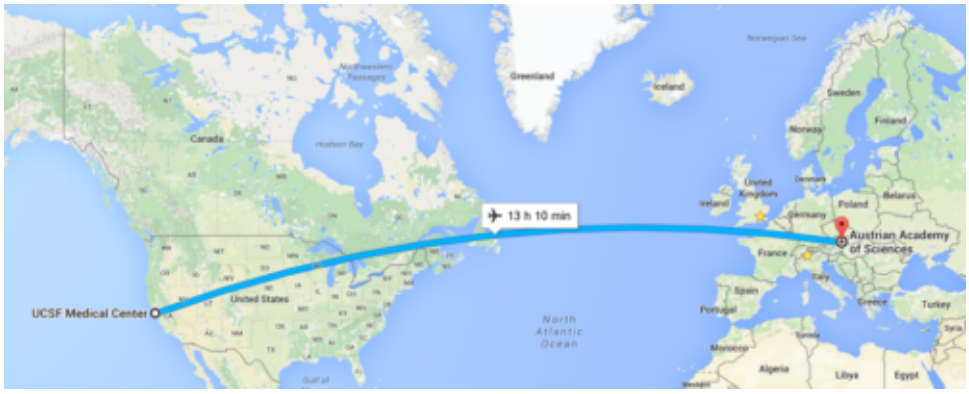
Professor Glantz brings his anti-vaping crusade to Europe – I review his presentation

written by Clive Bates | 9 May 2016



Willkommen, Bienvenue, Welcome… Professor Glantz visits Europe

Regrettably, the influence of Professor Stanton Glantz of the University of California at San Fransisco is not confined to California or to the United States. Last month he made a visit to Europe – to Austria in fact. As good Europeans, we always take our American visitors seriously and listen to what they have to say. So I have done a review of the presentation he gave at the Austrian Acadamy of Sciences in Vienna.

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There is much to say, so here is the outline….

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The event

Professor Glantz gave a presentation on 5th April at the Austrian Academy of Sciences *Tobacco Control: Big Fast Benefits* (PDF of presentation). See page 37-51 for his messages on e-cigarettes. Professor Glantz's introduction for the event makes some bold and unequivocal claims, which I will analyse in this post and have highlighted below in red:

> ***Tobacco Control: Big Fast Benefits***
> *Stanton A. Glantz, PhD Professor of Medicine*
> *Truth Initiative Distinguished Professor in Tobacco Control*
> *Director, Center for Tobacco Control Research and Education University of California, San Francisco*
>
> *There is a widespread assumption that the benefits of tobacco control policies take many years to develop, which makes it difficult for policymakers to prioritize tobacco control efforts over perceived short-term benefits in terms of tax revenues and business opportunities for the tobacco companies. This presentation presents evidence that [etc etc]. E-cigarettes, which are often presented as harm reduction alternatives to conventional cigarettes are reducing quitting, expanding the youth nicotine market, and likely prolonging the tobacco epidemic. The bottom line: It is possible to get large rapid drops in smoking, together with immediate and substantial health and economic benefits if policymakers are willing to stand up to the tobacco industry.*
> *(emphasis added)*

Tobacco policy and standing up to the tobacco industry

Professor Glantz makes a number of heroic claims for 'fast and big' tobacco control interventions. I'm not going to go into his views on tobacco policy, the evidence that supports the efficacy of these ideas or the economics of the tobacco industry. Let's just say this, I think he is over-claiming the benefits and ignoring the costs of his preferred policies.

However, if this is an exemplary tobacco control model, we could briefly digress and check on the terrible toll this policy must be taking on the value of the most important US cigarette company. That would be Altria, which is mainly Philip Morris USA. The chart shows growth in its share price from 1 Jan 2009 until 8 May 2016 (blue). It compares that to the Dow Jones Industrial Average (red). Altria operates primarily in the United States and this covers the period over which FDA has regulated cigarettes under the 2009 US Family Smoking Prevention and Tobacco Control Act (bluffer's guide).



Altria stock price trend from 1 Jan 2009 to 8 May 2016 – relative to Dow Jones (red)

So if "*standing up to the tobacco industry*" is the answer, how come Altria's stock has quadrupled in value since 2009 (from $15 to $63) to be worth ~$125bn and outpaced the growth of the Dow Jones by more than three times? If that's success, what would failure look like?

Professor Glantz's views on e-cigarettes

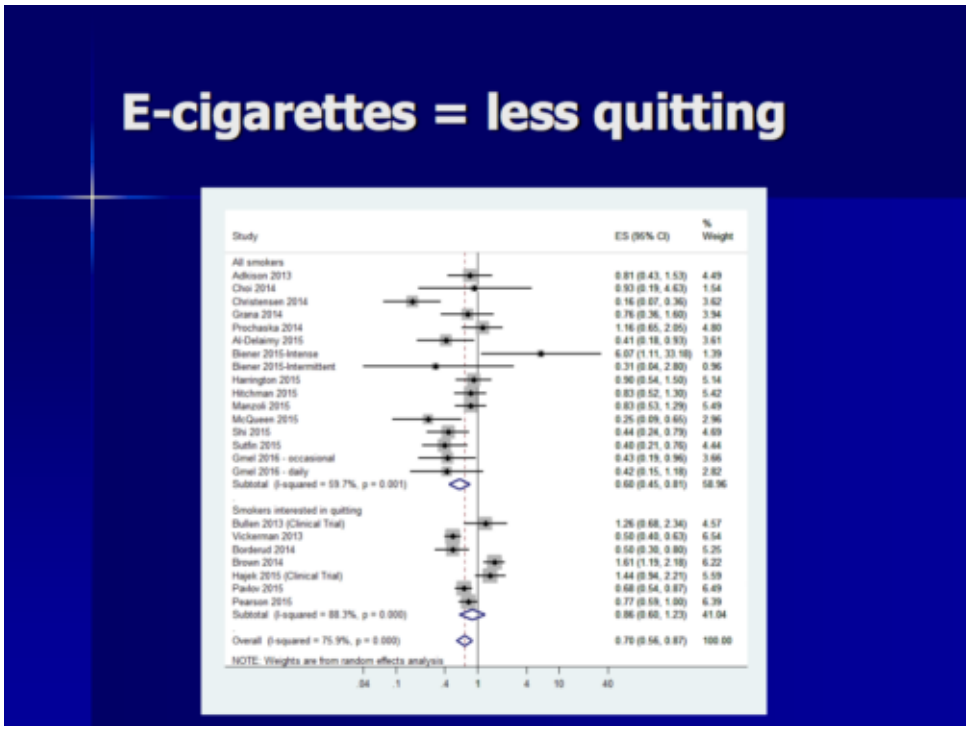
However, I am much more concerned about Professor Glantz statements on e-cigarettes. Let's take the three main claims about e-cigarettes, shown in red in the intro above. According to Professor Glantz, e-cigarettes are:

1. Reducing quitting

2. Expanding the youth nicotine market
3. Prolonging the tobacco epidemic

1. "Reducing quitting"

Professor Glantz displays his meta-analysis to make this claim… here it is… Elsewhere, he claims that this shows: "Vapers" Are 28 Percent Less Likely to Stop Smoking



Looks scientifically impressive!

I guess it looks sort of scientific and formal. But it is, in fact, nothing we should call science. In their response to this just this published in *The Lancet Respiratory Medicine*, Peter Hajek, Hayden McRobbie and Chris Bullen patiently explain the error of lumping together studies with completely different designs, outcomes, exposures and populations and conclude:

> *There are other problems—such as the selective inclusion of studies, and selective reporting of data from studies that were included—and limitations the authors acknowledge in the text but ignore in their conclusions. Detailed criticism of the methods is, however, not needed, because lumping incongruous studies together—which were mostly not designed to evaluate the efficacy of e-cigarettes, and contain no useful information on this topic unless misinterpreted—makes no scientific sense in the first place.*

But they weren't the only ones to find this study wholly unscientific. Back home in the United States, experts at the Truth Initiative (formerly Legacy) severely criticised the pre-publication version of this meta-analysis in their evidence to the U.S. Food and Drug Administration. In its submission to FDA, the examination of the methodological issues begins on page 8 and the following comment appears on page 12, referring to this meta-analysis that was subsequently published in *The Lancet Respiratory Medicine*.

> *While the majority of the studies we reviewed are marred by poor measurement of exposures and unmeasured confounders, many of them have been included in a meta-analysis that claims to show that smokers who use e-cigarettes are less likely to quit smoking compared to those who do not. [73]* ***This meta-analysis simply lumps together the errors of inference from these correlations****. As described in detail above, quantitatively systhesizing heterogeneous studies is scientifically inappropriate and the findings of such meta-analyses are therefore invalid." (emphasis added)*

Professor Glantz was billed in Austria as the "*Truth Initiative Distinguished Professor in Tobacco Control*". That's the same Truth Initiative, presumably in pursuit of 'the truth', that wrote the statement above. A further elaboration of its argument against misinterpreting observational studies can be found in its factsheet *The Truth About Electronic Nicotine Delivery Systems*, which describes some of the underlying issues on page 8.

> *Several observational studies measuring the effect of ENDS use on smoking cessation reported negative correlations between those who tried ENDS and smoking cessation. Due to (a) serious limitations of study design, measurement and methodology, including inadequate measures of exposure (e.g., ever use in one's lifetime) to be a fair test for a cessation indication, (b) selection bias and (c) confounders (e.g., smokers who have repeatedly failed to quit are more likely to try ENDS), we consider the conclusions invalid. This is not without precedent, as some observational studies of NRT and smoking cessation showed similar negative correlations, while more than 80 randomized control trials of NRT show strong positive cessation effects. (for references please see the original)*

Multiple studies suffering these failings were aggregated in Professor Glantz's

meta-analysis, hence drawing the withering criticism of Hajek et al. This work should never have been dignified by publication a journal… as Professor Robert West, Professor of Health Psychology at University College London said at the time of publication:

> *Publication of this study represents a major failure of the peer review system in this journal.*

My own critique is here: Who will be duped by error-strewn 'meta-analysis' of e-cigarette studies? and Carl V. Phillips gave it his customary unforgiving evisceration here: What is "meta-analysis"? (and why was Glantz's inherently junk?).

The Cochrane Review is usually regarded as a benchmark of evidence assessment. The review for e-cigarettes notes that there are few studies but on the basis of what has been done, the conclusions are tentatively positive. However, clinical trials are probably a poor way of assessing behaviour change in a rapidly evolving consumer market – a longer discussion that I shall return to.

