IMPORTANT FAILINGS IN DR. AHMED'S PRESENTATION AND RESPONSE TO WINDSOR CITY COUNCILLORS ON DECEMBER 17, 2018

During Dr. Ahmed's presentation and subsequent responses to questions to City of Windsor Councillors, he made egregious errors and misrepresented data, which resulted in misleading Councillors.

One of the major failings of Dr. Ahmed interaction with Council was while he was questioned by Councillor Irek Kusmierczyk regarding the Bashash et al. studies.

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Councillor Irek Kusmierczyk to Dr. Ahmed:

> *"I've read so many journal articles, medical journal articles, dental journal articles, you name it and, ah, there are some good articles and there are some not so good articles.....There's two studies that caught my eye, and I want to get your comment on it. So there are* ***two studies published in 2017 and 2018****, both were published by* ***University of Toronto****, and they were published in partnership with* ***Harvard University, University of Michigan, Indiana University****. They were sponsored by – I think it's the* ***National Institute of Health****, and what they found in both of those studies, is that there was an association between exposure to fluoride in pregnant women and* ***elevated incidences of ADHD and lower IQ among their children****. What is really remarkable about this study is that they actually followed 213 mother-child pairs from pregnancy, and they tested the children for example at age two, at age four, age six, at age ten.*
>
> *So this was a longitudinal study, and the findings, I'm trying to quote from one of the lead authors, the conclusion was "****Our findings are consistent with a growing body of evidence suggesting that the growing, fetal nervous system may be negatively affected by higher levels of fluoride exposure****". They are not saying this is fact, they're not saying they are making an absolute conclusion, but what they're saying is that we need to investigate this more. There is enough grounds, the methodology seems to be fairly solid, there is enough grounds here that we need to do a little bit more research. Can you comment on that?"*

Dr. Ahmed's False and Misleading Statements

1. **Misrepresentation of Public Health Ontario's Evidence Review for Adverse Health Effects of Drinking Optimally Fluoridated Water (2010-2017), and two studies by Bashash et al. (2017, 2018).**

In response to the above question from Councillor Kusmierczyk, Dr. Ahmed held up a document, stating the following.

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> *"Sure. As I mentioned, this document is recently prepared by Public Health Ontario, our scientific body, and it touches on,* ***specifically on those studies****, and I would just say that* ***those studies****, and I'm quoting verbatim...:"*

Dr. Ahmed then read the following quote from the *Neurobehavioral Effects* section on page 9 of Public Health Ontario's October 2018 *Evidence Review for Adverse Health Effects of Drinking Optimally Fluoridated Water (2010-2017)* (the Evidence Review was included in the Windsor meeting agenda materials, on page 237: https://www.citywindsor.ca/cityhall/City-Council-Meetings/Meetings-This-Week/Documents/Consolidated%20Agenda%20as%20of%20Friday%20Noon%20item%20numbers-2nd%20version.pdf).

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> *"This study was critiqued by other researchers for methodological limitations including measurement error and no consideration for other potential explanatory variables (such as pre - term birth or exposure to tobacco, alcohol, arsenic or lead) apart from SES.* [43] *The results are advised to be interpreted with great caution due to high risk of ecological fallacy (water fluoridation measured at state level) and confounding bias.* [43]"

Dr. Ahmed then continued in his own words:

> *And as you know, ahem, ah, Councillor, ah, there, any time when you are looking at any study, confounding and bias is one of the most important thing that you have to look to make any kind of meaningful conclusion and, ah, based on the, the methodology, if those questions aren't raised, it, it, it raises doubt in terms of what the conclusions how the conclusions are being drawn and whether it can be applicable to other communities or other, ah, other individuals.*
>
> *And uh, this uh, back to this paper, this conclude that there is nothing to say that … there it caused any concerns in the neurodevelopment or ADHD….*

The two sentences that appear in the Evidence Review, just before the quote that Dr. Ahmed read, are as follows:

> *"The US ecological study assessed the relationship between water fluoridation and Attention Deficit Hyperactivity Disorder (ADHD) among 4-17 year olds using administrative data.*[18] *The authors concluded that states with a greater proportion of people receiving fluoridated water from public water supplies had higher proportions of parents reporting medically-diagnosed ADHD among their children, which warrants future studies to explore this relationship further.*[18]"

One can see from these two sentences that the study referenced in the quote read by Dr. Ahmed is numbered "18".

