

FLINT WATER CRISIS

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BACKGROUND

Apr. 25, 2014

Flint water
source
switched to
flint river

Jan. 21, 2015

Flint residents
complain
about
water

Feb. 26, 2015

EPA manager
detects
lead levels
in home of
resident, 7x
too high

March 23, 2015

City counsel
votes to
reconnect to
old water
supply. E.M.
overrules vote

June 24, 2015

EPA manager
says VA Tech
scientists found
high lead
levels in 4
homes.

July 9, 2015

Flint Mayor,
Walling,
drinks Flint tap
water on local
T.V. to dispel
residents' fear

Sept. 8, 2015

V.A. Tech study
reports 40%
Flint homes
have elevated
levels of lead

Sept. 24, 2015

Pediatrician
releases study
showing high
levels of lead
in children

Oct. 15, 2015

MI Gov. Snyder
signs bill to re-
connect to old
water supply.

Dec. 15, 2015

Flint Mayor,
Weaver
declares state
of emergency

Jan. 5, 2016

Gov. Snyder
declares state
of emergency
in Genesee
Co.

Jan. 16, 2016

President
Obama
declares state
of emergency-
\$5 million in
aid

In the following months, 15 state officials were charged with crimes including misdemeanors, involuntary manslaughter, misconduct in office, obstructing justice, and conspiracy.

12 people are believed to have died in relation to the water crisis.

EFFECTS OF LEAD ON PHYSICAL HEALTH

- LEAD IS ABSORBED AND STORED IN OUR BONES, BLOOD, AND TISSUES. IT DOES NOT STAY THERE PERMANENTLY, RATHER IT IS STORED THERE AS A SOURCE OF CONTINUAL INTERNAL EXPOSURE..
- EXPOSURE TO HIGH LEVELS OF LEAD MAY CAUSE ANEMIA, WEAKNESS, AND KIDNEY AND BRAIN DAMAGE.
- VERY HIGH LEAD EXPOSURE CAN CAUSE DEATH.
- PEOPLE WITH PROLONGED EXPOSURE TO LEAD MAY ALSO BE AT RISK FOR HIGH BLOOD PRESSURE, HEART DISEASE, KIDNEY DISEASE, AND REDUCED FERTILITY.
- THE DEPARTMENT OF HEALTH AND HUMAN SERVICES (DHHS), ENVIRONMENTAL PROTECTION AGENCY (EPA), AND THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) HAVE DETERMINED THAT LEAD IS PROBABLY CANCER-CAUSING IN HUMANS.

(CENTER FOR DISEASE CONTROL)

EFFECTS OF LEAD ON CHILDREN'S HEALTH

- LEAD CAN CROSS THE PLACENTAL BARRIER
- LEAD CAN DAMAGE A DEVELOPING BABY'S NERVOUS SYSTEM.
- GENERALLY, LEAD AFFECTS CHILDREN MORE THAN IT DOES ADULTS. CHILDREN TEND TO SHOW SIGNS OF SEVERE LEAD TOXICITY AT LOWER LEVELS THAN ADULTS.
- LEAD EXPOSURE CAN CAUSE MISCARRIAGE, STILLBIRTHS, AND INFERTILITY (IN BOTH MEN AND WOMEN)

(CENTER FOR DISEASE CONTROL)

ELEVATED BLOOD LEAD LEVELS IN FLINT, MI

- RESEARCHERS ANALYZED DIFFERENCES IN PEDIATRIC BLOOD LEAD LEVEL INCIDENCE BEFORE AND AFTER THE FLINT WATER CRISIS BEGAN.
- INCIDENCE OF ELEVATED BLOOD LEAD LEVELS INCREASED FROM 2.4% TO 4.9% AFTER THE WATER SOURCE CHANGE
- NEIGHBORHOODS WITH THE HIGHEST LEVELS OF ELEVATED BLOOD LEAD EXPERIENCED A 6.6% INCREASE.
- GEOSPATIAL ANALYSIS REVEALED THAT DISADVANTAGED NEIGHBORHOODS HAD THE HIGHEST ELEVATED BLOOD LEAD LEVEL INCREASES.

(HANNA-ATTISHA, LACHANCE, SADLER, & SCHNEPP, 2016)

EFFECTS OF FLINT WATER CRISIS ON THE COMMUNITY

THOSE WHO EXPERIENCED POORER QUALITY OF TAP WATER DURING THE WATER CRISIS
EXPERIENCED GREATER PTSD SYMPTOMATOLOGY.