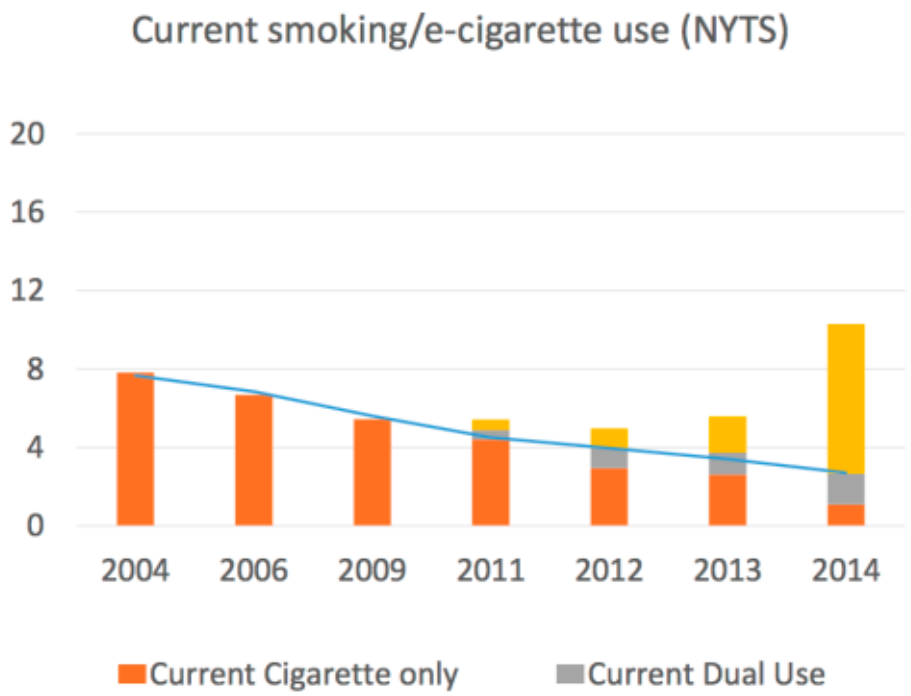
2. "Expanding the youth nicotine market"

We will need four subsections to address this claim. In summary:

- The prominent spike shown in Professor Glantz's main chart is an illusion – it is likely that adolescent e-cig use is dragging smoking down to record low levels
- Most of the teens counted as e-cig users are very light users or experimenters – a much higher proportion of smokers are daily users
- The vast majority of teen users report they are not using nicotine in e-cigarettes and are therefore not part of the 'youth nicotine market'
- The fact that vapers are more likely to be smokers is likely to be a good thing, not a sign of a gateway effect

2.1 The apparent 2014 surge in nicotine use is an illusion

Let's start with chart 48 in his presentation, which I guess is how he makes this case e-cigarettes are 'expanding the youth nicotine market'.

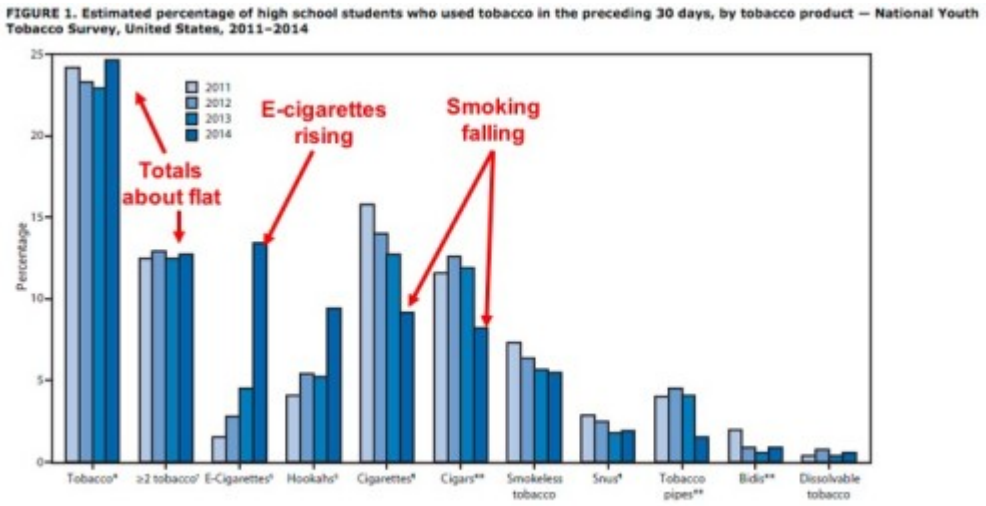


From Professor Glantz's presentation – slide 48

Obviously, the visual point made by this chart is the big spike in 2014 – and, if you buy this as a true and fair representation of the data, it looks like his point is well made. But is it true and fair?

Some care is needed in looking at Professor Glantz's chart: note the yellow bar is not labelled with a legend and the age range is not given, though NYTS data covers middle and high school. *I simply cannot recreate this chart from the NYTS data*. Note also that what appears to be trend line (blue) is not a trend line because the x-scale is non-linear – it would be a shame for the eye to be deceived by that.

So if Professor Glantz's presentation is perplexing, perhaps we should turn to CDC, the main government public health agency, the owner of the data and hardly a pro-vaping interest group, for *its* interpretation. This is how CDC displays the data for high school kids for the later part of the period, with my annotations in **red**.

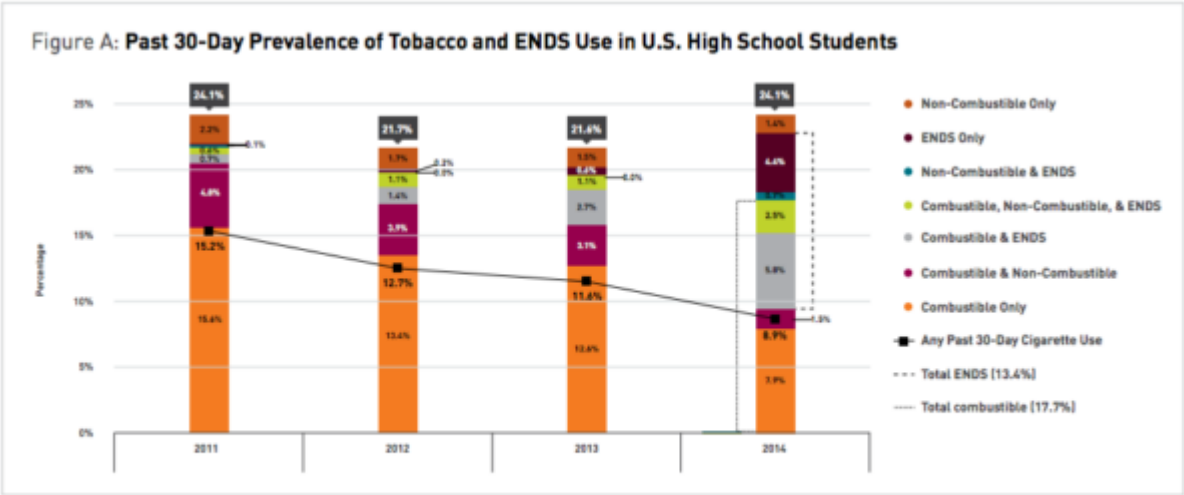


And this is how [CDC actually describes](#) this data:

> ***Discussion***
> *From 2011 to 2014, substantial increases were observed in current e-cigarette and hookah use among middle and high school students, resulting in an overall estimated total of 2.4 million e-cigarette youth users and an estimated 1.6 million hookah youth users in 2014. Statistically significant decreases occurred in the use of cigarettes, cigars, tobacco pipes, bidis, and snus. The increases in current use of e-cigarettes and hookahs offset the decreases in current use of other tobacco products, resulting in no change in overall current tobacco use among middle and high school students. (emphasis added)*

Where is anything in that statement suggesting the youth nicotine market is expanding? The weird bureaucratic language of CDC, FDA etc counts e-cigarettes as tobacco products. But outside that strange world, it is common sense that vapour products containing pure pharma-grade nicotine are not tobacco products. So maybe that should be rephrased in a way that is not deliberately confusing. Here is what I would say: "*within the range of products that (may) contain nicotine, there was a shift from tobacco to non-tobacco product use and from combustible to non-combustible product use. This will be beneficial for health.*"

Or we could draw on a Truth Initiative graphic which gives a similar picture to CDC from the same NYTS data – but completely different to that conveyed by Professor Glantz's chart:



NOTE: Includes published and unpublished NYTS data; all data are publicly available at http://www.cdc.gov/tobacco/data_statistics/surveys/nyts/. The survey question on ENDS changed in 2014 and thus prevalence is not directly equivalent to 2011-2013.

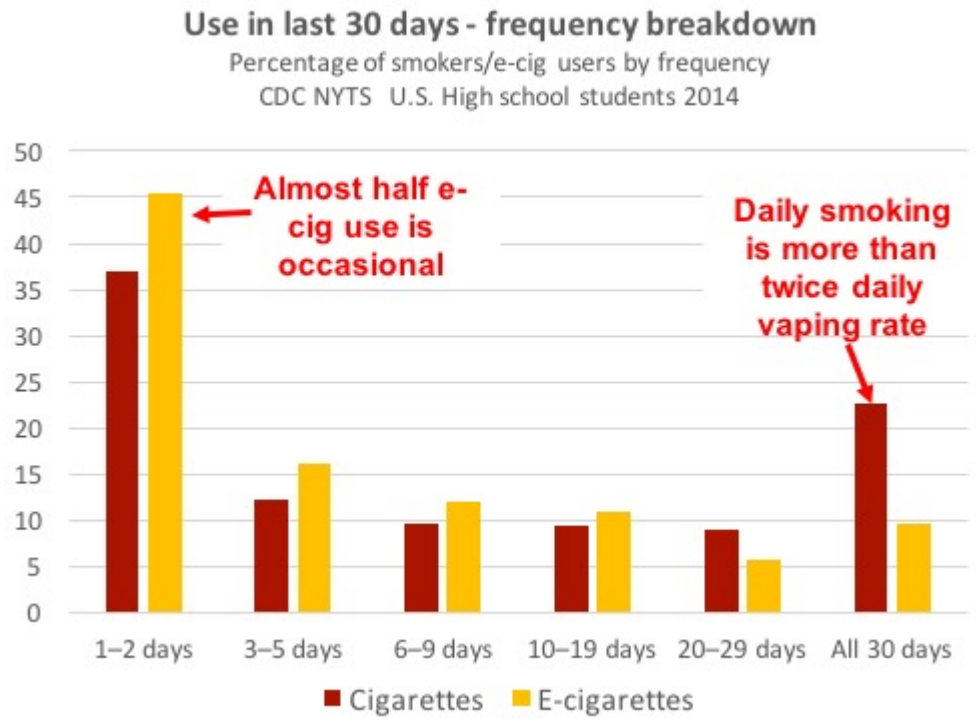
The actual data tell a different story to the spike shown in 2014 in Professor Glantz's chart – the basis for which is at best 'unclear'. The actual picture suggests that e-cigarettes are being used *instead* of cigarettes – and smoking is falling rapidly as e-cigarettes rise. If they were a 'gateway', then where are the extra smokers? The most compelling explanation of this data is that relatively low-risk e-cigarettes are displacing high-risk smoking in youth who are inclined to experiment with smoking or other risky behaviours.

2.2 Most of the teens using e-cigarettes are doing it occasionally or experimenting

The columns in the CDC and Truth graphics above are reasonable representations of nicotine use on a particular measure, but it turns out they are aggregating very different behaviours.

