

(Music)

Mark Masselli: This is Conversations on Health Care. I am Mark Masselli.

Margaret Flinter: And I am Margaret Flinter.

Mark Masselli: Well Margaret, the political primaries and caucuses are heating up around the country, and it's been challenging to swift through all of the political noise and rhetoric, but the most recent Democratic Debate took place in the community dealing with a major public health crisis Flint, Michigan. Residents there were exposed to dangerously high levels of lead and other contaminants through their public drinking water.

Margaret Flinter: At the Democratic Debate in Flint, we were able to focus on something that is vitally important public health, and the Flint water crisis that is a public health perfect storm. And you know Mark, I don't know if I have ever seen such a powerful backdrop during one of these debates. The audience was filled with Flint residents who have been directly impacted by the crisis, their children who had been exposed to high levels of lead which poses a serious risk to their long-term health, and other major contaminants have caused additional health problems throughout the community as well as disrupting daily life in the search of pure water. Government officials were denying the existence of a problem, and it wasn't until our guest today came along that there was a shift in the situation.

Mark Masselli: Dr. Marc Edwards is the person who shined a spotlight on the crisis and is now working to fix the problem. He is a MacArthur Fellow, Civil Engineer, and Professor of Environmental and Water Resources at Virginia Tech. His specialty is the decaying of the nation's crumbling water delivery infrastructure and the threat that it poses to human health.

Margaret Flinter: And to no matter what the topic, you can hear all of our shows by going to www.chcradio.com

Mark Masselli: And as always, if you have comments, please e-mail us at chcradio@chc1.com, or find us on Facebook or Twitter, we love hearing from you.

Margaret Flinter: We will get to our interview with Dr. Marc Edwards in just a moment.

Mark Masselli: But first, here is our producer Marianne O'Hare with this week's Headline News.

(Music)

Marianne O'Hare: I am Marianne O'Hare with these Health Care Headlines. The political season is generating more fallout, Dr. Ben Carson no longer seeking the republican nomination for president. The former neurosurgeon says he doesn't see a pathway to success in this contentious election season being dominated by real estate developer Donald Trump. The White House and public health officials are planning a summit April 1st on the Zika virus that researchers in Brazil the epic center of the Latin American outbreak say there may be more to worry about. They are saying the virus linked to birth defects in babies as well as neurological disorders in adults maybe carried by more than one kind of mosquito. Scientists announcing they were able to infect other species especially one that's 20 times more common in Brazil.

CTE researchers have found in almost every single former NFL player who died, had a brain that showed signs of the neurological disorder brought on by multiple blows to the head. But little attention has been paid to women's sports. Retired U.S. women soccer player Brandi Chastain wants to change that planning to donate her brain to CTE research, increasingly young women playing competitive sports are also suffering traumatic brain injuries. Chastain is the second national team member to decide to donate her brain after Cindy Parlow Cone, both women and several others from the 1999 team have argued against heading in youth soccer.

I am Marianne O'Hare with these Health Care Headlines.

(Music)

Mark Masselli: We are speaking today with Dr. Marc Edwards who is overseeing the mitigation of the Flint Michigan Water Crisis. Dr. Edwards is the Civil Engineer and Charles P. Lunsford Professor of Environmental and Water Resources Engineering at Virginia Polytech Institute whereas focuses on ensuring the protection of safe drinking water. He has earned numerous awards and distinctions including 2008 MacArthur Foundation Fellowship for his activism. He earned his B.S. from SUNY Buffalo and is M.S. and Ph.D. from the University of Washington in Seattle. Dr. Edwards, welcome to Conversations on Health Care.

Dr. Marc Edwards: Thank you for having me.

Mark Masselli: It's an honor to have you join us at the time when you are so focusing on mitigating a major public health crisis unfolding in Flint, Michigan. Tens of thousands of Flint residents have been exposed to high levels of lead and other toxic contaminants through their public water infrastructure after the government entities switched the water sources, and then consistently denied there was a problem, and you can't make this stuff up. But you have been also exposed several years ago a similar matter that impacted the population of Washington D.C., and you said there was only a matter of time for another such

crisis to emerge. Could you help our listeners understand the scope and the context of the current crisis in Flint?