In the References section of Public Health Ontario's October 2018 Evidence Review we find the following study listed as "18":

> *18. 18. Malin AJ, Till C. Exposure to fluoridated water and attention deficit hyperactivity disorder prevalence among children and adolescents in the United States: an ecological association. Environ Health. 2015;14:17. Available from:*
> *https://ehjournal.biomedcentral.com/articles/10.1186/s12940-015-0003-1*

Thus anyone can see that study referenced in the quote read by Dr. Ahmed had nothing to do with either of the Bashash et al. studies that Dr. Ahmed had been asked about and claimed to be reading about.

In fact, the Bashash et al. studies brought up by Councillor Kusmierczyk could not possibly have been reviewed in Public Health Ontario's October 2018 Evidence Review for Adverse Health Effects of Drinking Optimally Fluoridated Water (2010-2017) because it only reviewed literature published as of May 10, 2017 as noted on pages 4, 11 and 12. Both of the Bashash et al. studies were published long after that date (late 2017 and late 2018).

Further, the quote read by Dr. Ahmed is not applicable to the Bashash et al. studies. For example:

- The quote refers to "ecological fallacy" while the Bashash et al. studies are not ecological studies; Bashash et al. used measurements of individual total fluoride exposure obtained from urine samples at various time points;

- The quote refers to "water fluoridation measured at state level" while the Bashash et al. studies did not involve water fluoridation; tap water is not fluoridated in Mexico City;

- The quote cites a study that had not controlled for potential explanatory variables apart from socioeconomic status while Bashash et al. controlled for many potential explanatory variables in addition to socioeconomic status: gestational age at birth, birthweight, birth order, sex, maternal marital status, smoking history, age at delivery, education, lead exposure.

Further still, the Bashash et al. studies could not have been included in Public Health Ontario's October 2018 Evidence Review due to the narrow scope of that Review, as made clear on page 3 of the Evidence Review:

> ***Purpose*** *Based on a request from public health units in Ontario, the purpose of this report is to provide a summary of the 2010 Health Canada fluoride document findings (Appendix A) and new evidence on adverse health effects of optimally controlled fluoridated community drinking water on humans, published since then. It is important to note that the 2010 Health Canada fluoride document included all studies irrespective of the fluoridation level and source, and included human as well as animal studies. The scope of the present report is optimally controlled fluoridated community drinking water and humans. Therefore, content from the 2010 Health Canada fluoride document that is beyond the present scope is not described here.*

and on page 4:

> ***Methods*** *… Articles evaluating the effect of naturally fluoridated water (where the fluoride concentrations vary significantly) were not considered, as the intent was to assess the effect of optimally controlled fluoridated water. Also, no studies assessing the effect of fluoridated salt or milk were included in this review…*

Even further still, one can also see that the one other primary study cited under the *Neurobehavioral Effects* section of Public Health Ontario's October 2018 Evidence Review is numbered "29" and listed in the References as:

> *29. Broadbent JM, Thomson WM, Ramrakha S, Moffitt TE, Jiaxu Z, Foster Page LA, et al. Community water fluoridation and intelligence: prospective study in New Zealand. Am J Public Health. 2015;105(1):72-6.*

If Dr. Ahmed had been at all familiar with the Bashash et al. studies he would have realized that the quote he read did not apply to them.

And if Dr. Ahmed had read Public Health Ontario's Evidence Review from which he quoted, he would have realized that it had not included any review of the Bashash et al. studies.

Dr. Ahmed could have, but did not, disclose anything about Public Health Ontario's actual review of the 2017 Bashash el al IQ study: Article Review on "Prenatal Fluoride Exposure and Cognitive Outcomes in Children at 4 and 6–12 Years of Age in Mexico" (https://www.publichealthontario.ca/-/media/documents/fluroide-iq-mexico.pdf?la=en).

