Electronic Cigarettes
Abstract
This report summarises the presentations and discussions at the Workshop on electronic cigarettes, held on 7 May 2013 at the European Parliament. The aims of the workshop were to exchange information on how different jurisdictions deal with the regulation of the electronic cigarette and to be informed on the status of the scientific evidence concerning long-term health effects. The workshop was hosted by MEP Linda McAvan (S&D, UK), ENVI Committee, Rapporteur on Tobacco Products Directive.
This document was requested by the European Parliament’s Committee on Environment, Public Health and Food Safety.

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LIST OF ABBREVIATIONS

**BfArM**  Federal Institute for Drugs and Medical Devices

**DG**  Directorate General

**EC**  European Commission

**E-cigarette(s)**  Electronic cigarette(s)

**ENDS**  Electronic Nicotine Delivery Systems

**ENVI**  Committee on Environment, Public Health and Food Safety

**EU**  European Union

**MEP**  Member of European Parliament

**MS**  Member States

**Pharma**  Pharmaceutical(s)

**SME**  Small and Medium Enterprise

**TPD**  Tobacco Products Directive

**UK**  United Kingdom

**WHO**  World Health Organisation
Executive Summary

The workshop on "Electronic cigarettes" was organised by Policy Department A (Economic & Scientific Policy) at the request of the Committee on Environment, Public Health and Food Safety (ENVI) of the European Parliament and was hosted by Ms Linda MCAVAN, MEP, ENVI Committee; Rapporteur on Tobacco Products Directive.

The electronic cigarette (e-cigarette) has recently received a lot of media attention. The discussion is focused on the scientific evidence concerning long-term health effects and regulatory approaches of Member States. Therefore, several speakers were invited to the workshop to present the regulatory state of affairs concerning the e-cigarette in Finland, Germany and the United Kingdom (UK). Scientific evidence was provided by several speakers on drug addiction and on the physiological effects on the lungs and the heart. The European Parliament stressed the importance of the consumer side of the story and invited a German user association to give their opinion.

In her opening speech, MEP Ms MCAVAN highlighted the importance of having a clear overview of what happens in different jurisdictions concerning the regulation of e-cigarettes. Introducing the aim of the workshop, MEP Ms MCAVAN stated that the focus of the discussion would be on how to get the best possible regulation, not to abandon electronic cigarettes. The meeting commenced with a presentation by the Deputy Director General of SANCO, Mr SEYCHELL, who explained the current position of the European Commission (EC) on the regulation of e-cigarettes. Mr SEYCHELL explained that DG SANCO considers a regulation under both the tobacco and the medicine regulatory framework, applying a two-tiered approach using a threshold for the amount of nicotine in the e-cigarette to determine which framework applies. The aim is providing a good regulatory framework for e-cigarettes that will help reaching the full potential of e-cigarettes as a cessation aid, an alternative to regular tobacco cigarettes, and to prevent them from becoming a gateway product. This view was supported by Mr BERTOLLINI of the World Health Organisation (WHO). Both speakers underlined that a ban of e-cigarettes is neither the goal nor the consequence of the proposed regulation. In his presentation, Mr BERTOLLINI explained the product characteristics of e-cigarettes and that these products are also referred to as Electronic Nicotine Delivery Systems (ENDS). These systems deliver nicotine to the lungs using a vaporized propylene glycol/nicotine mixture, and that tobacco is not necessary for its operation. Electronic cigarettes can also be flavoured. Since the introduction of e-cigarettes to the market, there has been a significant increase in sales across the Europe. He also mentioned that the current scientific evidence on the potential benefits and/or risks of these products is inconclusive. In particular, the long-terms effects are unknown.

Mr MEAN, the regulatory representative of the UK, summarized the issue with e-cigarettes as follows: e-cigarettes may have adverse health effects; however, e-cigarettes may also be potentially beneficial as a smoking cessation aid. Removing them from the market could damage public health. Mr MEAN underlined that the position of the UK about the proposed Directive of the EC is not yet finalized, but that a recent public consultation was in favour of a medicine regulation framework. The UK legislation on this issue is expected in the coming months. Mr MEAN concluded by saying that it is important to stimulate people to stop smoking, possibly helped by nicotine replacement therapy. If the e-cigarette is licenced as such, this might be possible.

1 During the time of writing of these proceedings, the position on the regulation of e-cigarettes in the UK was published here: http://www.mhra.gov.uk/NCPs
In Germany, the market surveillance is solely within the responsibility of the local authorities. This means that it is regulated by the health authority of the Federal State (“Bundesland”) where the manufacturer, the authorised representative or the importer is located. As a result, some local authorities accept the classification of e-cigarettes as tobacco products or consumer products; others classify them as medicinal products. Also, national court decisions on this issue appear to be contradictory.

In Finland, an e-cigarette is regulated under the medicine framework if it contains nicotine. The national regulation, however, allows individuals to purchase e-cigarettes abroad. Due to this reason Ms PELLAS, the Finnish representative, stated that border issues are a key concern in the legislative framework. She stressed that this is currently not sufficiently addressed in the upcoming regulation of e-cigarettes.

Concerning the health effects of e-cigarettes, Prof BLASI, President of the European Respiratory Society said that it is currently unknown what the effects on the lungs are, what the extent of nicotine uptake is and what the overall health benefits and risks as well as long term effects are. He argued for more independent scientific research. Dr PISINGER, senior research fellow at the Research Centre for Prevention and Health in Copenhagen compared the current knowledge of the health effects of the e-cigarette to that of the regular cigarette about 100 years ago. She indicated that the continuous accumulation of small fragments of material in the lungs, due to inhaling with e-cigarettes, may be a serious cause for health concerns in the future. There may be a time delay in the visibility of these effects just as there was with regular cigarettes. Dr PISINGER is concerned that tobacco is so harmful that everything else is less harmful, causing people to overlook the danger of the alternatives. Prof ETTER of the University of Geneva stated that the scientific community concerning public health issues related to e-cigarettes was not well presented at the workshop. He argued that long term ‘vaping’ - using the e-cigarette - is much safer than smoking, that the e-cigarette is less addictive than cigarettes, but more addictive than nicotine gum. Also, Prof ETTER said that there is currently no evidence to prove that e-cigarettes are a gateway to smoking for adolescents that are non-smokers. According to Prof ETTER, quality control mechanisms, which focus on the safety of the devices itself are more important than medicinal legislation. Prof ETTER expressed the opinion that medicinal legislation may hinder the uptake of the e-cigarette as a smoking cessation aid or as an alternative to hazardous smoking.

Mr HOLY, representative of the German user association, stated that e-cigarettes have the potential to help reduce deaths from tobacco smoke in Europe, but that this cannot happen if they are sold in the pharmacy or treated as a pharmaceutical product. The attractiveness of the e-cigarette will definitely suffer from the proposed regulatory framework. Mr HOLY stated that the chance that e-cigarettes can help to reduce harm should not be missed. Also, he indicated that e-cigarettes cannot be a medicinal product as it does not intend to cure anything, but it is just an alternative to smoking.

MEP Ms MCAVAN concluded the workshop by indicating that it is not very often that the public health community is divided on a topic, but that it is divided on the regulation of e-cigarettes. Therefore, this e-cigarettes are a complex regulatory issue for MEPs.
1. LEGAL AND POLICY BACKGROUND

An electronic cigarette (e-cigarette) is an instrument which vaporises a liquid solution (that might contain nicotine) into aerosol mist to simulate smoking. With regard to current EU regulation, the e-cigarette does not fall under the Tobacco Products Directive (TPD) or under the Directive on the Community code relating to medicinal products for human use. If a regulator can show that the e-cigarette is dangerous to the health and safety of consumers, it could be withdrawn from the market based on Directive 2001/95 on General Product Safety.

Current national regulation concerning the e-cigarette in the Member States of the European Union (EU) is rather diverse. Some countries treat the product as a general consumer product, while others regulate the e-cigarette as a medicinal product. This may inhibit the e-cigarette from reaching its full potential as a cessation aid, an alternative to regular tobacco cigarettes, and to prevent them from becoming a gateway product to start smoking.

In an attempt to overcome this situation, the European Commission proposes EU regulation that builds on two key regulatory documents: the Directive on the Community code relating to medicinal products for human use and the TPD. Both Directives came into force in 2001. The proposal to revise TPD is recently adopted by the European Commission.

The Directive on the Community code relating to medicinal products for human use brings together, in a single instrument, all the provisions governing the placing on the market; the production; labelling; classification; distribution and advertising of medicinal products for human use. For example, with regard to the classification of medicinal products, one can be classified as a medicinal product subject to medical prescription or as a medicinal product not subject to medical prescription. The authorities of each Member State are obliged to draw up a list of medicinal products which may only be issued on medical prescription specifying, if necessary, the category of classification. This list has to be updated every year.

The TPD provides a basis for a high level of health protection and is adopted to approximate the laws, regulations and administrative provisions of the Member States regarding the maximum tar, nicotine and carbon monoxide yields of cigarettes and the warnings regarding health and other information to appear on unit packets of tobacco products, together with certain measures concerning the ingredients and the descriptions of tobacco products.

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In the last decade there have been several market and scientific developments in the tobacco sector, resulting in the aim to revise the Directive. The revision\textsuperscript{7} addresses mainly issues concerning the improvement of the functioning of the internal market, such as:

- Update already harmonised areas to overcome Member States' obstacles to bring their national legislations in line with new market, scientific and international developments;
- Address product related measures not yet covered by the TPD insofar as heterogeneous development in Member States has led to, or is likely to lead to, fragmentation of the internal market;
- Ensure that provisions of the Directive are not circumvented by placing on the market of products not compliant with the TPD.

With regard to electronic cigarettes containing nicotine over a certain threshold, the revision of the Directive states that they will only be allowed if they have been authorized as pharmaceuticals. Under the threshold the electronic cigarette would be regulated under the Tobacco Directive. In 2014, the revision is expected to be adopted while it would come into effect from 2015-2016.

2. PROCEEDINGS OF THE WORKSHOP

2.1. Welcome and opening – MEP Linda McAvan, ENVI Committee, Rapporteur on Tobacco Products Directive

Ms Linda MCAVAN, MEP, ENVI Committee, Rapporteur on Tobacco Products Directive opened the workshop by thanking the audience and all the speakers. She also mentioned in her welcome address that she has heard complaints from the industry that they were not able to speak at the workshop. She informed the audience that a meeting was held during which industry representatives presented their considerations concerning the new regulations on e-cigarettes. The members of the ENVI Committee have been informed about these considerations.

