Global Trends in E-cigarette Use
Declaration of interest

• I have no links with any e-cigarette manufacturers

• I have received no funding from the tobacco or pharmaceutical industries

• My research is funded by Cancer Research UK, National Institute of Health Research, Roy Castle, Chief Scientist’s Office and other government and charitable bodies.
Outline

• Data Sources
• Regulatory Frameworks
• Some recent UK data
• ITC data from 13 countries
• Our research forum
Data Sources

• Questions on e-cigarettes are now included in many surveys around the world
• The number of questions and quality of the data varies a great deal
• Comparison is difficult but, arguably, our most valuable current comparative source is the ITC survey led by Professor Geoff Fong
• I’ll also highlight some other recent UK data
### Regulatory policies by selected countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Restrictions</th>
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<tbody>
<tr>
<td><strong>Canada</strong></td>
<td>- Classifies nicotine-containing e-cigarettes as new drugs under the Food and Drug Regulations. As such, there are restrictions on their sale, advertisement, promotion, sponsorship, importation and manufacturing. Products without nicotine are not regulated.</td>
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| **Australia**    | - Classifies nicotine as a restricted poison if it is not used for therapeutic purposes.  
- Non-nicotine e-cigarettes are classified as legal consumer products.  
- The sale and marketing is prohibited, though according to a statement import for personal reasons may be permitted under certain instances.  
- Advertising, promotion and sponsorship, as well as recreational use of is inherently prohibited since the marketing of these products is banned. |
| **Brazil**       | - Classified as tobacco products.  
- A resolution prohibits the sale, advertisement, distribution and importation of e-cigarettes.  
- As tobacco products, their use in public places and public transportation is prohibited. |
| **Mexico**       | - Prohibits the sale, distribution, exhibition, promotion or manufacture of an object that imitates a tobacco product. These prohibitions are specific to nicotine-containing e-cigarettes. |
| **Uruguay**      | - Sale and TAPS of all types of e-cigarettes is banned; less available |
| **Malaysia**     | - Nicotine is classified as a class C poison under the Poisons Act and Control of Drugs and Cosmetics Regulations.  
- Devices without nicotine are classified as electrical appliances.  
- The sale, distribution or importation of unlicensed nicotine-containing e-cigarettes is prohibited.  
- The Poisons Act also forbids the sale or supply of poisons to people under 18.  
- Nicotine-containing e-cigarettes can only be sold by licensed pharmacies or registered medical practitioners. |
| **United Kingdom** | - Few restrictions, widely available  
- Classifies e-cigarettes as consumer products, thus subject to the European Union’s consumer products laws.  
- There are advertising restrictions in place to limit them being seen by children or appealing to youth |
| **Netherlands**  | - Classified as consumer products, thus subject to the European Union’s consumer products laws.  
- The advertisement of all forms of e-cigarettes is banned according to the Electronic Cigarette Temporary Commodities Act.  
- The Act also limits the nicotine concentration to 20 mg/mL, limits e-cigarette cartridges to 10 mL (2 mL for cartridge), requires childproof e-cigarettes and refill packs and stipulates that packs display relevant product information, including a warning on the addictive nature of nicotine on 30 percent of the two major surfaces of any outside packaging. |
| **United States** | - No federal laws are present.  
- 43 states and many municipalities regulate e-cigarettes by restricting youth access and/or banning use in public places. |
| **Republic of Korea** | - Nicotine-containing e-cigarettes are classified as tobacco products and thus their sale is banned to minors (under 19) Their use is banned in public places and transport with the exception of designated smoking areas.  
- Nicotine-containing e-cigarettes can only be featured a maximum of 10 times in magazines.  
- These products are under a special health tax, proportional to 1,799 won/mL nicotine liquid. |
| **China**        | - No restrictions.  
- E-cigarettes are not (domestically) widely available due to control of tobacco products by the China National Tobacco Company. |
| **Bangladesh**   | - No e-cigarette policies |
| **Zambia**       | - No e-cigarette policies |

Note: The above restrictions were in place at the time of data collection for the ITC survey. Some countries may have changed regulations at some point thereafter. TAPS: advertising, promotion or sponsorship. Information in the table was provided by John Hopkins Bloomberg School of Public Health.
About the ITC Project

- First-ever international cohort study of tobacco use
- 28 countries: > 50% of the world’s population
  > 60% of the world’s smokers
  > 70% of the world’s tobacco users
- Large range of research domains covered, but unique focus on evaluating the impact of FCTC policies
  - Methods (cohort design) and measures (survey questions) allow for rigorous evaluation of FCTC implementation
- Global evaluation system to complement existing surveillance systems (e.g., GATS)
ITC Project Data on E-Cigarettes

Objective:
To present the most recent data (where available) from the International Tobacco Control (ITC) Policy Evaluation Project on:

1. Self-reported e-cigarette awareness;
2. E-cigarette trial (ever use); and
3. Frequency of current use

Methods:
Data from 13 countries surveyed between 2013 and 2016 and that differ by e-cigarette policy/regulation

- More restrictive
- Less restrictive
ITC Methods

- Cross-sectional analysis of nationally representative samples of adult (≥ 18 years) current and recent former smokers
  - Current smokers were those who reported having smoked at least 100 cigarettes in their lifetime and who had smoked at least one cigarette in the past 30 days; recent former smokers were those who had quit smoking within the last 12 months of completing the survey.

