

Admin, LACO

Subject: FW: Transcript corrections and documents related to the hearing
Attachments: impact_of_a_tax_on_sugarsweetened_beverages_according_to_socioeconomic_position_a_systematic_review_of_the_evidence.pdf; Raymond Lovett (2017) Deadly progress changes in Australian Aboriginal and Torres Strait Islander adult daily smoking, 2004-2015.pdf; Dixon_BMC_2015.pdf; Morley_LLToxicFatresults_2016.pdf; Morley_VicSugaryDrinksResults_BMJopen_2018.pdf; CognitiveImpactPerthGlory_2014.pdf; Economic evaluation of a sugary drink public education mass media campai....docx; IMG_20181003_093017.jpg; IMG_20181003_094021.jpg; IMG_20181003_094054.jpg; IMG_20181003_094430.jpg; IMG_20181003_094529.jpg; IMG_20181003_094959.jpg; 20181107 Transcript Maurice Swanson DRAFT.docx; Planning law and obesity journal article.pdf

From: Maurice Swanson [<mailto:mgs swanson@acos h.org>]
Sent: Wednesday, 14 November 2018 10:50 AM
To: Committee, Education & Health Standing <laehsc@parliament.wa.gov.au>
Cc: Committee, Education & Health Standing <laehsc@parliament.wa.gov.au>
Subject: RE: Transcript corrections and documents related to the hearing

Ms J.M. Freeman MLA
Chair
Education and Health Standing Committee
Legislative Assembly
Western Australia

Dear Janine

Thank for the opportunity to address the Education and Health Standing Committee on the prevention of Type 2 Diabetes.

Please see attached and below further information you have requested for the Standing Committee.

I have also attached a slightly amended version of the transcript applying track changes.

If you require additional information or clarification, please do not hesitate to contact me.

- **Evidence that a tax on sugar-sweetened beverages reduces consumption (see page 3 and page 5 of transcript) – please see attachment**
- **Evidence that increasing the price of tobacco has reduced prevalence of smoking in lower income groups as well as in higher income groups (see page 3 and page 5 of transcript) – please see below from tobacco Facts and Issue Australia.**

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13.1 Price elasticity of demand for tobacco products

A fundamental building block of economic theory is the fact that increasing (or decreasing) the price of a commodity reduces (or increases) demand for that commodity. *Price elasticity of demand* refers to the extent to which use of a product falls or rises after increases or decreases in its price. If price elasticity of demand for a product were very low—that is, if it were *inelastic*—then demand would fall or rise only slightly in response to price changes. For instance, if price elasticity for a particular good were about -0.1 , then demand for that good would fall by only 0.1% for every 1% increase in price. Demand would fall by 1% for a 10% increase in price, by 2% for a 20% price increase and so on. Demand for a good with high price elasticity would fall much more sharply in response to price increases. If price elasticity of demand for a good were about -1.0 , then demand for that good would fall by 1% for every 1% increase in price. Demand would fall by 10% for a 10% price increase, 20% for a 20% price increase, 100% for a 100% price increase, and so on.

While demand for tobacco products is not as elastic as demand for many other consumer products¹ research has consistently demonstrated that increases in the price of tobacco products are followed by moderate falls in both the percentage of people smoking and the amount or number of tobacco products that remaining smokers consume.^{2,3} The percentage of people smoking declines because tax increases discourage non-users from starting, encourage current users to quit and, also very important, discourage former smokers from starting again.³ Because increases in tobacco taxes result in higher tobacco prices for everyone, the effect of even small resulting reductions in tobacco use can be very large across the whole population.

13.1.1 Estimates of elasticity

Why people reduce smoking in response to increases in the price of tobacco products has been a matter of some conjecture—see [Section 13.1.6](#). However there is no doubt that they do. The *extent* to which demand for tobacco products responds to changes in price is an empirical question, the answer to which can be ascertained by measuring trends in consumption as prices and other relevant factors change.

