Mental Illness. <https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>

Self-harm-related emergency department visits by youth have skyrocketed, with 18.8% annual increase among females aged 10 to 14 years starting in 2009, from 109.8 (95% CI, 69.9-149.7) in 2009 to 317.7 (95% CI, 230.3-405.1) per 100 000 population in 2015.

Mercado et al. (2017). Trends in Emergency Department Visits for Nonfatal Self- inflicted Injuries Among Youth Aged 10 to 24 Years in the United States, 2001-2015. JAMA 318(19):1931-1933. <https://doi.org/10.1001/jama.2017.13317>

In 2016, suicide became the second leading cause of death for those aged 10 - 34 years, with the greatest increases among those 10 to 24 years old.

Centers for Disease Control and Prevention, National Center for Health Statistics Data Brief No. 330, November, 2108. Suicide Mortality in the United States, 1999-2017, <https://www.cdc.gov/nchs/products/databriefs/db330.htm>



HEALTH CRISIS IN AMERICA

Immune-Mediated Disorders

Immune-mediated disorders — those involving immune activation — have soared among American children in recent decades; allergies, asthma and autoimmune diseases are all inexplicably on a sharp upward trajectory.

Asthma is the most common chronic disease of childhood and, in the latter part of the 20th century, has reached epidemic proportions and continues to increase. According to the CDC, asthma affects 25 million people, including six million children under 18 and is a “significant health and economic burden to patients, their families, and society.”

Centers for Disease Control and Prevention, Most Recent National Asthma Data. https://www.cdc.gov/asthma/most_recent_national_asthma_data.htm

According to the Asthma and Allergy Foundation of America, more than 50 million Americans are affected by allergies.

Asthma and Allergy Foundation of America, Allergy Facts and Figures. <https://www.aafa.org/allergy-facts/>

This includes millions of American children with reported allergic rhinitis (5.2 million), respiratory allergies (7.1 million), food allergies (4.8 million) and skin allergies (9.2 million), in 2018.

Centers for Disease Control and Prevention, Allergies and Hay Fever. <https://www.cdc.gov/nchs/fastats/allergies.htm>



Immune-Mediated Disorders (cont'd)

A growing number of young Americans die from a life-threatening form of allergy called anaphylaxis, as its occurrence is increasing across all ages in the United States, with highest risk of mortality in teenagers and young adults.

Dinakar (2012). Anaphylaxis in children: current understanding and key issues in diagnosis and treatment. *Current Allergy and Asthma Reports* 12(6):641-649. <https://doi.org/10.1007/s11882-012-0284-1>

Autoimmune diseases, of which there are at least 80 distinct conditions, occur as a result of the immune system attacking the body's own tissues and organs. Some of the more common autoimmune conditions include type 1 diabetes, rheumatoid arthritis, systemic lupus erythematosus and inflammatory bowel disease. Taken together, these conditions, once so rare they were virtually unheard of, have increased from year to year for mostly unknown reasons and are now, "as a group afflict 5%–9% of the U.S. population," according to a report in *International Journal of Molecular Sciences*.

Parks et al. (2014). Expert panel workshop consensus statement on the role of the environment in the development of autoimmune disease. *International Journal of Molecular Sciences* 15(8):14269-14297. <https://doi.org/10.3390/ijms150814269>

HEALTH CRISIS IN AMERICA

Pediatric Cancer

According to American Cancer Society, childhood cancer rates have been rising for the past few decades.

American Cancer Society, Key Statistics for Childhood Cancers.
<https://www.cancer.org/cancer/cancer-in-children/key-statistics.htm>

It has been reported in the Journal of the National Cancer Institute that children born in the 1990s have double the risk of colon cancer and quadruple the risk of rectal cancer compared to people born in the 1950s.

Siegel et al. (2017). Colorectal Cancer Incidence Patterns in the United States, 1974–2013. Journal of the National Cancer Institute 109(8):djw322. <https://doi.org/10.1093/jnci/djw322>



HEALTH CRISIS IN AMERICA

National Crisis

The People of the United States of America, and particularly the Nation's children, are suffering from an unprecedented pandemic of chronic diseases. More American children are sick today than in any previous generation. They are suffering from a wide range of conditions: from asthma and autoimmune diseases to neurodevelopmental and mental health disorders that are increasingly known to be associated with an underlying dysregulated immune activation. The fallout from this health emergency is an economic, healthcare and national security crisis for the Nation.

The epidemic of childhood illness is straining the Nation, imposing an enormous and growing burden on individuals, families and society. Chronically ill children become chronically ill adults.

According to the CDC, chronic disease and mental illness account for most American deaths, consume 90% of the Nation's \$3.5 trillion in annual health care expenditures and are projected to account for more than \$42 trillion in spending by 2030.

National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Health and Economic Costs of Chronic Diseases. <https://www.cdc.gov/chronicdisease/about/costs/index.htm#ref1>



National Crisis (cont'd)

The burden of illness is straining America's school system as well, which is struggling to accommodate the demands of the growing population of students with special needs.

The health crisis of America's youth is a national security crisis as well; nearly a third (32 percent) of all young people have health problems – other than their weight – that prevent them from military service.

Mission: Readiness, Washington, DC, 2009. Ready, willing, and unable to serve.
<http://cdn.missionreadiness.org/MR-Ready-Willing-Unable.pdf>