Dr. Marc Edwards: In 2001 to 2004, there was actually a massive lead and water contamination event in Washington D.C. that was probably 20 to 30 times worse than what currently happened in Flint. But that problem was completely covered up by fraudulent U.S. Centers for Disease Control report that claim no one got hurt from this unprecedented exposure, and there wasn't until 2010 that that was exposed by a congressional investigation in our research. That said even though the Flint water disaster is only 1/30th as bad as Washington D.C., the Centers for Disease Control has actually lowered the threshold that's considered a concern or lead poisoning in children. And as a result, even though the lead levels in Flint water were not as bad as Washington D.C. certainly they were horribly bad, it did elevated blood lead of many children over the current five microgram per deciliter thresholds and then some neighborhoods that had higher water lead and lower incomes, the incidents of elevated blood lead rose above 10% in the August of last year, so literally one out of every 10 children had the blood lead elevated in some neighborhood. So there is no safe level of lead exposure and of course, in addition to the lead, they destroyed the pipe infrastructure probably hundreds of millions of dollars of damage and then we have legionella deaths which are also related to the failure to control corrosion control laws. And yeah all of this originated from the failure to federal law by civil servants both at MDQ and then a political point at EPA who knew about it and let it happen.

Margaret Flinter: Well Dr. Edwards, I can't think of a more sitting title for of course than the one that you teach in engineering ethics and heroism at Virginia Tech. It seems you are surrounded by many heroes throughout the unfolding crisis, the mom who first reached out to you and who became your leading citizen scientist in this crisis, there was the physician who spoke out publically after seeing a spike in kids with elevated lead levels. So many people try to confront the problem, bring it to attention, but seem to be thwarted by authorities or even publically excoriated, maybe you could share with us the timeline of the Flint water crisis and what was it that made you and your team of scientists and students decided to go all in for Flint as you said?

Dr. Marc Edwards: The switch to the new Flint River water source occurred in April of 2014, and in retrospect problems started right immediately. People were noticing problems related to corrosion control which Flint forgot to install. So people were complaining about red colored water which is iron rust, they were seeing pipes breaking because they were being knocked by the water. The General Motors plan in October of 2014 found that the water is heating their car parts up so they had to switch the water sources. And in the meantime, the people who forgot to follow the law were misleading everyone. And then in early 2015, people started noticing lead in the water and in fact, one mom in Flint had twins and she noticed one of them wasn't growing as fast as the other and they test it for lead and water and lead and blood and founded both were high.

At that point, we got involved because Mr. Del Toral an EPA employee had been working with this hero mom, me Lee-Anne Walters and so we sampled their house and wow found literally hazardous waste levels of lead coming out of this family's tap. And Mr. Del Toral as I said he put his career on the line to raise alarms about this that EPA should consider taking over the system to protect people. Unfortunately, his memo that he wrote was covered up by his boss. She allowed this brave employee to be publically discredited and as a result to that cover up people in Flint were told that the water was safe to drink when it wasn't. The thing that really angered us and made us go all in for Flint was that residents actually had a meeting with these state bad actors, but civil servants laughed in the face of Ms. Walters which I don't see anything funny about a child being lead poisoned. They bragged about how this EPA employee had been handled and he would not be heard from again. So turns out they made a deal with EPA that EPA would not intervene to help Flint residents, besides getting mad we decided to form this team of 25 people. We provided funding and the expertise and allowed Flint residents to sample their water to see if it was safe or not, and they very quickly discovered it was not safe.

Mark Masselli: Your whole set of action reveal failure of the system you ran into this same problem in Washington D.C. and if it wasn't for your own moral integrity and to validate the health concerns, there are – I am not sure any of this would have been uncovered, and I am wondering what the message is to folks who want to join your brigade as citizen scientist how they might help in other parts of the country, where they are worried about their own water safety?

Dr. Marc Edwards: Well, the larger message is very scaring and that's why it's striking such a chord and that is the government that we pay to protect us is in some cases are enemy. They are not looking out for us. They are working overtime to frankly hurt us if that means that they can protect their reputation. So I guarantee you with the present culture at these agencies the truth will lose every time. I am not putting down the employees at these organizations because I know the vast majority of them are great people they want to do their job. But what we have created is these corrupt cultures where they are not making the decisions. They literally care more about their reputation of their agency than they do about the health of children. So that's what's making this – everyone so angry about this is and everyone should be upset about this and we really need bipartisan efforts to force a culture change at these agencies and remind them that they work for the public and not for themselves.

Margaret Flinter: Well Dr. Edwards, I – as I started my career as a public health nurse four decades ago and we were relentless in the pursuit of lead poisoning and elevated lead, but what was front and center always was you had to prevent it because the damage could be irreparable. Called Flint a perfect storm of health complications and maybe you could tell us a little bit about what is it that

has everyone so upset and worried about the lifelong consequences of having lead poisoning in childhood?

Dr. Marc Edwards: Lead adversely affects every system in the human body and as a result, it's official U.S. government policy that there is no safe level of lead exposure that we have to do everything in our power to engage in primary prevention or just to make sure laws are followed and children are not exposed because the harm that's been done cannot be undone, even more concern as the way we monitor for lead in children is not how you would monitor to detect lead and water exposures. Specifically, the Centers for Disease Control simply assumes that the water across the country is safe, and so what they have in place is a lead paint and lead dust monitoring program.