MEP Ms Linda MCAVAN indicated to the audience that the aim of this workshop is to provide an overview of what happens in different jurisdictions concerning the regulation of the electronic cigarette. It was planned to have a speaker presenting the position of the U.S. Food and Drug Administration, but unfortunately they were not available. Also, the German regulator could not be present due to unpleasant e-mails she had received.

MEP Ms Linda MCAVAN indicated that we all understand that MEPs are here to get the best possible regulation, not to abandon electronic cigarettes. She underlined that MEPs will not make regulations concerning this matter by themselves. She also stressed that it is considered extremely important that the European Parliament knows about national jurisdictions. Therefore, the meeting includes presentations of regulators. However, we will also hear the opinions of health experts. Finally, there was a request to present the views of the users; in this meeting, the German user association will represent them.

MEP Ms Linda MCAVAN concluded with mentioning that this workshop has been organised in order for MEPs to develop their own view on the topic of electronic cigarettes.

2.2. The current position of the European Commission, Mr Martin Seychell, Deputy Director General, DG SANCO

Mr SEYCHELL commenced by thanking MEP Linda MCAVAN for bringing the attendees of this workshop together. Mr SEYCHELL introduced his presentation by underlining that the European Commission (EC) has absolutely no intention to ban electronic cigarettes. Rather, Mr SEYCHELL stated that the EC wants these products to develop to their full potential as smoking cessation products and alternatives to regular (tobacco) cigarettes. He stressed that the EC strongly believes that strong regulatory approval concerning safety and efficacy is needed to achieve this aim.

Mr SEYCHELL mentioned that the market for electronic cigarettes in the UK has seen impressive growth in the past year. Also, they have seen the entry of new players, new advertorials and new shops that commenced with selling electronic cigarettes. According to Mr SEYCHELL, there clearly is a booming growth in this area, but it is currently without clear regulation. Electronic cigarettes may fall under the General Product Safety Directive, but this was not intended for substances or products of this kind, and therefore Mr SEYCHELL argued that there is the need for something more reassuring than the General Product Safety Directive.
Mr SEYCHELL stated that there is a wide agreement on discouraging current smokers to continue their habit and that the electronic cigarette may play a role in this. However, one large concern is that of new and young users. A recent (Hungarian) study indicated that among a group of smokers of 13-15 years old, 13% had used electronic cigarettes. This is a development that is followed with great concern, as electronic cigarettes could develop into a gateway product. This, said Mr SEYCHELL, is a reason to ask for a good legislative framework. Other reasons mentioned by Mr SEYCHELL are: a) the large differences in national legislation in Member States (MS); b) the lack of clear legislation, which lead to a problem for the functioning of the market because there is legislative uncertainty; and c) different cessation products which have the same substance but with different method of application currently fall under different legislative frameworks.

Mr SEYCHELL concluded that there are three key questions to be addressed:

i) How can we ensure that electronic cigarettes are safe and that good manufacturing is applied?

ii) How can we be sure that electronic cigarettes reach their full potential and are effective for their intended purpose?

iii) How can we be sure that electronic cigarettes are not used by young people?

According to Mr SEYCHELL, medicinal regulation provides the answer to these questions, as the level of legal certainty is much greater by subjecting electronic cigarettes to marketing authorization under ‘pharma-regulation’.8

Mr SEYCHELL stated that he is aware of several concerns regarding the medicinal regulation and mentions three:

First, some argue that electronic cigarettes are not pharmaceutical products. However, Mr SEYCHELL argued that several studies show that users use it as a cessation aid; therefore, the medicine regulation is proportionate and legal.

Second, there have been comments that the regulation of electronic cigarettes would be the end of small and medium enterprises (SME’s) in this area. Mr SEYCHELL argued that this is not the case, as the majority of pharmaceutical companies are SME’s, which thus are businesses that are successful despite their product(s) being regulated. What Mr SEYCHELL hopes to achieve with this regulation, is that the producers of electronic cigarettes will think like pharmaceutical industries and put safety, efficacy and quality control first. Furthermore, the Directive would lead to a higher degree of legal certainty, which is preferable to the functioning of the market.

Third, consumers want to buy electronic cigarettes in supermarkets and not in pharmacies. The response of Mr SEYCHELL is that under this Directive electronic cigarettes below a certain threshold can still be sold freely in the supermarket, but with improved warnings on labels. Essentially, the EC does not believe that selling electronic cigarettes in pharmacy is a problem. Fundamentally, MS decide what is sold since the Directive of the EC does not specify a point of sale.

Mr SEYCHELL concluded that a good regulatory framework for electronic cigarettes will help them reach their full potential as a cessation aid, as an alternative to regular tobacco cigarettes, and shall prevent them from becoming gateway products.

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2.3. Institutional Representation

2.3.1. WHO study and position on Electronic cigarettes

Mr Roberto Bertollini  
Chief Scientist and WHO Representative to the European Union

Dr BERTOLLINI stated that electronic cigarettes are a controversial issue for which additional studies and evidence are needed. He would like to share the viewpoint of WHO concerning electronic cigarettes based on the latest scientific evidence.

He presented the issue using four topics: 1) what are Electronic Nicotine Delivery Systems (ENDS); 2) what is the available scientific evidence; 3) reflections on the availability of the product; and 4) the position of WHO. Concerning the latter, this is currently being finalized and will be published later in the year.

1. ENDS are electronic nicotine delivery systems and they deliver nicotine to the lungs using a vaporized propylene glycol/nicotine mixture. Tobacco is not necessary for its operation. The mixture is often flavoured using flavours that are particularly attractive to adolescents.

2. Recent findings from Turkey indicate that propylene glycol and tobacco specific N-nitrosamines, a powerful carcinogen, were found in the majority of samples. Toxins from the e-cigarette averaged around 20% of those of a regular cigarette. It was also found that similarly labelled ENDS cartridges emit different amounts of nicotine, and a nicotine overdose may occur which can have serious side effects. There are currently no studies available on safety and efficacy of long-term e-cigarettes use. One major WHO concern is that electronic cigarettes by resembling normal cigarettes, may normalize and glamorize smoking as well as promote dual use among smokers, for instance, to defy smoke free ordinances.

3. Concerning availability, studies show that in the EU 7% of citizens have at least tried electronic cigarettes. Trends show that electronic cigarette use is likely to grow despite limited understanding of the products characteristics. The expected growth of the e-cigarette market is confirmed by investments of large tobacco firms in companies producing e-cigarettes. WHO is concerned that if unregulated, the tobacco industry may use their extensive resources to promote marketing of electronic cigarettes in order to maintain and extend addiction to tobacco products. Currently, e-cigarettes seem to be mainly an issue in high and middle-income countries.

4. At the moment, ENDS are not regulated under the WHO Framework Convention on Tobacco Control: they are not taxed and are exempted from plain packaging laws and second-hand smoke laws. Claims implying health benefits, less harm than cigarettes or smoking cessation efficacy, should not be allowed unless scientifically proven. According to WHO, electronic cigarettes should be regulated both as tobacco and medical product. When regulated as a tobacco product, then no ENDS would be allowed to be smoked in non-smoking designated places, thereby upholding Article 8 of the WHO FCTC. When regulated as a medical product when health or therapeutic benefits are claimed, then only those ENDS that have passed national regulatory approval for safety, efficacy and quality would be allowed to reach consumers.
2.3.2. First round of Questions and Answers

Q: MEP Ms WILLMOTT: How did you determine the threshold?

A: Mr SEYCHELL: A key consideration was the level playing field. Therefore Mr SEYCHELL stated that the EC reviewed existing nicotine replacement products. The threshold of nicotine in e-cigarettes was established by taking the lowest level of nicotine in a product which had already been authorized as a medical product in at least one MS.

Q: MEP Mr Davies: Why are you not making normal cigarettes a medicinal product? I am appalled by the overreaction of the Commission. If these save lives, why put restrictions on it?

A: Mr SEYCHELL: A medicinal product is designed to treat and prevent a disease. Tobacco leads to deaths and thus tobacco addiction is a disease. The answer to a disease is a medicinal product. There should be products on the market that are effective to treat this disease. Tobacco addiction is a frightening disease and thus we need to have a response. Cigarettes are the problem. They are legal by an accident of history. The issue is that we have millions of addictive people and that we need to give them a good alternative.

MEP Ms Taylor: Could you confirm that young people already smoke e-cigarettes? Were they already a smoker before starting to use e-cigarettes? Is there evidence that electronic cigarettes are gateway products?

A: Mr SEYCHELL: In the Hungarian study mentioned earlier they followed a cohort aged 13-15 years. These adolescents could not have been tobacco addicts, since they would have had started smoking at the age of 10 years. Hence, they used the electronic cigarette prior to having a tobacco addiction. Concerning the question on the gateway: the features of the electronic cigarette are really different from other products like nicotine patches or gum. The product is often designed to have similarity with a cigarette. Therefore we talk about a gateway potential.

A: Dr BERTOLLINI: We have a major epidemic in Europe and we need to reduce consumption of smoking. An option to do so is by regulating them as tobacco products and as medicines. We should not glamorize cigarettes. We are not certain that the electronic cigarette helps as a smoking cessation aid, but we should not discourage the use of these devices and develop proper regulation.

Q: Prof. POLOSA: There is a lot of evidence that these products are not a gateway. At least five papers state this. The Hungarian study that you cite is very unknown. There is also another problem as I am still confused about whether you want to regulate it as a medicine or as tobacco? If the claim of the product is smoking cessation or reduction, then regulation should be medicinal regulation.

Q: MEP Mr SCHLYTER: Inhalation may have alternative effects than other ways of nicotine uptake. Do we have enough information about this? Also, do you need the smoke for cessation or is it unnecessary?

Q: MEP Mr RIES: There is a difference between the real picture and the legal picture. Why is there such a huge discrepancy between the EC and users who individually write to us and describe a totally different picture? Adolescents are indeed a concern, but young people tell us it is too expensive.
Q: Prof. ETTER: The science of electronic cigarettes has not been fairly represented here at the workshop. A number of statements here have no scientific basis. Do electronic cigarettes normalise smoking? If they help people to quit smoking than it is probably not true that e-cigarettes normalise tobacco smoking. Is dual use a bad thing? Dual use may be a good thing. Concerning the threshold: 2mg is an arbitrary threshold as there is no science base at all. It is important to note that only one company has registered a randomised clinical trial and this is a large tobacco industry player. The consequence of this regulation is that it will benefit the tobacco industry.