According to Public Health Ontario's website this article review has been available since November 2017.

This article review does not contain the irrelevant quote read by Dr. Ahmed and it does state that:

- "*The authors used linear regression, adjusting for a number of potential confounders…"*
- *"…a 0.5mg/L increase in maternal urinary fluoride was associated with a decrease in GCI of 3.15 points (95% CI: -5.42,-0.87), and a decrease in IQ of 2.50 points (95%CI: -4.12, -0.59)."*
- *" Previous research in the area of fluoride exposure and neurological outcomes during childhood has often been limited by small sample sizes and/or ecological study designs. The study by Bashash et al. is a considerable improvement over previous research given the large population size and the availability of individual level data to assess both exposure and outcome."*
- "*Another strength of the study design is that exposure was measured during what is perhaps the most vulnerable window of neurological development in children, the prenatal period...."*

Dr. Ahmed misrepresented Bashash et al.'s IQ and ADHD studies and Public Health Ontario's *Evidence Review for Adverse Health Effects of Drinking Optimally Fluoridated Water (2010-2017)* by claiming that the quote he read from the Evidence Review applied to the Bashash et al. studies when it did not.

He also failed to disclose any information regarding Public Health Ontario's actual review of the Bashash et al. IQ study, including the fact that the article review even existed.

2. Misrepresentation of the 2010 EU Scientific Committee on Health and Environmental Risks' Critical review of any new evidence on the hazard profile, health effects, and human exposure to fluoride and the fluoridating agents of drinking water, and two studies by Bashash et al. (2017, 2018).

A 2010 grey literature report from the EU Scientific Committee on Health and Environmental Risks (EUSCHER) is mentioned on page 4 of Public Health Ontario's October 2018 Evidence Review.

The EUSCHER report is again mentioned in the *Neurobehavioral Effects* section of Public Health Ontario's Evidence Review for Adverse Health Effects of Drinking Optimally Fluoridated Water (2010-2017) (page 9), immediately after the irrelevant quote already mentioned above that was given by Dr. Ahmed.

During the Windsor meeting, while still in the middle of the discussion with Councillor **Kusmierczyk about the two Bashash et al. studies**, Dr. Ahmed went on to cite the EUSCHER report.

Dr. Ahmed insisted that the EUSCHER report proved the same thing as the Public Health Ontario Evidence Review (2010 – 2017) and he read segments (shown in bold) from the following sentence in the Public Health Ontario Evidence Review: "*The EUSCHR report concluded that based on available human studies,* ***fluoride in drinking water at levels permitted*** *in the EU* ***does not impair children's neurodevelopment****.*[42]"

He misstated EUSCHER's name as the "European Union for Scientific Community and Health Research" and failed to disclose their study's publication year.

Timestamp 9:53:33:

Dr. Ahmed:

> … *and this is also proven by the European Union for Scientific ah Community and Health ah Research. They also said exactly the same thing, that the* ***fluoride in drinking water at levels permitted does not impair children's neurodevelopment****. So we do have those recommendations right in those documents.*

The EUSCHER report was published in 2010, seven years before the first of the Bashash et al. studies.

Dr. Ahmed gave the very clear but false impression that the Bashash et al. studies had been addressed by the EUSCHER report when in fact they had not.

Another error that Dr. Ahmed made without verifying its accuracy, was the amount of organizations that support artificial water fluoridation.

In Dr. Ahmed's presentation, he says,

> "Community water fluoridation is supported by more than 90 agencies worldwide and the effectiveness, ah, to prevent dental cavities established through, de, decades of research, and as you listen to all the data presented in front of you, please know that our recommendations are for the benefit of the whole community without any personal bias."

Dr. Ahmed's claimed that more than 90 agencies support fluoridation. Dr. Mackee, London's medical officer of health was only able to confirm 57 and the vast majority of these organizations are dental associations who have never conducted primary, peer-reviewed studies on fluoride's toxicity. **Several organizations originally listed like the National Kidney Foundation and Alzheimer's Association have removed their endorsements while others, such as the National Cancer Institute never had a position statement.**

Later in the presentation, Dr. Ahmed stated,

> "When it comes to community water fluoridation support in Windsor and Essex every **four out of five** residents support community water fluoridation and this is based on 2 different study with almost 1400 residents."