Depending on the size of the price increase, reduced consumption of tobacco products following increases in tobacco taxes can be quite substantial. In 1999, a World Bank review concluded that, all else being equal, price rises of about 10% would on average reduce tobacco consumption by about 4% in developed countries and about 8% in developing countries.^{4, 5} In their 2003 meta-analysis reviewing 86 studies published to the year 2001 which examined the price elasticity of demand for tobacco products, Gallet and List⁶ found a mean price elasticity of -0.48 , meaning that, on average, a 10% increase in price will be followed by a decrease in consumption of 4.8%.

The review conducted by the International Agency for Research on Cancer published in 2011 concluded that studies on the impact of price increases on aggregate demand in high income countries on average find price elasticity of about -0.4 , with most estimates from the US and UK falling in a relatively narrow range between -0.2 and -0.6 .⁷

13.1.2 Various methods of measuring elasticity

Price elasticity can be calculated in many different ways, and various methods have different advantages and different problems (see [Section 13.1.7](#)).

Many studies examining the price elasticity of demand have used aggregate data—that is, data at a country or state level on the total amount of tobacco purchased or taxed for the entire population. Some of these studies have analysed changes in taxable or reported sales of all tobacco products, and some have looked at cigarettes alone. Some have measured the weight of product sold, others the number of units. Some studies have compared consumption in the same jurisdiction with different prices over time (time-series analyses). Others have compared consumption in jurisdictions with different prices at the same points in time (cross-sectional studies).

Other studies make use of surveys conducted regularly among school students, adults or households. These might be surveys that ask about smoking habits or they might be surveys about spending on a whole range of household items.ⁱ A small number of studies have looked at consumption as reported by a panel of smokers interviewed (about their consumption and various factors which might affect it) before and after tax increases over time. In recent times, behavioural economists have examined the response of individuals not to real-life price increases, but rather to price increases simulated in behavioural experiments in laboratories.

Researchers have also used a variety of statistical models for specifying demand and for estimating elasticity.

In their comprehensive review, Gallet and List⁶ found that resulting estimates of price elasticity from all these sorts of studies were generally fairly similar and did not differ systematically depending on the design or method of analysis used. Studies that measured responses to price changes in the short term tended to report lower elasticity than studies that reported long-run estimates (–0.40 compared with –0.44). Studies published more recently and in high-quality journals also tend to report slightly lower estimates, reflecting increasing sophistication in modelling and the greater number of factors also affecting consumption being taken into account in more recent research.⁶

13.1.3 Impact of price increases on uptake, continued consumption and quitting

Data from surveys of individuals across a population allow researchers to examine in more detail the impact of price increases on both smoking participation (that is, *whether* people smoke at all) and smoking intensity (that is, *how much* people smoke). Different studies have drawn differing conclusions about the relative contribution of declines in prevalence and declines in smoking intensity.^{8 ii}

Overall, recent research **among adults** indicates that roughly half of the impact of price on tobacco consumption results from reductions in prevalence, and roughly half results from remaining smokers smoking less frequently.⁸ Higher prices increase prevalence by increasing interest in quitting, quit attempts and successful cessation.⁸ Higher prices can reduce consumption among remaining smokers by reducing consumption by daily smokers.⁸ Recent studies also show that prices can reduce consumption by increasing the likelihood that smokers will smoke only on some days.⁸

Unlike for adults where prices affect both participation and intensity, early researchers assumed that most of the effects of price on young people smoking were on participation, mostly by reducing smoking initiation. Studies examining the relative effects of price on participation and smoking intensity among youth have reached varying conclusions,^{9,10} but those that have used the longest panels of data^{11,12} have generally been able to detect some effect on both initiation and quitting.¹³ The review of the literature conducted by the International Agency for Research on Cancer³ concluded the following

- Cigarette prices influence different stages of uptake of cigarette use, with a relatively larger impact at later stages.
 - Most but not all longitudinal studies from high-income countries find that smoking initiation is inversely related to price.
 - As cigarette prices increases, smoking cessation among young people increases.