- Surveys: administered either via telephone (T), face-to-face interviews (F), or the web (W).

- All estimates are weighted

- Measures:
  - Income, education, gender age
  - Awareness of e-cigs; history: ever tried e-cigs; frequency:
  - currently use daily, weekly, less than weekly or not at all
Awareness of E-Cigarettes

Percentage of smokers and quitters who have ever heard of e-cigarettes, by country

- Australia 2014: 98%
- Malaysia 2013: 86%
- Canada 2013-14: 84%
- Mexico 2014-15: 61%
- Uruguay 2014: 51%
- Brazil 2012-13: 37%
- United Kingdom 2014: 97%
- United States 2013-14: 94%
- Republic of Korea 2016: 94%
- Netherlands 2015: 88%
- China 2013-15: 59%
- Bangladesh 2014-15: 7%
- Zambia 2014: 3%

Gravely, Fong, et al. (in progress)
Ever Use of E-Cigarettes

Percentage of smokers and quitters who have ever used e-cigarettes, by country

- Malaysia 2013: 39%
- Australia 2014: 38%
- Canada 2013-14: 37%
- Mexico 2014-15: 10%
- Brazil 2012-13: 8%
- Uruguay 2014: 7%
- United States 2013-14: 61%
- United Kingdom 2014: 58%
- Republic of Korea 2016: 44%
- Netherlands 2015: 40%
- China 2013-15: 10%
- Bangladesh 2014-15: 1%
- Zambia 2014: 0%

Gravely, Fong, et al. (in progress)
Current Use of E-Cigarettes

Percentage of smokers and quitters who currently use e-cigarettes daily, weekly, or less than weekly, by country

- Malaysia 2013: 28%
- Australia 2014: 14%
- Canada 2013-14: 10%
- Mexico 2014-15: 5%
- Uruguay 2014: 2%
- United States 2013-14: 30%
- United Kingdom 2014: 30%
- Netherlands 2015: 9%
- Republic of Korea 2016: 8%
- China 2013-15: 1%
- Zambia 2014: 0%
- Bangladesh 2014-15: 0%

Gravely, Fong, et al. (in progress)
Current Use of E-Cigarettes

Percentage of smokers and quitters who currently use e-cigarettes daily, weekly, or less than weekly, by country and smoking status

Gravely, Fong, et al. (in progress)
Daily Use of E-Cigarettes

Percentage of smokers and quitters who currently use e-cigarettes daily, by country

- Malaysia 2013: 4%
- Australia 2014: 3%
- Canada 2013-14: 2%
- Mexico 2014-15: 1%
- Uruguay 2014: 0%
- United Kingdom 2014: 8%
- United States 2013-14: 7%
- Republic of Korea 2016: 3%
- Netherlands 2015: 2%
- China 2013-15: 0%

Gravely, Fong, et al. (in progress)
ITC Project Research Organizations

ITC Project Research Support

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Latest data from England
Prevalence in smokers and ex-smokers aged 16+

Use of e-cigarettes in smokers and recent ex-smokers continues to grow slowly

N=24611 adults who smoke or who stopped in the past year; increase p<0.001
Latest data from the UK for Youth

Prevalence of electronic cigarette (e-cigarette) use in teenagers, UK surveys 2015/2016

Cross national comparisons and common questions

• The experience of the ITC survey highlights the importance of common questions across countries
• For IN COUNTRY surveys, a helpful approach would be for the research community to draw on a common dataset
• Building on ITC but also a range of other surveys, we’ve developed a list of core questions in a paper currently under review, led by Dr Jennifer Pearson
• We’re happy to share these questions with any interested colleagues
The evidence on e-cigarettes is developing rapidly with new studies published almost every week.

Led by Cancer Research UK with PHE, we have formed a national forum in the UK to keep people up to date.

We also provide a monthly evidence briefing of the latest studies from a range of countries. This can be sent to anyone, you can sign up here: http://www.cancerresearchuk.org/about-us/we-develop-policy/our-policy-on-tobacco-control-and-cancer/uk-e-cigarette-research-forum
Conclusions

• Regulatory frameworks for e-cigarettes vary significantly between countries
• Awareness of e-cigs is almost universal in developed countries but far lower in some LMICs
• Ever, current & daily use is higher in countries with less restrictive policies particularly among ex-smokers
• In the UK, e-cig use continues to rise slowly & regular use is almost entirely confined to smokers & ex-smokers
• Common approaches to data collection and research networks can help us continue to conduct studies to inform policy and practice now & in the future.
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