Dr. Ahmed then doubles down with his claim that four out of five residents support artificial water fluoridation.

Councillor Francis asks begins his questioning of Dr. Ahmed at 10:18:59.

Timestamp 10:24:00

Dr. Ahmed responds at 10:24:00

> "Our survey shows that **four out of five** residents in Windsor Essex County, they want fluoride back in the water. And that survey was conducted with more than 1,400 respondents and obviously, as you know the surveys have a limit and we cannot poll every individual in the community. 1,400 is a pretty big number compared to any of the survey that you can extrapolate it based on the community, the size of the community that we have it is pretty representative samples and if you look at that sample, **four out of five** residents in Windsor and Essex County support community water fluoridation."

Councillor Francis:

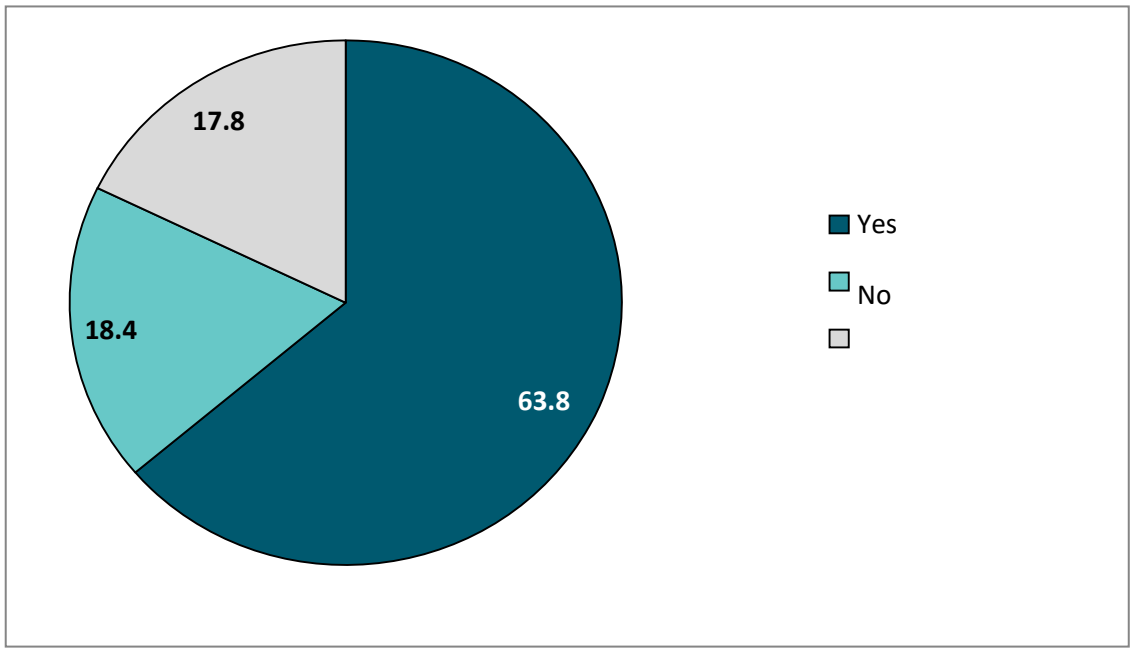
> "…….understanding that there are significant amounts of people that don't want fluoride in the water, but that there are other people that don't have a problem with fluoride in the water. I'm having a hard time reconciling that.

Dr. Ahmed

> "I totally understand it and as a City Councillor, you have a responsibility to all of your constituents. But I am telling you that **four out of five** residents in Windsor and Essex support community water fluoridation. As a politician, you have to take those people who are supporting community water fluoridation as well as those who are not."