- Price has a direct effect on young people, and also an indirect effect through both peer and family influence.⁹

13.1.4 Price sensitivity among various population groups

Studies collecting data from individuals also allow researchers to assess how different population groups tend to respond to changes in price.¹⁴

Since young adults more commonly than older adults are occasional rather than regular smokers, it is theoretically possible that they may be *less* influenced by price changes. However, teenage and younger smokers generally earn lower wages and are less dependent on tobacco, both of which would tend to make them *more* price sensitive.¹⁵ Early cigarette demand studies by Lewit and colleagues using individual-level data^{16,17} found a strong inverse relationship between price sensitivity and age, with younger smokers reducing consumption much more than adults in response to the same price increases. This finding was thrown into doubt by an influential Rand study by Wasserman and colleagues in 1991.¹⁸ More recent studies however^{11,12,19,20} supported earlier conclusions of Lewit and colleagues that younger smokers tend to be more price sensitive.

In the US Surgeon General's review of the literature published in 1994,²¹ estimates of elasticity of youth cigarette demand ranged from -0.9 to -1.5 (about three times the level of elasticity of adult cigarette demand). Across all the studies published up until 2001, Gallet and List also found greater responsiveness among younger people, with an average **price elasticity** of -1.43 for teenagers, -0.76 for young adults, and -0.32 for adults.⁶ The most recent review of literature on the effect of prices on youth smoking conducted by the International Agency for Research on Cancer⁹ concluded that price elasticity of demand for teenagers was somewhere between -0.5 and -1.2% .⁹

Studies have differed as to findings about the relative price sensitivity of women compared with that of men. Townsend and colleagues (1994) found that women in the late 1980s and early 1990s in Britain were more sensitive than men to increases in tobacco prices. Chaloupka and Pacula,²² however, found that the prevalence **elasticity**ⁱⁱⁱ for young American men was almost twice as large as that for young women. Across all the studies published until 2001, Gallet and List⁶ found an average price sensitivity of -0.50 for men, and -0.34 for women. More recent studies have generally failed to find gender differences in price sensitivity.^{8 iv}

Studies in high-income countries have also tended to show greater price sensitivity among lower socio-economic groups.²³ Low-income groups were more responsive to increases in cigarette prices in the UK in the 1980s and early 1990s.^{24,25,26} In the US, smoking rates of young black men are significantly more responsive to changes in **price** than are smoking rates among young white men.²⁷

While not every study has reached the same conclusion—different levels of access to cheaper tobacco products over time and in different countries may explain some of the inconsistent findings²⁸—the majority of studies in high-income countries have found greater price sensitivity among those on lower incomes.^{23,28} See [Section 13.11](#) for further details.

Smokers in poorer nations also tend to be more sensitive to price, with estimates of price sensitivity generally around 0.8% , about double that in more affluent countries.²⁹ Blecher and Walbeek conclude, however, that when changes in affordability rather than changes in price are taken into account, the level of sensitivity in developing countries may be similar to that observed in developed countries.³⁰

13.1.5 Price elasticity for tobacco products other than cigarettes

US,³¹ Canadian³² and Finnish³³ research has concluded that an increase in the price of manufactured cigarettes can lead to an increase in sales of hand-rolled cigarettes and other tobacco products. Increases in the price of those products without simultaneous increases in the price of cigarettes are also followed by drops in consumption.³³

In Australia, use of roll-your-own tobacco has increased in recent years following substantial increases in tax levels on all tobacco products (see [Section 2.5](#)). Increases in use of roll-your-own have been even more pronounced in countries where taxes on loose tobacco have not kept pace with taxes on cigarettes.³⁴

13.1.6 Theories of demand

Because many people are highly dependent on tobacco-delivered nicotine and persist in smoking despite recognising that tobacco products are dangerous, many early economists theorised that tobacco use was an irrational behaviour and not suitable for conventional economic analysis.³⁵ Other economists simply ignored the addictive nature of tobacco products. More recent studies explicitly address the addictive nature of cigarette smoking. The economic models of addiction underlying such research can be divided into three groups:¹³ imperfectly rational models of addictive behaviour; models of myopic addictive behaviour; and models of rational addictive behaviour.