A: Mr SEYCHELL: Concerning the ban: we are not proposing a ban. There are many medicinal products that have not been banned, for example nicotine gums and patches. Clearly it is possible to meet obligations of pharmaceutical regulation and to have a business. Concerning the studies: We are looking at studies independent from industry since many studies are in fact financed by industry. Concerning consumers: even a packet of crisp has more information than electronic cigarettes. Manufacturers have mentioned that they cannot even predict the true content per batch. We are not against electronic cigarettes; what we want is proper regulation and proper information for consumers.

A: Mr BERTOLLINI: Cigarettes are carcinogen and thus glamorization of smoking is something to be avoided. Electronic cigarettes actually look like cigarettes. Also, studies that have been performed look at consumption after 10 weeks, which is too short to measure effects. We should look at available evidence with caution and also have a cautionary approach in a situation where the knowledge is uncertain.
2.4. Questions to European regulators on e-cigarettes

2.4.1. Mr Jeremy Mean
Access and information for medicines and standards group manager
Vigilance and Risk Management of Medicines, London (UK)

Mr MEAN introduced his talk with the following information: In 2010, the United Kingdom (UK) Government held a public consultation on the regulation of nicotine containing products, including electronic cigarettes. Following this exercise, it was concluded that in the UK, medicinal regulation of these products was preferred, to ensure that products that met appropriate standards of safety, quality and efficacy were available to help smokers to cut down their smoking and help them to reduce harms of smoking, to smokers and those around them. The public health community, smoking cessation professionals and others involved in the consultation saw the framework as very useful. Mr MEAN stated that the idea of this regulation was not to ban products, but to make appropriate products available. Since electronic cigarettes may be potentially beneficial as a smoking cessation aid, removing them from the market could damage public health.

Mr MEAN suggested that the UK and a significant number of other Member States relied on the General Product Safety Directive as the default for the regulation of electronic cigarettes. Mr MEAN questioned whether this form of regulation is the best fit. For example, this regulation does not capture product content, product safety or long term safety. The regulation does not include advertising, nor does it manage risks for the effectiveness of products. Mr MEAN reported on a very recent study by Action on Smoking and Health, which concluded that electronic cigarettes were used in exactly the same way as licensed nicotine replacement therapies, also considering dual use. He mentions that while there is no significant evidence on electronic cigarettes being a gateway product for young people, there was a risk that electronic cigarettes will be used in this way. This risk, according to Mr MEAN, should be managed using regulation.

Mr MEAN asked the question whether medicine regulation would be better suited for the regulation of e-cigarettes than the General Product Safety Directive. The UK will come to a decision on this matter in the next few months. Mr MEAN mentioned that there were certain aspects of medicines regulation that indicate its capacity to be a good fit. For example, it has a framework around advertising, a requirement to promote rational use and age limits. Furthermore, it requires good product information about length of use for effective smoking reduction. Nevertheless, Mr MEAN underlined that the position of the UK about the proposed Directive of the Commission was not yet finalized. First of all, he states, the safety profile nicotine was well known and less harmful than tobacco. Therefore, it is undesirable that a regulatory framework would damage the reputation of nicotine. Second, Mr MEAN indicated that the UK’s expert advisors had found it difficult to reconcile the approach to levels of nicotine content proposed in the Tobacco Products Directive as a threshold for medicines regulation. For example, an active pharmaceutical substance may not be effective at a very low level, but is still a medicinal product, such as paracetamol, which at large dosages can be dangerous. Mr MEAN also indicated that dosage itself is quite a difficult thing to define. Users tend to use nicotine until it reduces their craving and thus dosage is difficult to incorporate in law.

Mr MEAN added two remarks concerning medicine regulation. First, medicine regulation is not prohibitive. There are licences for nicotine replacement therapy. Second, the cost of regulation is relatively small when it is compared to the market of the industry.
Mr MEAN considered medicine regulation to be proportionate for the regulation of nicotine – most nicotine products having been regulated since the 1970s and that regulation could be adapted to fit this kind of well known product.

Mr MEAN concluded by saying that he wants to drive people from smoking to nicotine replacement therapy. If the electronic cigarette were licenced as such, this would help to reduce the harms of smoking to smokers and those around them.

**2.4.2. Dr. Kerstin Stephan**  
*Bundesinstitut für Arzneimittel und Medizinprodukte (BfArM), (DE)*

Dr. Stephan could not make it to the meeting. Her statement is read by a consultant of Ecorys (an independent third party). The integral text of this statement is place below.

1) **Overview of the situation in Germany**

The Federal Institute for Drugs and Medical Devices (BfArM) considers the e-cigarette to be a medicinal product due to its pharmacological mode of action (interaction of the substance – in this case: nicotine and a cellular constituent e.g. acetylcholine receptors) irrespective of the amount of nicotine. Following the German Medicinal Products Act ("Arzneimittelgesetz"), products which are clearly classified as tobacco products cannot be classified as medicinal product.

As e-cigarettes are not smoked (as opposed to being inhaled), sniffed, sucked or chewed, they do not fall under the definition of tobacco products. Therefore, these products are medicinal products and the exception for tobacco products is not applicable.

However, this interpretation is disputed.

In Germany, the market surveillance is solely within the responsibility of the local Federal State authorities. Therefore, the binding decision concerning the classification as well as the demarcation from other products is made by the health authority of the respective Federal State ("Bundesland") competent for the domicile of the manufacturer, his authorised representative or the importer.

Due to the above mentioned reasons some local authorities accept the classification of e-cigarettes as tobacco products or consumer products, others classify them as medicinal products. Also, national court decisions on this issue are quiet contradictory.

Irrespective of these explanations, e-cigarettes with medical claims concerning tobacco cessation are classified as medicinal products by presentation.

2) **Do you accept the concept of a two-tier threshold as proposed by the Commission? Is there any merit in it?**

A threshold will raise legal certainty with regard to product classification. Therefore, the BfArM appreciates this proposal, especially the determination of the threshold with the help of three different values (mean maximum peak plasma concentration, nicotine concentration per ml and per cigarette) seems to be a suitable procedure. The BfArM recommends also considering the total daily dosage of nicotine.

We would also like to point out concerning smoking cessation that not the total amount of nicotine in the product but the level of nicotine addiction is decisive for the posology. Inhalers, authorised as medicinal products, contain 15 mg nicotine per cartridge. For single dosages less than 2mg nicotine is recommended.
The plasma levels and the evaporated dosage also vary depending on the temperature. If the proposed threshold becomes legally binding, it is important that the nicotine amount per cartridge should be stated on the outer package or other available information, which would allow a fast classification.

3) What would be the implication of medicines regulation in this country (costs and time needed for a marketing authorisation, where could e-cigs be sold, how could they be advertised, age-restrictions etcetera).

A marketing authorisation for a well-established-use product will cost between 15.700 euro (national application and full reference to an already authorised product) and 57.000 euro (decentralised procedure without reference). Seven months are needed for assessment. In general, medicinal products are only sold in pharmacies but there are exceptions to this rule. Age restrictions could be defined during the assessment.

Medicinal products containing nicotine for the oral (also inhalative) application can be sold without medical prescription if they contain maximum 150 mg nicotine per cartridge and 1 mg nicotine per single dose and 64 mg nicotine per daily dose. For these medicinal products advertising is generally allowed following the special and detailed regulations for the advertisement of medicinal products in accordance with the German Drug Advertising Law.

4) Is there a lighter touch medicine regulation as opposed to full clinical trials etc.?

BfArM has already given scientific advice for applications for authorisation of e-cigarettes. In principle, a hybrid application with reference to an appropriate reference medicinal product such as Nicorette Inhaler® or Nicorette Spray® may be possible from the regulatory point of view. In that case also new supporting data of own clinical trials are requested. The extent of the requested clinical and preclinical data would be comparable with the request for an extension application. However, no PIPs are required for hybrid applications. It would have to be checked whether all new clinical or new preclinical data requested for supporting the new pharmaceutical form / the new routes of administration have to be submitted completely.

5) Would regulation of e-cigarettes amount to a ban?

Customer protection, safety and health risks should be regarded carefully. Currently, appropriate data is missing. If e-cigarettes are classified as medicinal products and a marketing authorisation is thus mandatory, BfArM is willing to give clear advice and valuable help as far as possible.

2.4.3. Dr. Kristina Pellas
Senior Pharmaceutical Inspector, Finnish Medicines Agency, (FI)

Ms PELLAS began her talk by mentioning that she fully agreed with all statements that were made by Mr MEAN. There were, however, some things to be added from the Finnish perspective.

In the current situation, non-nicotine liquids in electronic cigarettes do not fall under medicine regulation in Finland. Nicotine products, on the other hand, are a pharmacological substance. In fact, they are a good example of a typical medicinal substance with receptor activity and a pharmacological mechanism of action. In Finland, it is currently possible for private persons to purchase products outside the pharmacy, but medicinal products are only sold to people over 18 years of age. Concerning nicotine liquids, private persons can order those products as they are on the market in other countries and stock for a three months use period.
Ms PELLAS mentioned that Article 18 of the proposed Directive for electronic cigarettes is problematic for Finland. For example, the daily dosage is not mentioned, nor is the possibility for private persons to order the product included. Ms PELLAS mentions that she feels that it is not very useful to talk about milligrams of product content.

Ms PELLAS also indicated that the legislation procedure for medicinal products is very precise with four different processes requiring a total of two years or more, and about 10,000 euro to submit an application dossier for marketing authorization.

Ms PELLAS mentioned that if nicotine would be an uncontrolled non-medical substance, private persons could import it in large quantities. Ms PELLAS concluded with the remark that border issues are a crucial challenge for Finland.

2.4.4. Second round of Questions and Answers

Q: MEP Ms Linda MCAVAN opened the round with some questions. She would like to know if applying medicinal regulation would require clinical trials. Also, she would like to know whether there are other regulatory options besides medicinal regulation.

A: Mr MEAN: The medicinal framework is very broad, and we also see the possibility for the e-cigarettes to rely on older regulations. Based on some studies it became clear that products vary very widely in their content of nicotine and toxicants, but also in delivery of nicotine regardless of content. We want regulation to encourage product development. The medicine regulation is not a straightjacket, but it can enable product development by having a level playing field and as such contribute to harm reduction.

A: Ms PELLAS questioned if there is a habit of smoking, would people who are able to quit develop a habit of e-smoking?

A: Mr SEYCHELL: A problem with the medicinal regulation framework is that it does not give information about ‘effectiveness for purpose’. According to Mr SEYCHELL, a new regime should contain good manufacturing, effectiveness, vigilance and a basis for market authorization regulation. In his opinion, these requirements look like a copy of the medicinal regulation, so a new regulation would resemble pharma regulation, but would not have the advantage of the current knowledge and experience with the previous framework. Concerning the need for clinical trials: for every product under pharma regulation, a dossier is required. This dossier prescribes type of evidence that is required.