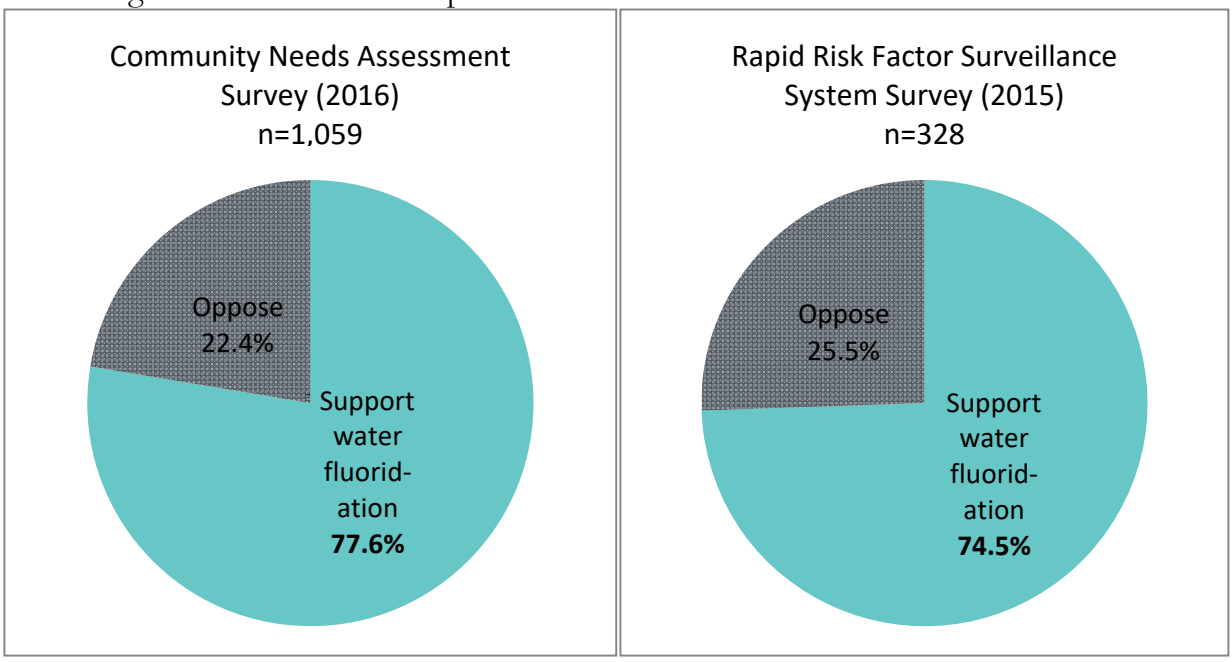
The claim that 4 out of 5 adult residents support AWF is a **not an accurate figure**, but has been **heavily manipulated**. For instance, the data for the actual Community Needs Assessment Survey, which was *not a random survey*, but was highly susceptible to bias given the means of deployment, had the result to their (very leading, unprofessional polling question) as follows: Yes: 63.8%, No: 18.4% and I Don't Know: 17.8%. ***This is NOT 4 out of 5 people supporting AWF***!

This is the chart from the Community Needs Assessment Survey (22):
Figure 36. Support for adding fluoride to public drinking water (*N*=1,289)



When you use add 63.8 and 18.4 and then divide each amount with the total 82.2, then you come up with the WECHU's **incorrect statistics**. ***This is direct manipulation of the statistics in an effort to mislead the reader at large, and public policy makers specifically***.

This is Figure 4 from the 2018 report:



The WECHU withheld from respondents critical information about the serious health risks of fluoride ingestion and the unlawful nature of water fluoridation, and WECHU posed their survey question in a blatantly leading fashion: "*Do you support adding fluoride to public drinking water to help prevent tooth decay?*" A proper poll wouldn't be limited to one leading question, but would ask a variety of qualifying questions in order to properly determine the thinking and opinion of the respondent.

