Objective
To analyse telephone enquiries to the UK NPIS involving ingestions of e-cigarette refill solutions and to examine any recorded adverse effects.

Methods
Enquiries to the UK NPIS were analysed for enquiries relating to unintentional and intentional e-cigarette liquid ingestions between April 2007 and December 2013.

Results
The UK NPIS received a total of 213 enquiries specifically concerning e-cigarette refill liquid ingestions. The data show a significant increase in the number of telephone enquiries, rising from six cases in 2007 to 138 cases in 2013 (Fig. 1).

The number of enquiries involving children aged four-years-old and younger accounted for 31.5%, of which 8.5% developed features and required further hospital management. Adults accounted for 61.5% of enquiries. A total of 32 cases (15%) displayed features of toxicity lasting more than 4 hours after ingestion.

The most common features reported at the time of the enquiry were vomiting (10.8%), abdominal pain (5.6%), nausea (5.2%), and dizziness (5.2%). Features including tachycardia, tremor, chest pain, dyspnoea, anxiety and agitation were also recorded.

Figure 2: E-cigarette liquid refills, atomiser and cartridge.

Conclusion
The number of enquiries to the NPIS concerning e-cigarettes is increasing rapidly, with young children accounting for approximately one third of the cases.

Discussion
Since the emergence of the electronic nicotine delivery system (ENDS), commonly known as electronic cigarettes or e-cigarettes, the public’s perception of the e-cigarette has changed from being a relatively new, innovative appliance to being a common, useful gadget which is regularly used to help quit smoking. However, these liquid refills are not currently regulated as medicinal products in the UK and many contain substantial concentrations of nicotine. Other unlicensed, harmful, sometime undisclosed ingredients including diethylene glycol and carcinogenic tobacco specific N-nitrosamines have also been detected in the solutions. Results of this analysis indicate that these products have the potential to cause serious harm. Further action is recommended to inform the public of the potentially serious effects of these readily available agents and to encourage their safe storage.

References