The National Youth Tobacco Survey (and I guess Professor Glantz's chart) uses the 30-day prevalence measure favoured by CDC – i.e. if a person has used a tobacco or nicotine at least once in the last 30 days. But this measure of prevalence has been widely criticised as too broad, containing both daily use and occasional or experimental use, which are completely different behaviours (e.g. this recent critique)

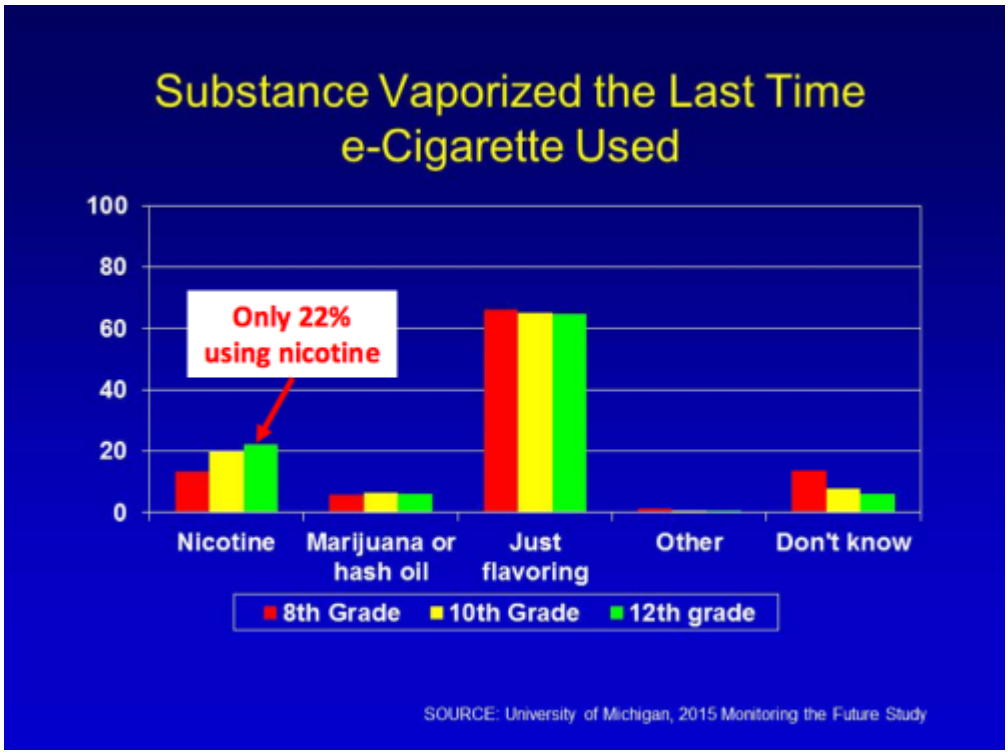
To its credit, CDC itself published an analysis of the frequency of use in the NYTS *within* the 30-day prevalence figure. Sadly, the chart produced by CDC obscured the most interesting data, which I have presented in the chart drawn by me below.



Fewer than 1 in 6 teen e-cigarette users count as what one might call regular users (used on more than 20 days in a month), and more than half are using e-cigs less than once a week. The proportion of daily or regular users is more than twice as high for smokers compared to vapers. So if you use a 30-day prevalence figure you capture very different behaviours. The most concerning users are those for whom a consolidated smoking habit is emerging (i.e. the ones who may find it harder to quit later).

2.3 Most adolescent e-cigarette users are not using nicotine at all

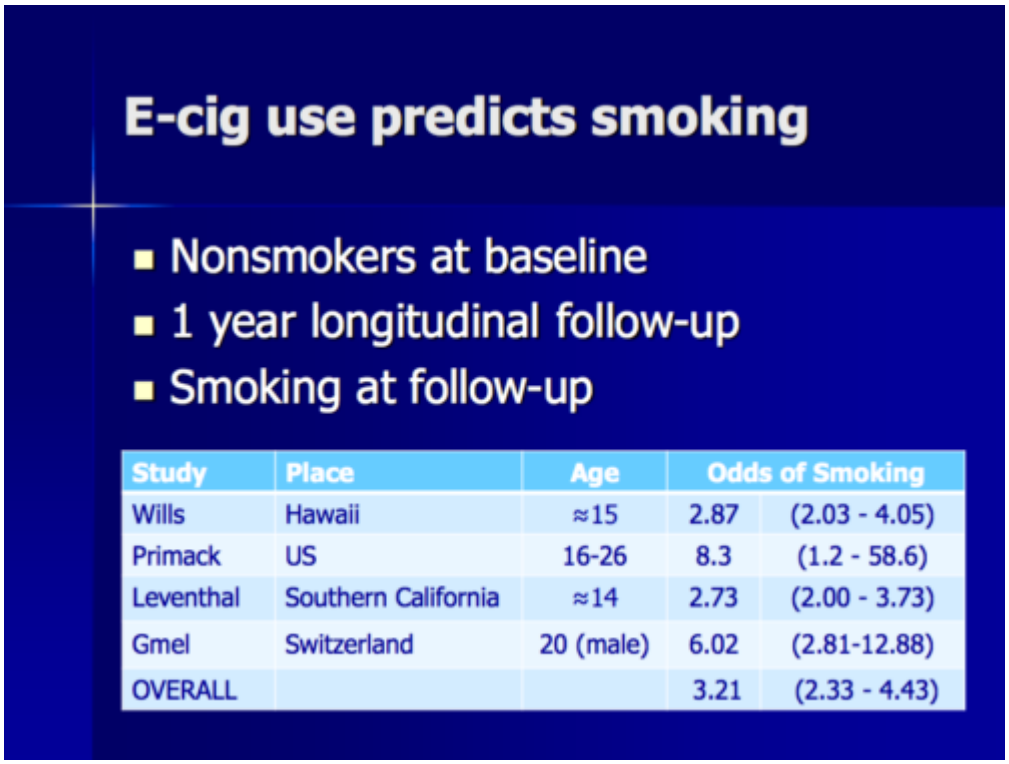
The claim about "expanding the youth nicotine market" relies on counting large numbers of adolescents *who are not actually using nicotine*. The U.S. University of Michigan Monitoring the Future survey suggests as few as 22% may be using nicotine, See this graphic from Monitoring the Future with my annotation in **red**:



Professor Glantz simply cannot make claims about “expanding the youth nicotine market” if most of the youth he is counting are not using nicotine.