An entire category of response was also removed from the RRFSS survey! You cannot derive your 100% response rate outcome only from the people that made one out of three choices for the purpose of the survey. In theory, for the RRFSS survey it is possible that 75% of the people surveyed said "Don't know/Unsure" and the remaining 25% of people where divided into "Support" and "Oppose". You cannot represent the ratio of just two of the three possible answers as percentages of "support" and "oppose". It is 'statistical malpractice'! Also, at best, the RRFSS survey has a **margin of error of at least 16.5%.** The WECHU has refused to provide the data of the RRFSS survey for the "I don't know" category.

It is extremely disappointing to have the WECHU manipulate the data in order to further its presupposition that AWF should be reintroduced into the local water supply.

References

Below are links to the Bashash et al. studies, the related Till et al. study which underscores the importance of the Bashash et al. studies, related press releases, and the EUSCHER reference.

1. Study: Prenatal Fluoride Exposure and Cognitive Outcomes in Children at 4 and 6–12 Years of Age in Mexico
https://ehp.niehs.nih.gov/doi/10.1289/ehp655

September 19, 2017 Press Release from University of Toronto:

> ***Fluoride exposure in utero linked to lower IQ in kids, study says***

https://media.utoronto.ca/u-of-t-in-the-news/fluoride-exposure-in-utero-linked-to-lower-iq-in-kids-study-says/

2. Study: Prenatal fluoride exposure and attention deficit hyperactivity disorder (ADHD) symptoms in children at 6–12 years of age in Mexico City
https://www.sciencedirect.com/science/article/pii/S0160412018311814

October 10, 2018 Press Release from Dalla Lana School of Public Health, University of Toronto:

> ***Higher levels of urinary fluoride associated with ADHD in children.***
>
> "*Our findings are consistent with a growing body of evidence suggesting that the growing fetal nervous system may be negatively affected by higher levels of* fluoride exposure," said Dr. Morteza Bashash, the study's lead author and researcher at the Dalla Lana School of Public Health…
>
> ***…*** *The research team — including experts from the University of Toronto, York University, the National Institute of Public Health of Mexico, University of Michigan, Indiana University, the University of Washington and Harvard School of Public Health…*
>
> *… This work builds off of previous research the team published on this population demonstrating that higher levels of urine fluoride during pregnancy are associated with lower scores on tests of IQ and cognition in the school-age children***.**'

http://www.dlsph.utoronto.ca/2018/10/higher-levels-of-urinary-fluoride-associated-with-attention-deficit-hyperactivity-disorder-adhd-in-children/

3. Study: Community Water Fluoridation and Urinary Fluoride Concentrations in a National Sample of Pregnant Women in Canada
https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP3546

October 10, 2018 Press Release from York University:

> **Study: Fluoride levels in pregnant women in Canada show drinking water is primary source of exposure to fluoride**
>
> *"The research was conducted as part of a larger study funded by the National Institute of Environmental Health Sciences, part of the National Institutes of Health (NIH) investigating whether early life exposure to fluoride affects the developing brain.*
>
> *"We found that fluoride in drinking water was the major source of exposure for pregnant women living in Canada. Women living in fluoridated communities have two times the amount of fluoride in their urine as women living in non-fluoridated communities," said Christine Till, an associate professor of Psychology in York's Faculty of Health and lead author on the study…*
>
> *… The levels of fluoride among pregnant women living in fluoridated communities in Canada were similar with levels reported in a prior study of pregnant women living in Mexico City where fluoride is added to table salt.*
>
> *"This finding is concerning because prenatal exposure to fluoride in the Mexican sample has been associated with lower IQ in children. New evidence published today in Environment International also reported an association between higher levels of fluoride in pregnancy and inattentive behaviours among children in the same Mexican sample," said Till."*

http://news.yorku.ca/2018/10/10/study-fluoride-levels-in-pregnant-women-in-canada-show-drinking-water-is-primary-source-of-exposure-to-fluoride/

4. Scientific Committee on Health and Environmental Risks. Critical review of any new evidence on the hazard profile, health effects, and human exposure to fluoride and the fluoridating agents of drinking water [Internet]. Brussels: European Commission; 2010 [cited 2017 Jun 5]. Available from:
https://ec.europa.eu/health/scientific_committees/environmental_risks/docs/scher_o_139.pdf