Q: MEP Ms WILLMOTT: How long would it take to classify these products under medicinal regulation?

A: Mr SEYCHELL: First, it depends on the amount of information the industry currently has. If indeed there is a lot of evidence as is often argued, then it can be fast. Second: is the industry thinking about this product as a product for which they have to demonstrate safety and thus have appropriate systems in place? Or will they market them to circumvent bans on tobacco?

Q: MEP Ms TAYLOR: The representatives from regulators present here are from countries where you can buy products outside of a pharmacy. She emphasised that electronic cigarettes are only sold outside pharmacies in about half of the EU MSs. The question is whether there could be reduced availability for the other countries.

A: Mr MEAN: MSs can decide for themselves. The MSs could choose to set up a category explicitly for nicotine replacement products.
Q: Prof POLOSA: The fragmentation of the market is not a bad thing as it creates a dynamic for the development of new and better products. He is worried that the pharma framework is sometimes very slow. Trials may take many years and that needs to be taken into account. We need regulation, but we also need to be creative. Perhaps the regulation can be based partly on pharma regulation, but also parts of the General Product Safety regulation can provide a lot of information.

Q: MEP Ms WILLMOTT: To the gentleman that just spoke: Do you have any conflict of interest?

A: Prof POLOSA: Yes, I have a conflict of interest but it is hardly possible not to have a conflict of interest. Doctors always have conflicts of interest.

Q: Ms Florence BERTELETTI: This discussion is taking place at a time when MSs are at different levels of implementation of the WHO Framework Convention on Tobacco Control. In the UK, implementation is rather far. In that country, 7 out of 10 smokers want to quit smoking. My question is, if we look at consumers, when regulating electronic cigarettes, are you taking into account the level of implementation of the Framework Convention on Tobacco Control in a MS?

A: Mr BERTOLLINI: The context is not the same in the MSs of the EU. So, we need country specific evidence with respect to the different countries.
2.5. Scientific information: clinical and research findings

MEP Ms Linda MCAVAN introduced the scientific part of the workshop by stating that she is concerned that there is a product on the market that is inhaled, while there is limited information on the long term effects. She mentioned that she has seen advertisements of people smoking while holding babies.

2.5.1. Electronic Nicotine Delivery Systems – A known unknown

Prof. Francesco Blasi, President of the European Respiratory Society

Prof BLASI started with the introduction of the European Respiratory Society; it is a medical organization. Its mission is to protect the health of EU citizens. The support of smoking cessation is part of our program.

Prof BLASI mentioned that in controversial issues, there are things we know, things we don’t know, and things we don’t know that we don’t know. His presentation was structured accordingly.

What we know about electronic nicotine delivery systems is that they typically consist of propylene glycol, nicotine and flavourings. We also know that there has been a considerable increase in EU distribution and sales since its introduction.

What we don’t yet know is its effects on the lungs, the extent of nicotine uptake, whether other harmful chemicals are in the product, and generally, the health benefits and risks as well as the long term effects. It is important to research these long term effects; this requires funding for independent research studies.

Concerning this lack of knowledge, Prof BLASI states that when scientific evidence is insufficient, inconclusive or uncertain, leading to reasonable grounds for concern, with potentially dangerous effect on humans, they should apply the precautionary principle.

Prof BLASI concluded by mentioning that there is a clear need for independent studies, and that the EU should support these studies. These studies should be independent clinical trials, behavioural and psychological studies, and post-marketing studies at individual and population levels across Europe. Prof BLASI stated that any regulation that is developed should be evidence-based and in line with the WHO Framework Convention on Tobacco Control. Prof BLASI concluded with the statement that while electronic cigarettes have the potential to reduce tobacco-related harm (by helping smokers to cut down and quit), a strong regulatory framework is required for the sale and use of e-cigarettes to:

- ensure they are safe, quality assured and effective at helping smokers to cut down or quit,
- restrict their marketing, sale and promotion so that it is only targeted at smokers as a way of cutting down and quitting, and does not appeal to non-smokers, in particular children and young people,
- prohibit their use in workplaces and public places to limit second hand exposure to the vapour exhaled by the user, and to ensure their use does not undermine smoking prevention and cessation by reinforcing the normalcy of cigarette use".

Member States should recall Article 14 guidelines of the UN – WHO Treaty which state that countries should prioritise cessation (quit) treatments "strongly based on scientific evidence". Any regulation of electronic cigarettes should be science based.
2.5.2. Electronic cigarettes, let’s not repeat the errors of the past

Dr. Charlotta Pisinger, Senior Research Fellow at Research Centre for Prevention and Health, Copenhagen, (DK)

Dr. PISINGER introduced her presentation by stating that she has nothing to declare.

According to Dr. PISINGER, the scientific knowledge we have today of electronic cigarettes can be compared to that of smoking 100 years ago. She fears a time delay in visible consequences, just as was seen with cigarettes.

In order to be able to say something about long term effect of the electronic cigarettes on cardiovascular health, many more years of use are required.

A concern is that nicotine, toxins and carcinogens have been found. These may only be traces of toxins, but an accumulation of chemicals can occur in the lungs over the years and this can be a health threat.

Dr. PISINGER stated that there is conflicting information on acute cardiovascular effects of electronic cigarette use, but that there are user accounts of adverse events. Potentially there is underreporting of negative events as people do not consider electronic cigarettes as a drug and therefore do not report it to the FDA. The most frequent symptoms reported by users were chest pain and a feeling of tightening in the chest. Dr. PISINGER stressed that these are not scientific results, but that this information is an important contrast to the picture post-card presentation of electronic cigarettes by manufacturers.

Dr. PISINGER is concerned that tobacco is so harmful that everything else is less harmful, causing people to overlook the danger of the alternatives. Also, there is no randomized controlled trial to confirm the effect of e-cigarettes on smoking cessation. She mentioned that in a recent survey use of electronic cigarettes was not associated with successful quit attempts.

She concluded by stating that electronic cigarettes may not be the magic bullet we hope it is, and that we should not repeat the errors of the past. The product is being sold as safe, while it in fact may not be safe. Regulation by national/EU authorities, as well as scientific evidence on safety and efficacy, is needed.

2.5.3. Addictiveness of e-cigarettes

Prof. Jean-Francois Etter, Faculty of Medicine, University of Geneva, (CH)

Prof ETTER commenced his presentation by stating that he has 20 years of experience with researching smoking dependence and has produced some of the first studies in e-cigarette users. He has not had a conflict of interest in past 8 years with the pharmaceutical industry. He has recently visited factories of electronic cigarettes in China, and the ticket for this trip was paid for by the industry.

Prof ETTER stated that the key definition of addiction is the compulsive use in spite of adverse consequences for the user’s health, family and social life. Prof ETTER remarked that two important components of this definition are not known to apply to electronic cigarettes: compulsive use and adverse consequences.

Since 97% to 100% of vapers use nicotine containing e-cigarettes, electronic cigarettes are in fact nicotine delivery devices. Prof ETTER mentioned that addictiveness depends on the speed of nicotine delivery to the brain and the activation of the reward system in the brain.
The speed of delivery for electronic cigarettes is quicker than for the nicotine gum or inhaler, but slower than for cigarettes. As such, the electronic cigarette is probably more addictive than inhalers and gums but less than cigarettes.

Long-term ‘vaping’ is much safer than smoking. As a comparison, 1% of smokers who quit smoking with nicotine gums remain addicted to these gums, but this is not regarded as a public health issue, nor is the nicotine gum sold with medical prescription. Similarly, even though e-cigarettes may be addictive, this will not represent a significant public health problem.

It is currently not known if electronic cigarette use is a gateway to smoking for young non-smokers. For fruit flavoured nicotine gums, it is shown that they are not a gateway to smoking in adolescent non-smokers. Clearly, there is need for more research.

Prof ETTER concluded by mentioning that he has published an article with a research agenda on e-cigarettes in the journal ‘Tobacco Control’ and has written a book which contains a fair representation of the science. According to Prof ETTER, the information presented in the workshop today was not a fair representation of the science on e-cigarettes.

2.5.4. Third round of Questions and Answers

Q: MEP Ms Linda MCAVAN: Is it safe to vape?

A: Prof ETTER: It is safe. Of course, what is not known is what happens when you inhale [it] during several years, this is not known. The nicotine is not toxic in these dosages. Long term effects are not known for inhaling fruit flavoured products. Carcinogens in electronic cigarettes are in the same levels as in nicotine gums and patches. That it can be detected does not mean it is dangerous for your health. There is a need for quality control.

A: Prof BLASI: We don’t really know what happens when you are exposed to 2nd hand smoking, we need more research. There are so many brands around, but quality control is lacking. As such, what is really present in electronic cigarettes is not known. In Italy a judge prohibited the sale of some products. We need tight regulation on quality control and then appropriate regulation on use.

A: Dr. PISINGER: Metals and silicones have been found in electronic cigarettes. What we sometimes forget is that we must discriminate between eating something, and inhaling something that ends up in the lungs and never comes back out. If you do this daily many times, the amounts that accumulate in the lungs over time may be a health concern.

A: Prof ETTER: Today we see a good demonstration of what cherry picking studies can do. You cannot pick out studies with a negative result and call it science. Also, withdrawal symptoms are usually confounded with side effects.

Q: MEP Ms WILLMOTT. We agree that more research is needed. My question is, if we all want electronic cigarettes to be used to prevent smoking or help people quit, why can it not be regulated in the same way as all smoking cessation products?

A: Prof ETTER: The problem with the threshold is that it is quite high. ‘Levelling the playing field’ is in the advantage of pharmaceutical industry and big tobacco industry. Levelling the playing field can only be done when it is for all nicotine products. Gums and patches are not very attractive smoking cessation products. Electronic cigarettes can make a difference because they are attractive.
A: Prof BLASI: We need regulation because if there is no regulation, there is no control. We are not banning anything. We are not proposing to ban electronic cigarettes. Electronic cigarettes can be a very important device for smoking cessation, but we have to regulate the use, because there is a lack of quality control, of safety control.

Q: MEP Ms Linda MCAVAN: What is the regulatory framework that sorts this problem? Even if you want to achieve harm reduction, we need the regulatory framework.

A: Prof ETTER: Quality control is important. You cannot leave the nicotine addicts in the hand of the industry. I would limit regulation to quality control to make electronic cigarettes available to many people and not push it out of the market too soon. We need these products as widely available as possible. I fear this is not the case when it is regulated as medicinal product.

Q: MEP Mr RIES: We are talking about hindering the electronic cigarette, but are they not better than smoking? Every cigarette not smoked is a win. My question is, if tobacco kills 1 out of 2, when we have the years to find out, what could be the results of e-smoking? In the worst case, will it kill 1 out of 10, 1 out of 20?