2.4 E-cigarette use predicts smoking – implying a gateway effect?

Sadly, I wasn’t there to see what lesson Professor Glantz drew from this chart (49), but in case it was something like “e-cigarettes seem to cause teenagers to smoke” (why would it be included otherwise?), I thought it worth a pre-emptive clarification of what the data really means.



Let me explain how to read this chart honestly. Imagine you observe a pronounced association between two behaviours, A (e.g. vaping) and B (e.g. smoking), as shown in this chart. Three mechanisms are possible to explain what's happening:

1. A causes B: you've found a 'gateway effect'.
2. B causes A: this is what you would see if young smokers were keen to try vaping to quit or reduce their dependence on smoking. The e-cigarette use only happens because they were smoking. – this is known as 'reverse causation'.
3. C (a third factor or set of factors) causes *both* A and B: maybe the same things that incline adolescents to smoke also incline them to vape (e.g. parental smoking, rebellious nature), what is sometimes called 'shared liability'. More generally, this effect is known as 'confounding'.

Before anyone can claim that A causes B (a gateway effect) they would need to consider *what would happen in the absence of e-cigarettes* – in the case of explanations 2 and 3, the kids would just smoke: the emergence of e-cigarettes is a diversion from smoking and positive for health. This is discussed is my posting: *We need to talk about the children – the gateway effect examined* in which I show that the most likely pathways that young people will take improve with the addition of e-cigarettes as alternatives to smoking. In an excellent recent

paper, *Levy et al* explore similar themes.

The studies presented here allow *nothing interesting* to be said about which of these three possible causal relationships explains the observed associations – so what point was "E-cig use predicts smoking" supposed to be making in this presentation?

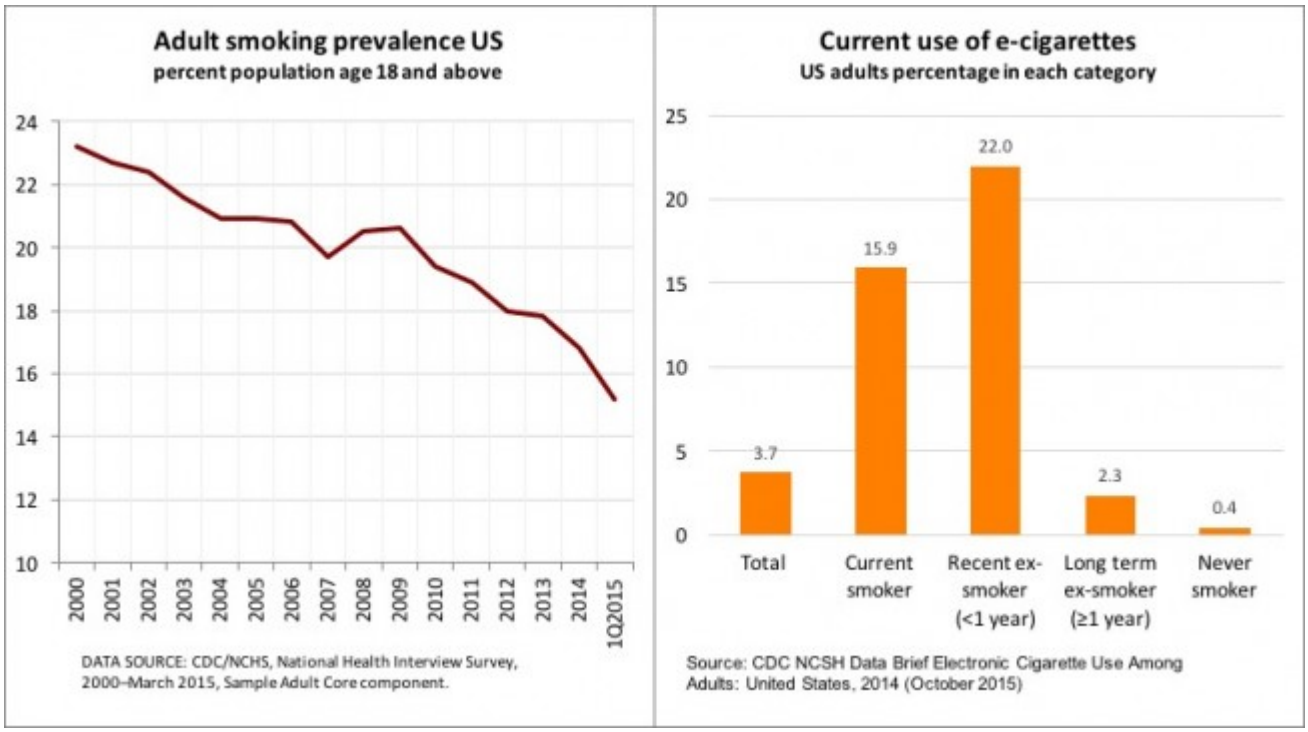
Summarising…

The presentation of arguments showing that e-cigarettes are "expanding the youth nicotine market" contains at least four failures of reasoning, rendering it completely misleading:

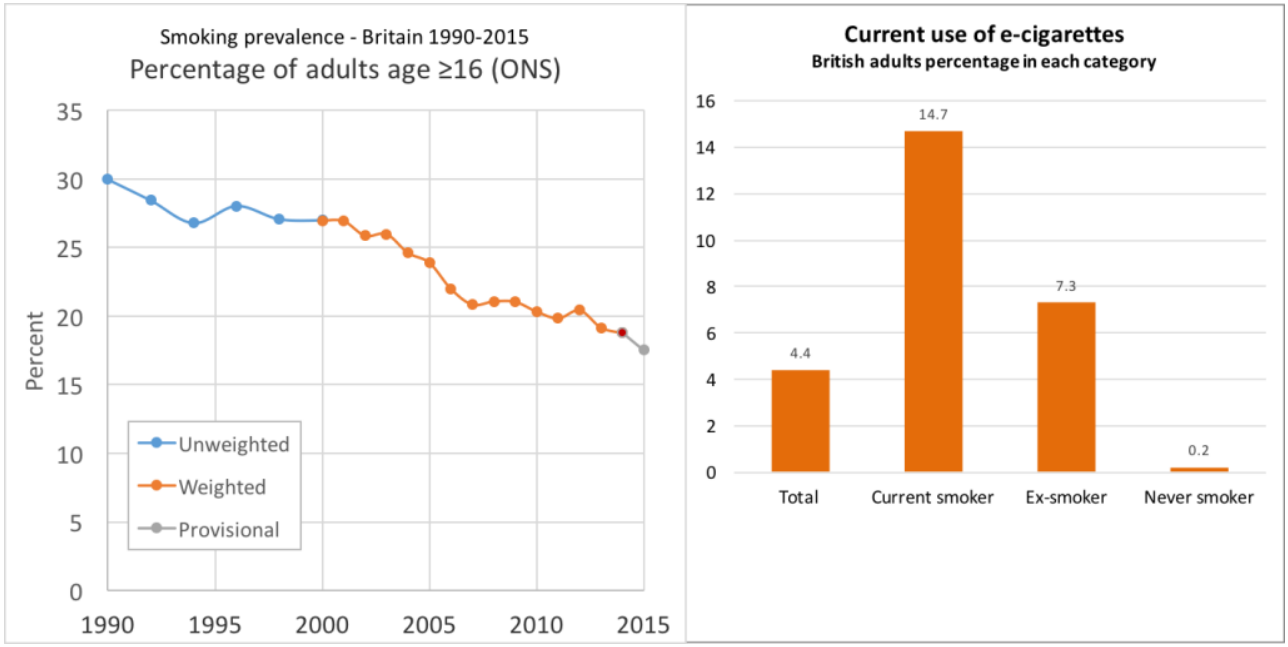
- It introduced an inexplicable spike in his graph that bears no relation to the actual picture, even as presented by CDC – and failed to draw the obvious and positive conclusion that smoking is declining faster than ever while e-cigarettes are rising, and that these observations *might be* causally related.
- It failed to differentiate between occasional use and regular use and to recognise the difference in intensity of use between smoking and e-cigarettes use.
- It counted people who are not using nicotine as nicotine users and so vastly inflated the account of the expanding youth nicotine markets
- It probably implied that studies showing an association between vaping and smoking indicate that vaping causes smoking.

3. Prolonging the tobacco epidemic?

I think this claim is just entirely made up – I simply don't know where this comes from. Adult smoking prevalence in the US (and the UK) has fallen as e-cigarette use has risen – and e-cigarette use is concentrated among adult smokers. It doesn't seem to be prolonging any tobacco epidemic as far as I can see. It looks more like the decline in smoking has accelerated during the rise of vaping, having stalled in the mid-late 2000s.



A very similar picture emerges from Britain (sources)... e-cigarette use is concentrated in smokers and smoking falling. Again, after stalling the decline in smoking has picked up again as vaping has risen.



So where is all this stuff about 'prolonging the tobacco epidemic' coming from?

As I have explained in my critique of the prohibitionist tobacco control ideas in the "tobacco endgame" vapour or other low-risk nicotine technologies will reduce the burden of smoking related deaths and disease. This is because they allow those most at risk to radically reduce their health risk without having to take the

harder step and unnecessary step of quitting nicotine use and by engaging in what many find to be a pleasurable consumer behaviour (see Sarah Jakes: the pleasure principle).

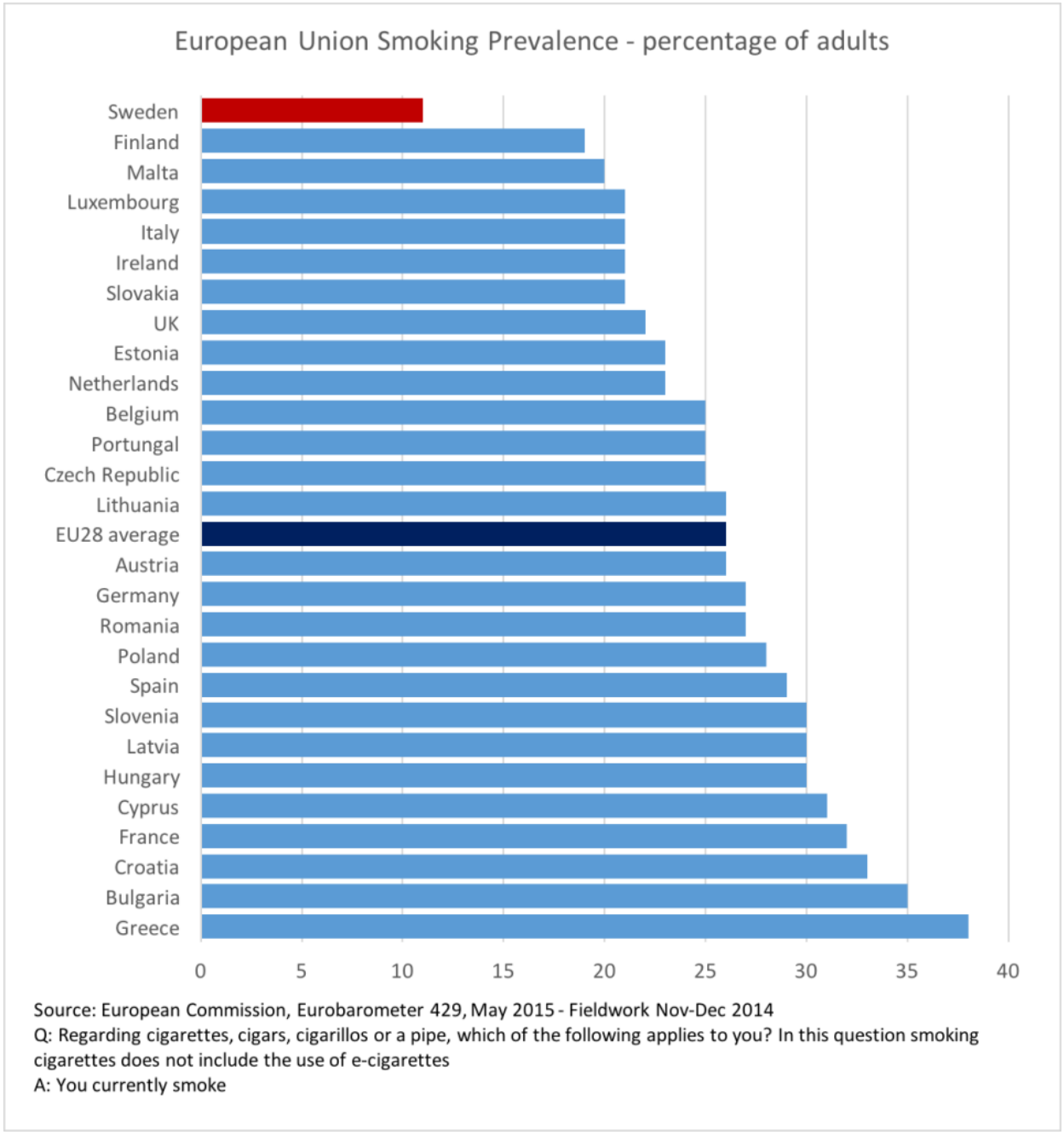
Underpinning this deeply misleading presentation is a deeply flawed framing of the issue: *nicotine use isn't the real problem* The real public health problem is the death and disease caused by smoking – and we should stick to doing what is right and proportionate about that.