SYMPTOMS OF PTSD CAN PERSIST FOR YEARS AND RESULT IN SERIOUS INTERRUPTIONS IN
INDIVIDUAL FUNCTIONING AND DAILY LIFE (KEARNEY, ET AL., 2012)

MANY COMMUNITY MEMBERS HAD TO SPEND EXTRA MONEY TO PURCHASE WATER SAFETY
ITEMS, GAS TO GET THOSE ITEMS, AND GAS AND MONEY TO GET TO ADDITIONAL DOCTOR
APPOINTMENTS, DESPITE LIMITED FINANCIAL RESOURCES.

(KRUGER, ET. AL, 2017); (HEARD-GARRIS, ET. AL, 2017) & (KEARNEY, ET AL., 2012)

SOCIETAL IMPLICATIONS

- LOWER SOCIOECONOMIC STATUS AND MINORITY GROUPS ARE ASSOCIATED WITH AN INCREASED RISK FOR INITIAL AND REPEAT DRINKING WATER VIOLATIONS
- THERE IS A STRONG RELATIONSHIP BETWEEN UNINSURED STATUS AND ENVIRONMENTAL JUSTICE ISSUES, BECAUSE THOSE LACKING INSURANCE ARE MOST LIKELY TO BE DISPROPORTIONATELY EXPOSED TO HAZARDS, BUT LEAST EQUIPPED TO HANDLE THEM.
- THERE IS A NEED FOR IMPROVED EFFORTS TO ASSIST VULNERABLE COMMUNITIES IN ADDRESSING CONTAMINATION AND PROTECTING SOURCE WATERS.

RECOMMENDATIONS

THE MAJORITY OF RESOURCES RECEIVED FROM THE FLINT WATER CRISIS HAVE BEEN DEVOTED TO CHILDREN'S HEALTH, AND RIGHTLY SO. HOWEVER, VULNERABLE ADULT POPULATIONS WOULD ALSO BENEFIT FROM ACCESS TO RESOURCES INCLUDING QUALITY MENTAL HEALTH CARE, ESPECIALLY FOR THOSE WHO REPORT MEDICAL, FINANCIAL, AND WORK-RELATED CONSEQUENCES (HEARD-GARRIS, ET AL., 2017) & (HANNA-ATTISHA, ET AL., 2017).

THE BEST WAY TO PREVENT EXPOSURE TO LEAD AND OTHER TOXINS IS TO PROVIDE A LEAD-SAFE HOUSING ENVIRONMENT. ACHIEVING THIS WOULD REQUIRE TESTING FOR LEAD IN OLDER, URBAN AREAS AND WOULD REQUIRE SIGNIFICANT TIME AND EFFORT (SCHUCH, CURTIS, & DAVIDSON, 2017).

RECOMMENDATIONS CONTINUED

- HANDOUTS SHOULD EMPHASIZE THE POTENTIAL MENTAL HEALTH IMPLICATIONS OF THE WATER CRISIS FOR ADULTS AND PROVIDE CONTACT INFORMATION FOR MENTAL HEALTH TREATMENT AND SUPPORT GROUPS (HANNA-ATTISHA, ET AL. 2017).

(HANNA-ATTISHA, ET AL. 2017).