Q: MEP Ms TAYLOR: I am confused about the use of the electronic cigarette. Smokers do not stop their nicotine habit, but stop smoking and switch to electronic cigarettes. Then, the nicotine habit still exists. Is there data on completely quitting nicotine addiction? This is an important distinction.

A: Prof ETTER: There is no data on this. We will know the answers. However, the problem is not nicotine addiction, but smoking.

A: Prof BLASI: The main point is that reducing to 1 out of 10 is indeed reducing harm, but the goal is to have 0 out of 10 deaths. User reports are not Randomised Controlled Trials and thus not sufficient evidence. We need Randomised Controlled Trials, and we need them to be independent.
2.6. The voice of consumer associations

2.6.1. German e-cigarettes users association

Mr Hans Christian Holy, Interessengemeinschaft E-Dampfen, (DE)

Mr HOLY introduced his talk by mentioning that electronic cigarettes are just an alternative to the tobacco cigarette and that they cannot be a medicinal product. This is due to the fact that medicinal products have the goal to cure something, while the electronic cigarette is not curing anything, but rather replacing a proved harmful addiction (smoking) with a far less dangerous enjoyment (the electronic cigarette).

Mr HOLY remarked that selling the electronic cigarette in a pharmacy does not make it a safer product. Furthermore, he indicated that a pharmaceutical product does not need any dangerous substance markings, and he wonders whether the Commission has thought about this.

Regarding the addictiveness of nicotine, Mr HOLY stated that there is no evidence, and that opponents often repeat their arguments, which does not validate them.

Also, Mr HOLY has not seen any proof or even an indication that minors start using nicotine with electronic cigarettes. He does not believe the findings of the Hungarian study which mentions that 9% of the minors studied had been in contact with electronic cigarettes. Electronic cigarettes are not ‘cool’; they are expensive and have an annoying rather intricate handling.

Mr HOLY stated that electronic cigarettes and electronic liquids should not be regulated in the Tobacco Products Directive as they contain no tobacco at all. He considers it illegal to pose stricter regulations on the less harmful electronic cigarette than on the more harmful normal cigarette, which is available everywhere.

To conclude, Mr HOLY mentioned that electronic cigarettes have the potential to help reduce the 600,000 deaths from tobacco smoke each year in Europe, but that this cannot happen if they are sold in the pharmacy or treated as a pharmaceutical product. The attractiveness of the electronic cigarette will suffer under the proposed regulatory framework. The chance that electronic cigarettes bring for harm reduction should not be missed.

2.6.2. Fourth round of Questions and Answers

Q: MEP Linda MCAVAN: Mr HOLY states that nicotine is not addictive? Experts consider it to be addictive. Is there evidence for your statement?

A: Mr HOLY: We are just a consumer organization, so we cannot conduct studies. We are looking at surveys and published data.

Q: Mr BERTOLLINI: Do you [Mr HOLY] represent the users and citizens of Europe? I have a general comment. We are here to fight against smoking and a word of prudence to electronic cigarettes is quite necessary and appropriate. There are several uncertainties and we should be prudent in statements concerning the state of knowledge. Electronic cigarettes may contribute to smoking cessation, but is it is not the panacea. Some regulation about quality and use is appropriate.
Q: Ms Doriane FUCHS: You claim to represent users. Could you [Mr HOLY] inform me about the evidence you have? Where did you get your evidence from?

Q: Mr Francois Crawely: It seems almost too easy to put electronic cigarettes into a medicines regulatory framework. This is a ready-made solution for a set of specific products. Does the Commission not have more work to do about how this product needs to be regulated, rather than putting it in a framework that may not fit? Perhaps this product should be creatively regulated.

A: Mr HOLY: Concerning safety: We made a lot of progress with writing to shops. These shops apply child security rules and the packages are appropriate. A lot of shops are precautionary concerning content.

A: Mr HOLY: Concerning our representation of the European citizens: I think that the letters that you have received indicate there is a large community that does not want to lose the ability to smoke anymore.

A: Mr HOLY: Concerning the science: Electronic cigarettes release toxics, which is 20% of that of conventional cigarettes. Thus, it is 80% less than what we normally consume. Electronic cigarettes are a far less dangerous alternative.

A: Prof ETTER: You are dealing with an addictive product. People who are addicted will do anything to get this product. Prisoners, for example, will pay a very high price for cigarettes. Think about the impact of the regulation. There is a history on regulating addictive substances, and it is largely a failure.

A: Dr. PISINGER. We have to remember that regular cigarettes are so harmful that we would do anything to get an alternative. I think we have the responsibility to the society that the new product on the market is a safe one.

Q: Ms Florence BERTELETTI: How is the organization [the user association] funded? Also, I understood that electronic cigarettes are used in places where they can’t smoke normal cigarettes. They do not use it to quit, but to use it when you can’t smoke.

Q: Prof POLOSA: Electronic cigarettes are an alternative or a substitute used by smokers. The main issue is when a non-smoker is going to approach this new product. ‘Safety’ is moving people away from a habit which is very harmful to an area which is less harmful. Let’s work on the new product directive, moulded around safety, so we can make it the safest product ever.

A: Prof BLASI: I disagree with the above; regulation is just a way to control the use of e-cigarettes.
2.7. Conclusions by MEP Ms Linda MCAVAN

MEP Ms Linda MCAVAN concluded that e-cigarettes are a difficult topic for regulators. This workshop showed that there is a split within the public health community on how to deal with e-cigarettes and such a split does not occur very often.

She indicated that she does not want to repeat the mistakes that have been made in the past with tobacco regulation, where regulation came when the market was already flooded with products. MEP Ms Linda MCAVAN said that it is the responsibility of the producers who place products on the market that these products meet the concerns of the users.

MEP Ms Linda MCAVAN adjourned the workshop by thanking everybody for their contributions and mentioned that the discussion on e-cigarettes will be continued.
ANNEX 1: PROGRAMME

WORKSHOP
Electronic Cigarettes
Tuesday, 7 May 2013 from 12.30 to 15.30
European Parliament, Room PHS 5B001, Brussels

Organised by the Policy Department A - Economy & Science
for the Committee on the Environment, Public Health and Food Safety (ENVI) and
the ENVI Secretariat

AGENDA

12.30 - 12.35
Welcome and opening by Linda McAvan, MEP, ENVI Committee. Rapporteur on
Tobacco Products Directive

12.35 - 12.40
The current position of the European Commission
Mr. Martin SEYCHELL, Deputy Director General, SANCO

Part 1
Institutional Representation

12.40 - 12.55
Presentation of the WHO study on e-cigarettes
Mr. Roberto BERTOLLINI, Chief Scientist and WHO Representative to the European Union.

12:55 - 13:10
Q&A

Part 2
Questions to the European Regulators on e-cigarettes

13.10 - 13.50 (40 min)

United Kingdom: new regulation of e-cigarettes
Mr. Jeremy MEAN, Access and Information for Medicines and Standards Group Manager,
Vigilance and Risk Management of Medicines, London. (UK)

Germany: new regulation of e-cigarettes
Dr. Kerstin STEPAN. Drugs - Cosmetics; Drugs - Food; Biocides, Federal Institute for
Drugs and Medical Devices (Bundesinstitut für Arzneimittel und Medizinprodukte, BfArM). (DE)

Finland: new regulation of e-cigarettes
Dr. Kristiina PELLAS, Senior pharmaceutical inspector, Finnish Medicines Agency. (FI)
Part 3
Scientific information: clinical and research findings

13.50 - 13.55
Electronic Nicotine Delivery Systems – a known unknown
Prof. Francesco BLASI. President of the European Respiratory Society.

13.55 - 14.00
Cardiovascular effects of tobacco. Long-term effects.
Focus on e-cigarettes.
Dr. Charlotta PISINGER, Research Centre for Prevention and Health, Copenhagen. (DK)

14.00 - 14.05
Understanding nicotine addiction
Dr. Jean-Francois ETTER, Faculty of Preventative Medicine in the University of Geneva.

14.05 - 14.30
Q&A

Part 4
The voice of consumer associations

14.30 - 14.35
"Interessengemeinschaft E-Dampfen" (IG-ED), German e-cigarettes users association
Mr. Hans Christian HOLY. (DE)

14.35 - 15.25
General Discussion

15.25 - 15.30
Conclusions

15.30 Closing
ANNEX 2: SHORT BIOGRAPHIES OF EXPERTS

Mr Martin Seychell

A graduate in chemistry and pharmaceutical technology, Mr. Seychell specialized in Chemical analysis. He has held important positions on several government boards and commissions in Malta, including the Food Safety Commission and the Pesticides Board. Mr Seychell occupied the post of Head of Directorate at the Malta Standards Authority between 2001 and 2006. He has been responsible for the implementation of a number of EU directives in the areas of risk assessment, food safety, chemicals and cosmetic products legislation, and has actively participated in negotiations on major technical proposals such as the new chemicals legislation, REACH, and in screening processes in the areas of free movement of goods, environment and agriculture during the process leading to Malta's accession to the EU. He held the post of Director of Environment in Malta between 2006 and 2011. As Director, he was responsible for a broad range of functions arising from the Maltese Environment Protection Act. He was appointed Deputy Director General for Health and Consumers at the European Commission in March 2011.

Dr Roberto Bertollini

Dr Roberto Bertollini, M.D., M.P.H. is the WHO Representative to the EU in Brussels and the Chief Scientist of the WHO Regional Office for Europe. Before this assignment, he was the coordinator of the Evidence and Policy for Environment and Health unit of the WHO Department of Public Health and Environment in Geneva (2007-2010), the Director of the WHO EURO Special Programme on Health and Environment in Copenhagen, Rome and Bonn (2004-2007), the Director of the Division for Technical Support "Health Determinants" at the WHO Regional Office for Europe based in Copenhagen (2000-2004) and the Director of the Rome Division of the WHO European Centre for Environment and Health (1993-2004). Before joining the WHO he had worked at the Epidemiology Unit of the Lazio Region of Italy.

Dr Bertollini holds a degree in medicines and a postgraduate degree in paediatrics, as well as a Master in Public Health. During his career he has been involved in the development of the public health agenda at both European and global levels.

Dr Bertollini is highly interested in topics that concern the effects of social, environmental and behavioural determinants to human health. He is the author of many public health related scientific books and articles.