Imperfectly rational addiction models assume that the rational, far-sighted part of a person wants good health and a long life but that their efforts to quit are repeatedly undone by the 'wayward' part of their personality that quite simply 'adores' smoking. Proponents of imperfectly rational addiction models hypothesise that consumption will fall sharply in response to price increases, but will then drift back again with time.

The *myopic addiction model* assumes that addicted smokers are short-sighted. Myopic addiction theorists predict that factors such as price and income will affect uptake of smoking but that once addicted patterns of consumption are well established, individuals tend to ignore or discount future costs (both monetary and health related). They hypothesise that, while decreases in price will increase consumption and increases in price will reduce consumption, the effect of price increases will be much smaller than the effect of any price decreases.

The *rational addiction model* by contrast rejects the proposition that smokers behave myopically. It asserts that even addicted individuals *do* take into account future costs. The model assumes that addicted smokers make a rational choice, weighing up the pleasure of current smoking and the unpleasantness of withdrawal that comes with quitting on the one hand and the cost of current and continued smoking and the long-term health effects on the other. Different people will make different decisions depending on how much they value good health, how unpleasant they believe it will be to quit, and how much financial pressure they are under. Individuals also differ in the extent to which they prefer short-term over long-term benefits. Nevertheless, the choice an individual makes will take all relevant factors into account and be a rational one. Proponents of the rational addiction model such as Becker and Murphy³⁶ have demonstrated that current consumption of an addictive good tends to be inversely related not only to the current price of the good but also to the past and predicted future prices.^{37, 38} The model also suggests that more-educated and older people will be responsive to both new information and to price increases, and that less-educated and younger people will be much less responsive to information about long-term effects and relatively more responsive to immediate changes in price.

The *rational addiction model* was popular among many theorists and researchers over the late 1980s and the 1990s, but recently has been criticised on several grounds. First, it implies that individuals have good foresight: a very accurate picture of what the future is going to be like. In reality however, it is evident that some people give little thought to the future. While

they may be able to recite some of the diseases caused by smoking, they do not fully appreciate the nature and extent of health risks and may not be able to accurately envisage what their life would be like if they became very ill or disabled due to smoking. Second, the model would predict that individuals rarely regret past decisions about consumption, a theory not borne out in interviews with current smokers, almost all of whom regret ever having started smoking.³⁹ Third, critics argue that it might be that smokers do not actually *choose* future consumption. Rather, by continuing to smoke they are choosing only current consumption: future consumption *happens to* them rather than being *chosen by* them.

13.1.7 Limitations of studies assessing price sensitivity

There is no doubt that smokers are responsive to changes in the price of tobacco products. However there is no one definitive way of quantifying price sensitivity. Studies that use individual-level data and those that use aggregate data are both subject to various limitations.

The reliability of individual-level data is very much dependent on adequate sampling and recall and honesty by respondents about factors such as purchase of illicit tobacco products. Under-reporting of numbers of cigarettes (or amount of other tobacco products) smoked is also a significant problem.⁴⁰ Using aggregate data on taxable product sales avoids these problems and ensures that researchers are looking at the impact of price changes on the entire market; however, studies that use such data are subject to a number of different limitations.

First, without asking a representative sample of consumers about the prices of the products they are able to buy over time, it is sometimes difficult to determine exactly what the average or typical price increase is (see [Section 13.3.2](#)). Manufacturers use a variety of methods of cushioning consumers from the effect of the increases in taxes. It is by no means straightforward to assess the extent of price increases across a market where retailers engage in various degrees of discounting, 'specialling' and bulk-selling and where tax-free and illicit tobacco products are available.