This is why I always press tobacco controllers to state their objectives. Is it about reducing disease, reducing smoking, reducing tobacco use, reducing nicotine use, reducing bystander risk or reducing adolescent uptake? Or is it about destroying the tobacco industry? It matters because, in the complicated real world, several of these objectives are in tension. For example, you can reduce smoking and disease faster if you don't try to force nicotine abstinence on people.

A gift from Europe – the Swedish snus experience

If there is one thing I'd like an American tobacco control professor to take home from Europe to the United States it is this… Adult smoking prevalence in Sweden in 2015 reached 10% and the reason for that exceedingly low level is snus, a tobacco product made by a tobacco company. This experience provides an important proof-of-concept for tobacco harm reduction, which Professor Glantz would do well to learn from.

Here are the official pan-European comparative data – in 2014 Sweden = 11% and EU average = 26% – all from a single large survey with the same questions done at the same time. The chart is mine with Sweden emphasised and EU average marked.



European Union smoking prevalence – late 2014 – Eurobarometer survey. All but one of these countries has a ban on snus.

It's also compelling evidence of the sheer irresponsibility of many of his fellow travellers in tobacco control for insisting this product should be banned everywhere else in the EU other than Sweden. It also shows that 'population effect' pseudo-arguments really are tactical – for use in arguing for prohibition and little else. They have nothing to do with health as they persist well after the data unambiguously shows population health benefits – as in Sweden. As recently as late last month, prominent figures from the public health establishment were sinking to the same level as the tobacco industry of 40 years ago in their denial that snus has had a significant public health benefit in Sweden: see *Anti-vaping*

zealots in flat-earth letter to The Times.

Spare a thought for Austria

I hope no lasting damage has been done arising from the extensive misinformation is this presentation – unfortunately, I hear that may not be the case. I hope members of the Academy of Sciences and Austrian officials and ministers will read this critique and ask Professor Glantz to address the criticisms and explain himself. Gerry Stimson and I wrote to the Austrian government with some evidence-based advice here: TPD implementation – maximising harm by going beyond the minimum – I hope they pay attention to that.

Drop in on Britain next time!

Next time he's over in Europe, I would like to invite Professor Glantz to come to London. Here's a possible itinerary:

- A trip to the delightful Royal College of Physicians near Regent's Park to hear more about the College's new report, *Nicotine without smoke*, on tobacco harm reduction. Meet respiratory physicians who actually see patients who can barely breathe *and* take the trouble to find out what the science is telling them to do about it.
- Over to the government quarter for insights into the excellent work of Public Health England. Professor Glantz could then try to work out why FDA, CDC and its Californian equivalent are so intent on putting the lives at risk of the remaining Americans who still trust them by misleading them about the relative risks of different tobacco and nicotine products.
- How about rediscovering those old-fashioned virtues about empathy in public health and treating the public with respect? Look no further than the UK National Centre for Smoking Cessation and Training and a couple of hours discovering the innovative NCSCT approach to e-cigarettes.
- Maybe pop in on England's Smoking Toolkit headquarters and find out why we have better more frequent data on what's happening in smoking and vaping – and talk to the people who's work is to analyse it dispassionately rather than turn it into propaganda.
- I would suggest a meeting with Louise Ross, our top e-cig friendly smoking cessation practitioner so he could benefit from her insights

> drawn from front line experience, but I think that may put him in too much danger, given what tobacco control propaganda has done the perceptions of her clientele.

Finally, I'd like to pass a couple of hours with Professor Glantz myself. Over lunch, I'd like to explain why his presentation is so harmfully misleading, why his approach is so unethical, how he has become a global health liability prolonging and aggravating the smoking epidemic, and why everything he's doing on e-cigarettes and tobacco harm reduction will protect the cigarette trade and shape the nicotine market for the benefit of the tobacco industry.

I'm open-minded, of course. Maybe he would persuade me I'm wrong. But he'll have to do a lot better than this presentation.

Comments: please avoid abuse or unfounded allegations.