Mr Jeremy Mean

Jeremy Mean is the Access and Information for Medicines and Standards Group Manager in the Vigilance and Risk Management of Medicines Division (VRMM) of the UKs Medicines and Healthcare Products Regulatory Agency. Jeremy is a career civil servant, having joined the service in 1984, and has worked in a succession of policy and management posts in the UK’s Department of Health. Within the MHRA, Jeremy’s current role includes operational policy and delivery through teams covering advertising standards, patient information, reclassification of legal status and outreach and education functions. Jeremy also leads project groups on a range of high profile issues, covering both UK and EU policy.
Dr Kristiina Pellas

Kristiina Pellas works since 2007 as a Senior Pharmaceutical Inspector for Finnish Medicines Agency FIMEA (www.fimea.fi) in Helsinki Finland with a focus on borderline classification issues and regulation of advertising of medicines. She has wide experience in classification decisions in national and Nordic level.

She received her Master of Science degree in Pharmacy (Drug Information) from the University of Kuopio in Finland in 1988. During 1990 - 2007 she worked for the Pharmaceutical Information Centre in Helsinki as a publication pharmacist and education manager. She has produced training courses and e-learning programs related to regulation issues in RA, GMP and GCP and promotion of medicines for pharmaceutical companies in Finland.

Electronic cigarettes and nicotine liquids have been an on-going topic in borderline classification procedures since 2008 in Finland. During these years FIMEA has made statements for the customs and other authorities in classifying nicotine liquids for e-cigarettes as medicinal according to the effect and pharmacological mechanism of action of nicotine in human body.

Dr Kerstin Stephan

Born 1969
1988-1993 Studies of chemistry and pharmacy
1994 Pharmacist License
1996-1999 scientific research at the Institute for pharmaceutical Chemistry University Bonn and at the Institute for Pharmacology, University Cologne
1999 Doctorate (Dr.rer.nat)
2001-2005 assessor validation unit, Federal Institute for Drugs and Medical Devices
2006- today Head of subunit “General inquiries and Demarcation” of the validation unit
Since 2009 Member of the Borderline and Classification MDEG of the European Commission
Since 2010 Member of the Medical Device – Medicinal Product ad hoc Working group on borderline cases of the European Commission

Prof. Francesco Blasi

Francesco Blasi, MD, is Professor of Respiratory Medicine, Vice-chairman Department of Pathophysiology and Transplantation University of Milan, Director of Respiratory Diseases Unit IRCCS Fondazione Cà Granda Ospedale Maggiore Milan, Italy.
Professor Blasi is President of European Respiratory Society (ERS) 2012-13.
Professor Blasi has published more than 180 papers in international journals. He is member of the Editorial Boards of Pulmonary Pharmacology and Therapeutics (Associate Editor), Respiratory Research (Associate Editor), Clinical Respiratory Journal (Associate Editor), Therapeutic Advances in Respiratory Disease (Associate Editor), American Journal Respiratory and Critical Care Medicine (member of the Editorial Board). His research interests include the effects of atypical bacteria infection on cellular immunity in chronic bronchitis, and the role of atypicals and viral infection in asthma onset. He is also interested in the role of antibiotics in the treatment of COPD exacerbations and asthma. He is also actively working on pneumonia and tuberculosis research trials. Prof Blasi has served on ERS-ESCMID guidelines on LRTIs and is member of the European Respiratory Society, The American Thoracic Society and the Italian Respiratory Medicine Society (SIMeR).
Dr Charlotta Pisinger

January 1988 Medical doctor, University of Copenhagen
October 2004 Ph.D., University of Copenhagen
June 2007 Master of Public Health, University of Copenhagen
September 2009 Associate professor at University of Copenhagen, Faculty of Medical Science, MPH (Master of Public Health).
February 2011 Approved as qualified for Professorship
Scientific Theses
MPH (Master of Public Health) thesis, “High risk strategy in smoking cessation is on a population based level. The Inter99 study”. Defended June 2007
Total number of published peer-reviewed papers: 53 (18 as first author, 5 as last author)
Position of trust (selected)
Vice-president of Danish Society on Epidemiology
President of Danish Society on Tobacco Research (2005-2010)
Member of the steering committee of the Inter99 study
Member of the Health Committee, Medical District Association, Copenhagen County (2005-2007)

Dr Jean-François Etter

Jean-François Etter is professor of public health at the Faculty of Medicine of the University of Geneva in Switzerland. He obtained a PhD in political science and a master degree in public health from the University of Geneva. He is an internationally recognized expert in the study of tobacco dependence and the development and evaluation of interventions to prevent smoking. He is a pioneer in research on electronic cigarettes, a new nicotine delivery system. He is also a pioneer of individualized interventions and automated support for behaviour change using the Internet and applications on mobile devices. He was one of the first to explore some new indications for nicotine replacement therapy, including the reduction of tobacco use among smokers who did not want to stop.

Mr Hans Christian Holy

Hans Christian Holy is a forwarding agent working in a transport company organising transports of sensitive goods e.g. pharmaceuticals and food from and to Greece. Part of his assignment is sales and distribution. Mr Holy made his general qualification for university entrance in 2002, finished his apprenticeship in 2004 and is since then working in the transport business. He is married and father of a son and committed to the IG-ED since June 2012. Recently he inherited the responsibility for running the treasury and therefore will be part of the executive board.
ANNEX 3: SUMMARIES AND PRESENTATIONS
Presentation by Dr Roberto Bertollini

Latest evidence from WHO on Electronic cigarettes

Roberto Bertollini MD MPH

Presentation Roadmap

- What are ENDS
- Scientific Evidence
- Global Availability
- WHO’s Position
What are ENDS?

Electronic Nicotine Delivery Systems

- Designed to deliver nicotine to the lungs
- First marketed in 2004
- Battery powered
- Deliver a vaporized propylene glycol /nicotine mixture into respiratory system
- Contain tobacco-derived substances, but tobacco is not necessary for operation
- Often offered in flavors that are attractive to adolescents
E-Cigarettes

- Prototype of ENDS
- Three main components:
  - Smart chip + lithium ion battery (rechargeable)
  - Nicotine cartridge
  - Atomization chamber
- Liquid vaporized and then inhaled by user
- Do not generate smoke associated with conventional tobacco cigarettes

Scientific Evidence
Recent Findings on Toxicity

- At least 10 toxicants can be identified and quantified in electronic cigarettes\(^1\), including known carcinogens and diethylene glycol, an ingredient used in antifreeze.
- In Turkey, propylene glycol (which is potentially toxic) was found in all ENDS samples, tobacco specific N-nitrosamines (powerful carcinogens) in a majority of samples\(^2\).
- E-cigarettes release toxins into the air, including acetic acid, acetone, isoprene, formaldehyde and acetaldehyde, averaging around 20% of what the conventional cigarette produces\(^3\).
- All e-cigarettes that the FDA has detained and examined meet the definition of a combination drug-device product under the Federal Food, Drug, and Cosmetic Act\(^4\).

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2. FAME Laboratory, Institute of Human Performance and Rehabilitation, Center for Research and Technology, Thessaly, Trikala, Greece
3. Indoor Air, Germany

---

Nicotine content and toxicity

- Similarly labeled ENDS cartridges were found to emit very different amounts of nicotine\(^1\).
- This is dangerous because nicotine overdose can have serious side effects\(^2\).

### Table 2. Summary of features following acute exposure to nicotinic and nicotinic-like alkaloids

<table>
<thead>
<tr>
<th>Gastrointestinal</th>
<th>Respiratory</th>
<th>Cardiovascular</th>
<th>Neurological</th>
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</thead>
<tbody>
<tr>
<td>Early phase</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nausea</td>
<td>Bronchorrhea</td>
<td>Hypertension</td>
<td>Miosis</td>
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<tr>
<td>Vomiting</td>
<td>Tachypnea</td>
<td>Tachycardia</td>
<td>Dizziness</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td></td>
<td>Palor</td>
<td>Headache</td>
</tr>
<tr>
<td>Salivation</td>
<td></td>
<td></td>
<td>Ataxia</td>
</tr>
<tr>
<td>Delayed phase</td>
<td></td>
<td></td>
<td>Confusion</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Respiratory depression</td>
<td>Bradycardia</td>
<td>Tremors</td>
</tr>
<tr>
<td></td>
<td>Dyspnea</td>
<td>Hypotension</td>
<td>Muscle fasciculations</td>
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<tr>
<td></td>
<td>Apnea</td>
<td>Dysrhythmia</td>
<td>Seizures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shock</td>
<td></td>
</tr>
</tbody>
</table>

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1. FAME Laboratory, Institute of Human Performance and Rehabilitation, Center for Research and Technology, Trikala, Greece
Additional Concerns

There are no published studies demonstrating the efficacy and safety of long term use of ENDS

There is no data to confirm ENDS have cigarette mimicking sensory characteristics when heated and delivered to the lung

The precise nature and the quantity of constituents in the emissions of ENDS are unknown

There is a potential for nicotine poisoning from sale of nicotine refill vials

Even More Additional Concerns

• Without regulation, electronic cigarette smoking will be normalized and glamorized like cigarette smoking

• People who consider quitting cigarette smoking will develop a new habit and possibly relapse to conventional cigarettes

• E-cigarettes are promoted for the occasions when one cannot smoke; this would defy smoke-free ordinances

• There is no knowledge about the levels of carcinogens in the second-hand smoke which would increase exposure of non-smokers
Global Availability

Current use and experience

- European Union- the use of electronic cigarettes has grown markedly in recent years: 7% of citizens have at least tried electronic cigarettes
- Australia- ENDS avoid plain packaging laws and glamorize electronic cigarette use
- United Kingdom- Loophole in regulation only covers ENDS if they contain nicotine. Electronic cigarettes without nicotine are commonly sold
- Trends and limited regulation suggest that e-cigarette use will continue to grow despite limited understanding of the product’s characteristics
Tobacco Industry Involvement

- Philip Morris International has three prototypes that more resemble a traditional cigarette that heats and does not burn.
- Lorillard Inc. acquired a maker of electronic cigarettes for $135 million.
- R.J. Reynolds has begun production on a new electronic cigarette.
- By the acquisition of e-cigarettes, major cigarette manufacturers are signaling that they believe this is the next frontier for their companies.
- Without regulation, tobacco companies will use their unparalleled knowledge and resources to produce and market e-cigarettes.

WHO Findings: Questionnaire to Parties of the FCTC

- ENDS were available in about half of respondent Parties.
- E-cigarettes were the most common form of ENDS available (followed by e-cigars).
- All countries reporting electronic cigarettes were available were high-income or middle-income countries.
- Of the Parties that stated that ENDS are not available for sale in their jurisdictions, only 4 had laws banning the manufacturing, importation, distribution, and sale of ENDS.