REFERENCES

- CDC - LEAD: HEALTH PROBLEMS CAUSED BY LEAD - NIOSH WORKPLACE SAFETY AND HEALTH TOPIC. (N.D.). RETRIEVED FROM [HTTPS://WWW.CDC.GOV/NIOSH/TOPICS/LEAD/HEALTH.HTML](https://www.cdc.gov/niosh/topics/lead/health.html)
- FLINT WATER CRISIS FAST FACTS. (2019, APRIL 23). RETRIEVED FROM [HTTPS://WWW.CNN.COM/2016/03/04/US/FLINT-WATER-CRISIS-FAST-FACTS/INDEX.HTML](https://www.cnn.com/2016/03/04/us/flint-water-crisis-fast-facts/index.html)
- HANNA-ATTISHA, M., LACHANCE, J., CASEY SADLER, R., & CHAMPNEY SCHNEPP, A. (2016). ELEVATED BLOOD LEAD LEVELS IN CHILDREN ASSOCIATED WITH THE FLINT DRINKING WATER CRISIS: A SPATIAL ANALYSIS OF RISK AND PUBLIC HEALTH RESPONSE. *AMERICAN JOURNAL OF PUBLIC HEALTH*, 106(2), 283–290. [HTTPS://DOI.ORG/10.2105/AJPH.2015.303003](https://doi.org/10.2105/AJPH.2015.303003)
- HEARD-GARRIS, N., ROCHE, J., CARTER, P., ABIR, M., WALTON, M., ZIMMERMAN, M., HEARD-GARRIS, N. J. (2017). VOICES FROM FLINT: COMMUNITY PERCEPTIONS OF THE FLINT WATER CRISIS. *JOURNAL OF URBAN HEALTH*, 94(6), 776–779. [HTTPS://DOI.ORG/10.1007/S11524-017-0152-3](https://doi.org/10.1007/s11524-017-0152-3)
- KEARNEY, D. J., MCDERMOTT, K., MALTE, C., MARTINEZ, M., & SIMPSON, T. L. (2012). ASSOCIATION OF PARTICIPATION IN A MINDFULNESS PROGRAM WITH MEASURES OF PTSD, DEPRESSION AND QUALITY OF LIFE IN A VETERAN SAMPLE. *JOURNAL OF CLINICAL PSYCHOLOGY*, 68, 101– 116. [HTTP://DOI.ORG/10.1002/JCLP.20853](http://doi.org/10.1002/JCLP.20853)

REFERENCES

- KRUGER, D. J., CUPAL, S., FRANZEN, S. P., KODJEBACHEVA, G., BAILEY, E. S., KEY, K. D., & KAUFMAN, M. M. (2017). TOXIC TRAUMA: HOUSEHOLD WATER QUALITY EXPERIENCES PREDICT POSTTRAUMATIC STRESS DISORDER SYMPTOMS DURING THE FLINT, MICHIGAN WATER CRISIS. *JOURNAL OF COMMUNITY PSYCHOLOGY*, 45(7), 957–962. [HTTPS://DOI.ORG/10.1002/JCOP.21898](https://doi.org/10.1002/JCOP.21898)
- MCDONALD, Y. J., & JONES, N. E. (2018). DRINKING WATER VIOLATIONS AND ENVIRONMENTAL JUSTICE IN THE UNITED STATES, 2011–2015. *AMERICAN JOURNAL OF PUBLIC HEALTH*, 108(10), 1401–1407. [HTTPS://DOI.ORG/10.2105/AJPH.2018.304621](https://doi.org/10.2105/AJPH.2018.304621)
- SCHAIDER, L. A., SWETSCHINSKI, L., CAMPBELL, C., & RUDEL, R. A. (2019). ENVIRONMENTAL JUSTICE AND DRINKING WATER QUALITY: ARE THERE SOCIOECONOMIC DISPARITIES IN NITRATE LEVELS IN U.S. DRINKING WATER? *ENVIRONMENTAL HEALTH: A GLOBAL ACCESS SCIENCE SOURCE*, 18(1), 1–15. [HTTPS://DOI.ORG/10.1186/S12940-018-0442-6](https://doi.org/10.1186/S12940-018-0442-6)
- SCHUCH, L., CURTIS, A., & DAVIDSON, J. (2017). REDUCING LEAD EXPOSURE RISK TO VULNERABLE POPULATIONS: A PROACTIVE GEOGRAPHIC SOLUTION. *ANNALS OF THE AMERICAN ASSOCIATION OF GEOGRAPHERS*, 107(3), 606–624. [HTTPS://DOI.ORG/10.1080/24694452.2016.1261689](https://doi.org/10.1080/24694452.2016.1261689)
- WILLIS, K., & COX MEDIA GROUP NATIONAL CONTENT DESK. (2019, JANUARY 20). FLINT WATER CRISIS: 15 MICHIGAN OFFICIALS CHARGED. RETRIEVED FROM [HTTPS://WWW.AJC.COM/NEWS/NATIONAL/FLINT-WATER-CRISIS-MICHIGAN-OFFICIALS-CHARGED/DLBM7SFCCUNO54DL9IKWOYP/](https://www.ajc.com/news/national/flint-water-crisis-michigan-officials-charged/dlbm7sfccuno54dl9ikwoyp/)