Margaret Flinter: Right.

Dr. Marc Edwards: And the fact that the incidents of blood lead in these children that are not the highest risk group was doubled raises concerns about what happened in the risk groups that we are not even measuring. Specifically you know the youngest infants using formula they never tested for blood lead and those are the off the charts health risk. So for all of these reasons, the doubling of the incidents of blood lead is of concern enough but when you realize the fact that the monitoring program that detected it is not designed to find lead in water risk because we have a lead in water law, you know it really raises concerns about how deep the damage goes and that's you know another reason people are just so upset about this.

Mark Masselli: We are speaking today with Dr. Marc Edwards who is sphere heading the effort to address the lead contamination crisis in Flint Michigan which is his research help confirm, he is the McArthur Foundation Fellow, a Civil Engineer and Professor of Environmental and Water Resources Engineering at Virginia Tech. You know sort of back to Flint the water supply has been switched back to its original source but the damage has been done, the population now is reliant on filtration systems, bottled water for the foreseeable future what are the other challenges that they face in terms of threat to human health?

Dr. Marc Edwards: One of the problems we are having is simply getting the water tested to see its current status because in all likelihood Flint water is now meeting federal standards. But unfortunately, Flint like many cities across the United States has never followed [ph]. So the 25-year-old Federal Lead and Copper Rule Law which means they never identified the high risk homes of with lead pipe that they were supposed to be sampling. Because they didn't do their homework 20 years ago, they can't do the testing until they go in and find the right number of homes that have lead pipe and this is proving to be a lot harder than anyone thought. So we are up there right now, my students are giving up their spring break and they are going all around the city with Flint residents and they are re-sampling. 271 homes that we sampled was Flint residents in August

of 2015 when the Flint water lead crisis was at its height. In the meantime everyone is waiting for EPA to figure out a way to do a legitimate sampling event, because Flint has never done one, and it's not until both of those pieces of the puzzle are in place that anyone is going to even think about telling people that Flint is meeting federal standards, so I think bottled water filters are going to be used for the foreseeable future at least the next couple of months, and frankly even then no one is going to trust the water anyway because they have been betrayed so fundamentally. You know, you have the National Guard walking the street distributing bottled water, putting filters on taps, neighborhoods of children with elevated blood lead and according to EPA in the state department of environmental quality Flint never failed the Lead and Copper Rule. You know so it shows you which is -- what a joke EPA has allowed this to become.

Margaret Flinter: Well Dr. Edwards certainly another health care hero in this story is the family doctor who confronted the establishment, Dr. Mona showed us that she could use just good medical research and the medical evidence that was in front of her to stand up to the powers of be who were telling her she was wrong and her actions really seemed to have helped turn the tide against those who were denying just what a crisis they had on their hands. I wonder what your thoughts are about what other frontline clinicians might learn from her experience?

Dr. Marc Edwards: You know Flint is really a story of both epic villains and epic heroes, and Dr. Mona is certainly one of those that helped us reached that critical mass that was necessary to show what was happening to the kids. If we hadn't had this just amazing group of outside people and you know those kids would still be drinking that water to this day. I think she kind of exemplify the new generation of public health professional that probably is harkens back to a generation ago.

Margaret Flinter: Right, right I think so.

Dr. Marc Edwards: Where really folks got into this field because they were altruistic and if anyone was going to hurt the children they would put it on the line to protect them and she has got the right mix of scientific and political savvy and is not afraid to take on evil when she sees it, the world desperate we need the more Dr. Monas.

Mark Masselli: You know it was interesting to listen to the democratic presidential debate in which both Hillary Clinton and Bernie Sanders called for those public officials responsible for letting the crisis unfold to be held accountable. Based on your experience what kind of punishment for negligence among public officials have you seen and what more needs to be done to ensure that public officials are held accountable?

Dr. Marc Edwards: Well in Washington D.C. there is no better example because five brave whistleblowers who put their career on the line to try to tell the public that the lead in water was high or that the agencies were corrupt, they were fired, and not one of the perpetrators of this environmental crime was held accountable, and even after they were reamed in a congressional hearing CDC refused to say that they did anything wrong. So that's why I knew that another D.C. which happened in Flint was inevitable because if you cannot learn from your mistakes you are doomed to repeat them. I think in Flint, you know we finally have seen what it takes for a federal or state employee to lose their job, you have to literally poison a city, destroy their infrastructure, cause deaths from legionnaires' disease, and at that point yeah, that does reach the threshold to finally get a government employee fired but that you know that threshold is not good enough to stop the next Flint from happening. We have to change the culture at these agency, so good, heroic people are allowed to do their jobs. We are all at risk, I mean, what happened in Flint is a miracle because it got exposed. But as I can tell you that miracle is not going to happen every time around the country and you know for that reason we really have to get this fixed.