1. Brazil, the Seychelles, Singapore and Uruguay
**AVAILABILITY AND REGULATION OF ENDS IN PARTIES**

<table>
<thead>
<tr>
<th>Regulated (including banned)</th>
<th>Unregulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a tobacco product</td>
<td>Regardless of whether or not contain nicotine or make health/therapeutic claims</td>
</tr>
<tr>
<td>As a product with health/therapeutic claims</td>
<td>Only if do not contain nicotine and/or no health/therapeutic claims are made</td>
</tr>
<tr>
<td>Contains nicotine</td>
<td>Does not contain nicotine</td>
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</table>

<table>
<thead>
<tr>
<th>Available</th>
<th>Hungary</th>
<th>United Kingdom of Great Britain and Northern Ireland</th>
<th>Bulgaria, Ireland, Lithuania, Malaysia, Portugal, Romania, Serbia, South Africa, Trinidad and Tobago</th>
<th>Australia, Belgium, Canada, Germany, Hungary, New Zealand, United Kingdom of Great Britain and Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium, Republic of Korea</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Not available</th>
<th>Australia, Belgium, Canada, Germany, New Zealand, Norway, Turkey</th>
<th>Japan, Uruguay</th>
<th>Ghana, Kuwait, Latvia, Mauritania, Rwanda</th>
<th>Australia, Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhutan, Brazil, Norway, Seychelles, Singapore, Uruguay</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

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Inconsistent and incomplete regulation in many countries

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**WHO’s Position**

📅 16 📅
WHO FCTC

- ENDS are currently not regulated under the Framework Convention of Tobacco Control
- However, ENDS undermine Articles 6 (taxation), 8 (second-hand smoke) and are exempted from Article 11 (plain packaging laws) of the FCTC
- Regardless of whether they are covered by the treaty, ENDS may normalize smoking, encourage dual use and by pass smoking ban in public places
- ENDS should be subject to regulation as tobacco products and as medicinal products

Conclusions and Recommendations

- ENDS contain toxic chemicals. Their safety and impact on smoking cessation and on health has not been assessed.
- Increasing use without full assessment of consequences signals that regulations are necessary
- WHO suggests ENDS should be regulated through a two-pronged approach as both tobacco products and as medicinal products to prevent a situation in which loopholes are exploited and ENDS escape control
- Claims implying health benefits, less harm than cigarettes, or smoking cessation efficacy should not be allowed unless proven
- Burden of research demonstrating safety, efficacy, and efficiency should be on manufacturers and producers of ENDS (similar to pharmaceutical products)
**Summary and presentation by Prof. Francesco Blasi**

The European Respiratory Society (ERS), is a professional medical organisation with members in over 100 countries across the globe representing medical and scientific experts in the field of respiratory medicine and lung science. The annual congress attracts over 20,000 professionals from Europe and beyond. ERS is principally concerned with protecting the health of EU citizens.

Electronic Nicotine Delivery Systems (ENDS) are designed to deliver nicotine to the respiratory system. There has been a significant increase in EU distribution & sales of these products since their arrival on the market.

The scientific evidence on the potential benefits and/or risks of these products is inconclusive. In particular, the long-term effects are unknown. More evidence is needed – on the positive or negative effects of these products. Until we know more we should act with caution.

The Article 14 guidelines of the UN – WHO Treaty state that countries should prioritise cessation (quit) treatments “strongly based on scientific evidence”. Any regulation of electronic nicotine delivery systems should be science based. It is important that we have independent EU-supported research into these products. This should include medium- and long-term independent clinical trials, behavioural studies and individual/population level post-marketing studies.
ERS

European Parliament – (E-Cigarettes) Workshop 7th May 2013:

Electronic Nicotine Delivery Systems – a known unknown

Prof. Francesco Blasi
President of the European Respiratory Society
There are **known knowns** - things we know that we know.

There are **known unknowns** - things that we know we don't know.

But there are also **unknown unknowns** - things we don't know we don't know.”

Donald Rumsfeld – former US Defence Secretary

---

**WHAT WE KNOW**

- **ENDS** - Electronic Nicotine Delivery Systems are designed to deliver nicotine to respiratory system.

- Multiple brands are marketed under a variety of terms such as “electronic cigarettes” or “e-cigs”

- Significant increase in EU distribution & sales of these products since arrival on market around 2006-7.

- ENDS typically consist of propylene glycol, nicotine & flavourings.
WHAT WE DO NOT YET KNOW

• Effects on the lung?

• Extent of nicotine uptake?

• Emissions & health impacts of the vaporisation compounds?

• Other potentially harmful chemicals?

• Overall - health benefits and/or risks or long-term effects?

DUTY OF CARE

• Where scientific evidence is insufficient, inconclusive or uncertain;

• Leading to reasonable grounds for concern;

• Where there are potentially dangerous effects on humans;

• The precautionary principle should apply in order to manage risks.
SOLUTIONS

We need independent EU supported research:

• Independent Clinical trials

• Behavioural & psychological studies

• Post-marketing studies at individual & population levels across Europe

• Any regulation must be science based and in line with UN Treaty – WHO Framework Convention on Tobacco Control
Summary and presentation by Dr. Charlotta Pisinger

- Our knowledge of e-cigarettes is comparable to the knowledge we had of smoking 100 years ago.
- Our fear is that there is a time delay in health consequences, just like with cigarettes – it might take decades before we see the health damage.
- Unfortunately, we are not able to give an estimate of the long-term consequences of e-cigarettes on the cardiovascular system.
- Apart from nicotine, both toxic and carcinogenic components have been found in e-cigarettes. The inhaled vapour undergoes changes in the human lung, and accumulation of toxins can occur over many years.
- Some small experimental studies of the acute effects of e-cigarettes show increased heart beat and blood pressure – others don't.
- This probably reflects that both the dosage of nicotine and the content of other chemicals vary markedly across the products.
- The US Food and Drug Administration have received an increasing number of adverse events, including cardiovascular events, experienced during use of e-cigarettes.
- Eight out of ten e-cigarette users report negative symptoms.
- The most frequent symptom from the cardiovascular system is chest pain.
- Light cigarettes were sold as ‘safe’ but turned out to be extremely harmful. Today e-cigarettes are sold as ‘safe’.
- Is ‘harm reduction’ good enough? Don’t we want smokers to quit?
- There is no scientific evidence that e-cigarettes are effective in helping smokers to quit.
- Kids are fast learners, and we are their role models. They can’t see the difference between smoking and vaporizing of e-cigarettes.
- The European Society of Cardiology proposes that e-cigarettes must be tightly regulated by national and EU authorities, preferably as both a tobacco and a medical product.
Electronic cigarettes
Let’s not repeat the errors of the past
Charlotta Pisinger
PhD MPH Ass Prof Consultant
E-mail charlotta.pisinger@regionh.dk
Research Center for Prevention and Health
Capital Region of Denmark

Conflict of interest

- I have nothing to declare
Our knowledge of e-cigarettes = as of smoking 100 years ago

- People have used e-cigarettes for a few years
- Users are often in their 30s and 40s
- At this age, incidence of cardiac disease is very low

Time delay of health consequences

[Graph showing the time delay of health consequences for e-cigarette users and related disease/death]
Fortune telling

We need hundreds of thousands of users and many more years of use in order to see any *long-term effects* of e-cigarette on cardiovascular health.

Safety concerns

- Components found: nicotine, toxins and carcinogens
- Mostly only ‘traces’ of toxins but the inhaled aerosol undergoes changes in the human lung.
Acute effects on the heart
Small experimental studies

Some studies: significantly increased
- Plasma nicotine
- Heart rate
- Blood pressure

Other studies: no significant effect
- Plasma nicotine
- Heart rate
- Blood count markers

Misleading information on product ingredients

- This probably reflects that both the dosage of nicotine and the content of other chemicals vary markedly across the products
- Poor consistency between actual nicotine content and the amount labeled
- Labels ‘without nicotine’ contains nicotine
US Food and Drug Administration

- Increasing number of adverse events reported
- Many with causal relationship
- Reported cardiovascular events:
  - Rapid heartbeat
  - Chest pain
  - Hypotension
  - Hospitalisation for congestive heart failure...

Analysis of original posts from three online e-cigarettes forums

405 self-reported symptoms

- Positive: 81%
- Negative: 19%

Self-reported symptoms from the chest

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest pain</td>
<td>45%</td>
<td>0%</td>
</tr>
<tr>
<td>Tightening</td>
<td>35%</td>
<td>0%</td>
</tr>
<tr>
<td>Pressure</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>Burning</td>
<td>40%</td>
<td>0%</td>
</tr>
<tr>
<td>Congestion</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The ‘light’ catastrophe

Considering all I’d heard, I decided to either quit or smoke True.
I smoke True.

The low tar, low nicotine cigarette. Think about it.
Less toxic than cigarettes

- “Harm reduction” - is that good enough?
- We want smokers to quit
- It takes time but it is possible

Three out of four smokers wish to quit

- Cardiovascular disease: the Nº1 killer in Europe, the death of 1.9 million EU citizens yearly
- Smoking causes 28% of CVD deaths
Smoking cessation efficacy

- A nationally representative cross-sectional survey of almost 2000 current or recently former adult smokers
- 4 out of ten had tried an alternative tobacco product, most frequently e-cigarettes
- Use was not associated with successful quit attempts
- Alternative tobacco products are attractive to smokers who want to quit smoking, but we need evidence that e-cigarettes promote cessation


Kids are fast learners – they can not see the difference
European Society of Cardiology Proposal

- Let’s not repeat the errors of the past (cigarettes, light cigarettes)
- We need scientific evidence on safety and efficacy
- E-cigarettes must be tightly regulated by national/EU authorities as both a tobacco and a medical product
- If shown to be efficacious and safe, e-cigarettes could be an alternative smoking cessation aid to standard nicotine products
Summary and presentation by Prof. Jean-François Etter

Addiction is the compulsive use of a substance in spite of the adverse consequences for the user’s health, family and social life. Even if e-cigarettes were used compulsively, the « adverse consequences » element would still be lacking, since the long-term toxicity or safety of e-cigarettes is not yet documented.

Studies show that e-cigarettes can deliver substantial amounts of nicotine to the blood, and some vapers (maybe not all of them) can obtain from e-cigarettes the same amounts of nicotine that they obtained from tobacco when they were smoking. Furthermore, surveys show that almost all vapers are former and current smoker, and that 97% to 100% of them use nicotine-containing e-cigarettes. Thus, e-cigarettes indeed are nicotine-delivery devices.

