

Action needed to standardize methods for the measurement of cigarette smoke constituents

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Proposals to regulate cigarette smoke constituents will only be possible if the methods used to measure them are consistent.

To date, the constituents measured in cigarette smoke have been tar, nicotine and <u>carbon monoxide</u>. However, in 2008 the World Health Organization (WHO) Study Group on Tobacco Product Regulation proposed that the regulation of cigarettes should be based on measuring a wider selection of toxicants. According to Christopher Wright, Head of Analytical Science at British American Tobacco, this will only be possible if a suite of globally harmonized test methods is agreed and coordinated by an international body such as the International Organization for Standardization (ISO) (*Trends in Analytical Chemistry* 2015 66 118-127).

Measuring <u>cigarette smoke</u> constituents in a reproducible and comparable manner is a significant technical challenge due to their relatively low levels and the chemical complexity of smoke. This is further complicated by the fact that historically test methods were developed in isolation, which has resulted in divergent or inconsistent techniques.

A group of WHO laboratories is currently conducting a validation exercise to establish methods to measure a specific set of nine smoke constituents, a process that would be of greater benefit if it was inclusive and open to peer review. "Without collective investment in the development of robust quality control processes, technical agreement



between industry, commercial testing laboratories and regulatory organizations will be very difficult to demonstrate, and perhaps impossible' says Wright.

The US Food and Drug Administration (FDA) operates under an open and inclusive approach and has recently implemented an initiative to establish reference products and proficiency studies, both fundamental requirements to establish 'fit-for-purpose' methods. This effort to develop a national program is a significant opportunity to harmonize analytical methods and improve their reproducibility to standards suitable for gathering regulatory data.

"Regulatory authorities need to consider the reality of regulating cigarettes without harmonized quality control processes and comparable laboratory test data," says Wright.

Provided by British American Tobacco

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