Margaret Flinter: Well Dr. Edwards I want to may be pivot to the issue of getting it fixed and are there any examples of communities or cities around the country that have taken a proactive stance to really look at the quality of their water safety and make a plan to move forward.

Dr. Marc Edwards: I am the biggest fan of the mission of the EPA and the CDC, but they have to live up to their mission, they have to be worthy of the public trust, and frankly, I don't see an alternative but to have a trustworthy government and no one ever thought that people would behave this way without any profit motive whatsoever and I think that's what's so shocking. I am sure that there are communities you know all around the country and probably the vast majority whether water is safe but when you see something like Flint, when you see something like Washington D.C. who is to say it's not you next. So that's why I trust we have to get these agencies fixed.

Mark Masselli: We have been speaking with Dr. Marc Edwards, Civil Engineer and Professor of Environmental and Water Resources Engineering at Virginia Tech. You can learn more about his work by going to flintwaterstudy.org or you can follow them on Twitter by going to [#flintwatercrisis](https://twitter.com/flintwatercrisis). Dr. Edwards thank you so much for joining us on Conversations on Health Care today.

Dr. Marc Edwards: Thank you for having me.

[Music]

Mark Masselli: At Conversations on Health Care, we want our audience to be truly in the know when it comes to the facts about health care reform and policy. Lori Robertson is an award-winning journalist and managing editor of

FactCheck.org, a nonpartisan, nonprofit consumer advocate for voters that aim to reduce the level of deception in U.S. politics. Lori, what have you got for us this week?

Lori Robertson: Donald Trump says that federal government could save a \$300 billion a year by negotiating prescription drug prices. But Medicare which isn't allowed to negotiate drug prices now spent only \$77 billion total in federal fund on its prescription drug program in 2015, and in a March Republican Debate, he claims that the government could save hundreds of billions of dollars in waste by having prescription drug companies bid properly. One of the debate moderators, Fox News' Chris Wallace, accurately pointed out that Medicare's entire federal spending per year for Part D, its prescription drug component, was well under that. Trump countered that he was talking about saving throughout the economy but Trump has indeed claimed several times that he could save the \$300 billion per year through negotiating drug prices. According to figures from the congressional budget office three years of spending on Medicare Part D doesn't even add up to \$300 billion. All national spending on retail prescriptions whether it's through Medicare, Medicaid, private insurance or out of pocket totaled nearly \$300 billion in 2014, that's according to the National Health Expenditure Data, compiled by the Centers for Medicare and Medicaid Services. So Trump would be talking about saving all of the money the country spends on drugs per year. Democratic Presidential Candidate Bernie Sanders has cited a much lower estimate for savings from negotiating Medicare drug prices between \$230 billion to \$541 billion over 10 years. And that's my fact check for this week. I'm Lori Robertson, Managing Editor of FactCheck.org.

Margaret Flinter: FactCheck.org is committed to factual accuracy from the country's major political players and is a project of the Annenberg Public Policy Center at the University of Pennsylvania. If you have a fact, that you would like checked, email us at www.chcradio.com. We will have FactCheck.org's Lori Robertson check it out for you here on Conversations on Health Care.

[Music]

Mark Masselli: Each week Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. Pregnancy is normally an exciting time for most women but according to the research it estimated 10% of prenatal women experience some kind of depressions in their pregnancy and many are reluctant to treat their depression with medication for fear of harming the fetus.

Dr. Cynthia Battle: They are having significant symptoms that are getting in the way of feeling good and left untreated those mild to moderate symptoms can progress in some cases lead to a more serious post partum depressions.

Mark Masselli: Dr. Cynthia Battle is a psychologist at Brown University. She and her colleagues decided to test a cohort of pregnant women to see if a targeted prenatal yoga class might have a positive impact on women dealing with prenatal depression.

Dr. Cynthia Battle: And we enrolled 34 women who were pregnant who had clinical levels of depression and we measured their change in depressive symptoms over that period of time.

Mark Masselli: Not only were women able to manage their depressive incidents they also bonded with other pregnant women during the program and found additional support from their group.

Dr. Cynthia Battle: So one thing we are interested in seeing is when we provide prenatal yoga program can it improve mood and then can we even see some positive effects in terms of the birth outcome.

Mark Masselli: A guided non-medical yoga exercise program designed to assist pregnant women through depression symptoms, helping them successfully navigate those symptoms without medication. Now that's a bright idea.

(Music)

Margaret Flinter: This is Conversations on Health Care. I'm Margaret Flinter.

Mark Masselli: And I'm Mark Masselli, Peace and Health.

Conversations on Health Care, broadcast from the campus of WESU at Wesleyan University, streaming live at www.wesufm.org and brought to you by the Community Health Center.