Specifying changing quantities of tobacco products is similarly not straightforward. Studies that measure the weight of product may not sufficiently account for tobacco companies gradually reducing the taxable weight of cigarettes (without corresponding decreases in delivery of toxins).⁴¹ Studies that analyse changes in the number of products generally do not take into account any consumer shift to possibly more toxic tobacco products.⁴²

Finally, studies often do not adequately take into account all the less-easily-measured factors that affect tobacco consumption, such as negative (unpaid) publicity about tobacco in the media and anti-smoking sentiment in the community. Often changes in such factors coincide with or precede tax increases, and the effects of such factors may multiply rather than simply add to the effect of price increases.^v

Concluding note

Despite debates on the finer points of theory and despite all these methodological limitations, there is no doubt that price exerts a profound impact on tobacco consumption.³ Falls in consumption following large price increases are consistently much more rapid and more significant than falls following implementation of most other tobacco-control policies, and the World Bank has stated that increasing tobacco taxes is the single most effective measure that governments can take to reduce health burdens.² Increasing taxes on tobacco is a key plank in every major international tobacco-control strategy.^{2,43–49}

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i An example in Australia would be the Household Expenditure Survey, conducted every three to five years by the Australian Bureau of Statistics, which randomly selects a large number of households to complete questionnaires about all their purchases and amounts spent.

ii See Figure 5.1 in Chapter 5 of the IARC review, p176.

iii The ratio by which prevalence (the proportion of people who smoke at all) rather than consumption (the average amount which people smoke) reduces in response to an increase in price.

iv See IARC Chapter 5, Figure 5.2 page 176

v For a fuller discussion of the methodological difficulties see Chaloupka and Warner 2000 ⁴

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- **Data related to the prevalence of smoking in Aboriginal communities (see page 4 of transcript) – please see attachment**

- **Papers showing the success of the LiveLighter campaign – please see attached papers - please note one paper is in press showing likely amendments and is in press.**

- **The nature of amendments to the WA planning system to make community health and wellbeing an enforceable requirement (see pages 17-18 of transcript) – Please see below including recently published paper on planning law and obesity attached.**

1. Make community health and wellbeing an enforceable and explicit requirement within the planning system.

The planning system must enable and prioritise the development of an urban environment that supports and encourages healthy lifestyles.

The planning system currently does not allow for sufficient consideration of health and wellbeing in contrast with the new *Public Health Act 2016* (WA). The disconnect between health as a priority function of the planning system and the *Public Health Act 2016* (WA) is particularly evident in the development approval processes for fast food outlets. Local governments are not able to take into consideration their residents health and well-being to control the density or placement of fast food outlets.

Recommended Policy Actions

<p>State Government</p>
<p>Amend Planning and Development Act 2005 (WA) to include health and wellbeing as a ‘purpose’ under section 3(1).</p>
<p>Amend clause 67 of the <i>Planning and Development Regulations 2015</i> (WA) to include health and wellbeing as a relevant consideration.</p>
<p><i>In relation to Fast Food Outlets:</i> In the absence of health and wellbeing as a relevant consideration in the development approval processes for fast food outlets, introduce specific state planning policy that addresses their development location and density.</p>

Refer to Healthy Active by Design urban planning guidelines and design features to inform state planning policies and procedures for the development of Western Australian environments that support health and wellbeing.

Local Governments

Investigate amendments to Local Government Town Planning Schemes so that all zones across a Local Government are classified as not permitted, discretionary or advertising approval required for fast food outlets.

Please see Rockingham

http://rockingham.wa.gov.au/getmedia/eac7adf0-6966-411a-8f3a-32bfcc0cbfde/PD_Planning-Policy-3-3-

Reference and refer to Healthy Active by Design urban planning guidelines and design features in Local Government planning policies and procedures.

Kind regards

Maurice

Maurice G Swanson BSc MPH

Nigel Gray Career Achievement Award in Tobacco Control 2015

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