It is important to understand that the addictiveness of a substance depends on the speed of its delivery to the blood and brain. Nicotine is highly addictive when smoked, a few former smokers are addicted to the nicotine gum, but nicotine patches are not addictive. The speed of nicotine delivery with e-cigarettes is quicker than for the nicotine gum or inhaler, but slower than for cigarettes.

Are e-cigarettes addictive?

This is not yet documented, but it is possible. The comparison of speeds of nicotine delivery suggests that e-cigarettes should be less addictive than cigarettes, but possibly more addictive than nicotine gums. Surveys of vapers also suggest that addiction to e-cigarettes is weaker than addiction to tobacco, but this need confirmation.

Thus, some former smokers, who were already addicted to nicotine, are probably compulsive users of e-cigarettes. However, compulsive use of e-cigarettes can be treated, probably more easily than addiction to tobacco, with nicotine patches, which are not addictive, with the smoking cessation drug varenicline, and with the help of a doctor, a psychologist or a specialized nurse.

Is it a public health problem?

Even if e-cigarettes were used compulsively by some former smokers, long-term vaping is much safer than smoking, and can be helpful if it helps people quit smoking and avoid relapse. A comparison can be made with nicotine gums. About 1% of smokers who quit smoking with nicotine gums remain addicted to these gums, but this is not a public health problem, and nicotine gums are sold without a medical prescription.

Are e-cigarettes a gateway to smoking in adolescent non-smokers?

This argument is often used by e-cig opponents, but it is not supported by data. A few surveys show that some adolescents use e-cigs, but addiction to e-cigs in adolescents has never been documented. Furthermore, fruit-flavoured nicotine gums are not a gateway to smoking in adolescent non-smokers. Nevertheless, research is needed on the use of e-cigs by adolescents.

Are e-cigarettes used to inhale illicit drugs?

E-liquids with artificial cannabis flavours are available online, and some models of e-cigs are advertised for use with cannabis leaves. In published surveys, very few vapers admitted to using e-cigs to inhale cannabis. The use of e-cigarettes to inhale heroin or cocaine has never been documented.

Perspectives

Research is urgently needed to document the safety, toxicity and efficacy of e-cigarettes, their addictiveness, and their use by non-smokers.
Addictiveness of e-cigarettes

- Jean-François ETTER, PhD
  Professor of public health
  Faculty of Medicine
  University of Geneva, Switzerland

- EU Parliament
- 7 May 2013

Addiction

- Definition:
  Compulsive use in spite of adverse consequences for the user's health, family and social life

- The « adverse consequences » element is lacking for e-cigs
### Do e-cigs deliver a satisfactory amount of nicotine?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>30</td>
</tr>
<tr>
<td>Daily e-cig users</td>
<td>97%</td>
</tr>
<tr>
<td>Used tobacco or NRT in past 48h</td>
<td>0</td>
</tr>
<tr>
<td>Puffs / day on e-cigs (median)</td>
<td>200</td>
</tr>
<tr>
<td>Cotinine in saliva, median 25th / 75th percentiles</td>
<td>322 ng/ml 138 / 546 ng/ml</td>
</tr>
</tbody>
</table>

*In the literature: in ex-smokers who use NRT:* 100-250 ng/ml

Etter JF, Bullen C. *Eur Respir J.* 2011 Nov.

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**1A**

**Plasma Nicotine**

<table>
<thead>
<tr>
<th>ng/ml</th>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
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**1B**

**Heart Rate**

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<tr>
<th>Beats per minute</th>
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**1C**

**QSU Factor 2**

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</table>

**1D**

**Urge to Smoke a Cigarette**

<table>
<thead>
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<th>Subject Ratings (VAS)</th>
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</tbody>
</table>
Addictiveness

- Surveys of vapers:
  - Vapers are former and current smoker
  - 97% to 100% of vapers use nicotine-containing e-cigarettes

- Thus, e-cigs are nicotine-delivery devices

- Addictiveness depends on the speed of delivery to the blood
- Nicotine is highly addictive when smoked
- Some users are addicted to the nicotine gum
- Nicotine in patches are not addictive

- Speed of delivery for e-cigs: quicker than for nicotine gum or inhaler, but slower than for cigarettes

Are e-cigarettes addictive?

- This is not yet documented, but it is possible

- Some former smokers who were already addicted to nicotine probably use e-cigarettes compulsively

- Surveys suggest that addiction to e-cigarettes is weaker than addiction to tobacco (but this need confirmation)

- Compulsive use of e-cigarettes can be treated
  - with nicotine patches, which are not addictive
  - with varenicline
  - and counseling by a clinician
Is it a public health problem?

- Adverse consequences of long-term vaping are not yet documented
- But long-term vaping is much safer than smoking
- E-cigs help people quit smoking and avoid relapse
- Compulsive use of e-cigarettes can be treated, probably more easily than addiction to tobacco
- Comparison with nicotine gums:
  - 1% of smokers who quit smoking with nicotine gums remain addicted to these gums, but...
    - this is not a public health problem
    - nicotine gums are sold without a medical prescription

Gateway to smoking in young non-smokers?

- Argument used by opponents, but this is not supported by data
- Surveys show that some adolescents use e-cigs, but addiction to e-cigs in adolescents has never been documented
- Fruit flavored nicotine gums are not a gateway to smoking in adolescent non-smokers
- Need for research on use of e-cigs by adolescent non-smokers
Are e-cigs used to inhale illicit drugs?

- E-liquids with artificial cannabis flavor are available online
- Some e-cigs are advertised for use with cannabis leaves
- Survey: very few vapers admit to using e-cigs to inhale cannabis
- Heroin or cocaine? Not documented

Perspectives

- Research is urgent
- Safety?
- Efficacy?
- Addictiveness?
- Use by non-smokers?
Presentation by Mr Hans Christian Holy


Contents:
- The Miracle Drug that cures the Addiction it’s suspected to cause
- The Unsafe Haven
- Nicotine Guessworks
- The Horror in small Bottles
- Fairy Tales of Minors and Adolescents
- Legal Impossibilities
- Fight 600,000 EU Tobacco Smoking Deaths
- Vapour, Lies and Nitrosamines
- Knowing one Teddy Bear is knowing all Teddy Bears

The Miracle Drug that cures the Addiction it’s suspected to cause

- E-Cigarettes are just an alternative to the tobacco cigarette.
- We are not planning to stop anything and do not plan to change our behavior.
- E-cigarettes cannot be a medicinal product. As by definition a medicinal product has the goal to cure, the e-cigarette is not curing anything, but rather replacing a proved harmful addiction with a far less dangerous enjoyment.
- Imagine to replace coffee with tea in case you have a weak stomach.

There are already many studies and investigations concerning the e-cigarette. Unfortunately, they are mostly ignored or interpreted negative – even if they prove that e-cigarettes are much safer than tobacco cigarettes. By purpose?
The Unsafe Haven

- Where is the prove that an e-cigarette respectively the e-liquids are safer if we buy them in the pharmacy or as medicinal product? Really, anyone who can please tell us.

- Reality is in big contrast to this thoughtless suggestion: a pharmaceutical product does not need any dangerous substance markings. Did you really think about this?

- “It’s medicine and I bought it in the pharmacy, so it must be safe and I do not need to be cautious.” Is this really better?

But anyway, the e-cigarette cannot be a pharmaceutical product as stated earlier. It is not for withdrawal and does not cure anything.

Nicotine Guessworks

- There is not any evidence for the addictiveness of nicotine standing alone.

- On the other hand there are studies [also from EU-institutes] which nourish the perception that the addictiveness of nicotine alone is insignificant

- Where is the evidence that nicotine alone is the addiction-critical substance?

Again, repeating and repeating non-proven arguments will not make them true. Is this done by purpose?
The Horror in small Bottles

- Nicotine is **safe in the usual concentrations**. There is also enough tolerance by far for not completely perfect devices (they will never be, may it be in a pharmacy or wherever).

- Eating tobacco is as dangerous as drinking e-liquid. Or eating **grated nutmegs**. Or drinking **toilet cleaner** (in nice colourful designed bottles, perfectly suitable for children).

- Harmful substances are **already regulated** within the EU.

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The Fairy Tale of Minors and Adolescents

- We see **no proofs or even indications** for the often repeated argument that minors start using nicotine with e-cigarettes.

- There are **often repeated rumours** telling 9 percent of Hungarian minors had contact to e-cigarettes in any way. We saw **no evidence** and we do not believe this until there is any clear evidence.

- We use **E-Cigarettes since years** and do not know any minor or adolescent who startet using nicotine with an e-cigarette.

- A big majority have been **smoking tobacco for a long time** and are definitely no minors.

- **E-cigarettes are not “cool” at all, expensive @ start, and annoy with a rather intricate handling.**

> Why are unproved statements repeated so often? By purpose? Repeating does not make a lie more true.
Legal Impossibilitites

- E-Cigarettes and E-Liquids must not be regulated in the Tobacco Products Directive as they contain no tobacco at all. The pure nicotine can synthesised as well and it will then be exactly the same substance. Coca-Cola is no Coffee.

- It is absolutely illegal to force a product which is proven to be so much less harmful into stricter regulations than the tobacco cigarette which is available almost everywhere.

- The European Citizen has the right for his own self-responsibility. How dare you taking this basic right away from the vapers? We harm no others!

Everyone including the Commission knows that the Directive will probably fail at court later with regard to e-cigarettes. But they ignore this. By Purpose?

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Fight 600,000 EU Tobacco Smoking Deaths

- E-cigarettes could help to reduce 600,000 deaths from tobacco smoke each year in Europe.

- But this will not work in the pharmacy resp. as a pharmaceutical product. The planned regulation will kill the e-cigarette as it is known today. It will be like a nicotine gum – without any attractivity for smokers to change over.

- They are a means for enjoyment and stimulation - very similar to a cup of coffee - and exist due to their freedom of availability, taste and the big variety of flavours. This will all be gone as a pharmaceutical product. The consumers, the citizens of Europe do not want this to happen!

- We should not miss this great chance for harm reduction!

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Vapour, Lies and Nitrosamines

- Despite of their highly sophisticated testing methods the FDA was not able to quantify the nitrosamines they found in a few e-liquids.
- To determine the content of nitrosamines they need 21-75 ppb. To just tell that nitrosamines are in you need about half of this.
- Further publication of the FDA results was forbidden by a US court.
- Following that FDA-study, 1 ml of e-liquid contains:
  - up to 40 times less than the pharmaceutical product nicotine gum
  - up to 15,000 times less than one cigarette
  - Most e-liquids contain no nitrosamines at all


Knowing one Teddy Bear is Knowing all Teddy Bears

- The RAPEX-tables contain all kinds of non-food goods. Are all teddy bears dangerous because one was in the Rapid Alert System? (Not much more to say here.)

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