1. The British Lung Foundation is pleased to submit written evidence to the Science and Technology Committee’s inquiry on the health, regulatory and financial implications of e-cigarettes. We look forward to seeing the results of this inquiry and welcome all further research around issues including use by young people and children, health risks for never-smokers, and long-term health risks for all e-cigarette smokers.

Our response discusses:
- The benefits of e-cigarettes as a stop smoking tool
- The impact of e-cigarettes on human health

The benefits and risks of e-cigarettes as a ‘stop smoking’ tool

2. We believe that e-cigarettes are a welcome addition to the suite of tools available to aid smokers to quit. We want smokers to have the option to use e-cigarettes in attempts to stop smoking, and to be given accurate advice and support from healthcare professionals whilst using e-cigarettes in their quit attempt, to ensure they have the best possible chance of giving up smoking for good. If e-cigarettes are regulated more by the government in the future, regulations shouldn’t prevent people from having access to different e-cigarettes devices that work for them.

3. Recent policy developments in this area have started to promote e-cigarette use for smoking cessation. Public Health England promoted e-cigarettes in the Stoptober campaign for the first time in 2017, which came after e-cigarettes emerged as the most popular tool for quitting during their 2016 campaign.1 NICE have proposed updates to the smoking cessation interventions and services guidelines (PHG94) to clarify their position on e-cigarettes. The new draft guidelines state that all healthcare professionals share a responsibility to talk with patients about their e-cigarette use, and to support patients who choose to use e-cigarettes as a tool for smoking cessation with accurate information on the benefits and risks of their use.2 This demonstrates positive progress which we support.

4. The current most common reason for people in England using an e-cigarette is as an aid to quitting smoking (46%).3 The next most common reason was that they are perceived to be less harmful than cigarettes at 27%.4 This tells us that e-cigarettes already have a powerful role in smoking cessation and smoking-related harm reduction.

5. Smoking is a huge issue of, and contributor to, inequality. E-cigarettes may be part of the solution to addressing this inequality, as highlighted in the finding of the Smoking Toolkit Study.5 Public Health England statistics show how people in routine and manual occupations are over 2.5 times more likely to smoke (26.5%) than those in managerial and professional occupations (10.5%).6 People in the most deprived decile in England are far more likely to be current smokers (18.9%) than the least deprived (11%).7

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2 Available at: https://www.nice.org.uk/guidance/indevelopment/gid-phg94/documents
3 ONS (2016) Adult smoking habits in the UK, Opinions and Lifestyle survey.
4 Ibid.
7 Ibid.
6. Success rates for quitting smoking in England in the first six months of 2017 were higher than the average rate of the previous ten years – directly and exclusively because more people with lower socioeconomic status were successfully stopping smoking. Various factors may have contributed to these improved quit rates, but the availability of a wide range of quitting methods, including e-cigarettes, is very likely to be relevant.

**The impact on human health of e-cigarettes:**

7. Current evidence collated by Public Health England suggests that e-cigarettes are 95% less harmful than regular cigarettes. Existing studies indicate that e-cigarettes deliver a much smaller range of toxins at much lower concentrations than cigarettes, meaning less harm is likely to come from e-cigarettes than from smoking tobacco.

8. However, further research is required into the longer-term health effects of vaping, ideally using participants who are never-smokers; although finding a cohort of never-smokers who vape can be challenging. A recent 3.5 year study of nine daily e-cigarette users who have never smoked was published in November 2017, and found no significant changes over the observation period from baseline levels in the group of e-cigarette smokers, including on either lung function or respiratory symptoms.

9. Concerns are largely around the possible effects of inhaling e-cigarette vapour over a lifetime. We recognise the following evidence on risk for key aspects of e-cigarette vapour:

- **E-cigarette vapour elements.** Alongside nicotine and other components, there are harmful compounds in e-cigarette vapour which are carcinogenic in large doses, including formaldehyde and other aldehydes. These are in a much lower level than cigarette smoke and at a level which is below the limits for occupational exposure.

- **Flavourings.** Some studies have reported increased susceptibility to infections in the airways after direct contact with e-liquids used to flavour e-cigarettes, such as popcorn flavouring. No study so far has shown any clear hazard from flavoured e-cigarette vapour, and direct contact differs to inhaling vapour, which is what happens in e-cigarette use.

- **Impact on lung conditions.** The sustained inhalation of any toxin poses a risk to health, particularly in relation to risk of COPD and lung cancer. E-cigarettes also include metals, ceramics and rubber which may become aerosolised when heated. There is therefore a potential toxicity of metal and other fine particles, which could be linked to COPD and interstitial lung diseases. However, exposure is well below

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12 Ibid p.82
13 Ibid p. 82
14 Ibid p. 82
15 Ibid, p. 83
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recognised safety thresholds, so will still be much less dangerous than the risks associated to smoking cigarettes.\(^{16}\)

10. There is currently no clear evidence that demonstrates e-cigarettes are a gateway for young people to take up cigarette smoking. NHS Digital's publication *Smoking, drinking and drug use in young people*, published in November 2017, found that since 2014 current and regular e-cigarette use levels have remained very low, although they slightly increased in the most recent data.\(^{17}\) Research from ASH Wales found that the increasing use of e-cigarettes among young people does not appear to have led to an increase in the number of young people smoking.\(^{18}\) It is nonetheless important that restrictions are in place on the promotion of e-cigarettes to children and young people under the age of 18.

About the British Lung Foundation
The BLF is the only UK charity looking after the nation's lungs. We offer hope, help and a voice. Our research finds new treatments and cures. We help people who struggle to breathe to take control of their lives. And together, we're campaigning for better lung health. With your support, we'll make sure that one day everyone breathes clean air with healthy lungs.

*December 2017*

\(^{16}\) Ibid, p. 83
\(^{18}\) ASH Wales