Cigarettes sold in China: Design, emissions and metals

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Abstract
Background China is the home to the world's largest cigarette maker, China National Tobacco Company (CNTC), yet little is known publicly about the design and emissions of Chinese cigarettes. CNTC is currently in the process of consolidating its brands and has ambitions to export its cigarettes. Machine-measured tar yields of many of its cigarette brands have also been reduced, similar to what occurred in Western countries from the 1970s through the 1990s with so-called 'low-tar' cigarettes introduced to address consumer concerns about health risks from smoking.

Method The current study examines the design and physical characteristics, labelled smoke emissions and tobacco metals content of leading brands of Chinese cigarettes from seven cities purchased in 2005e6 and in 2007.

Results Findings suggest that similar to most countries, tar levels of Chinese cigarettes are predicted primarily by tobacco weight and filter ventilation. Ventilation explained approximately 50% of variation observed in tar and 60% variation in carbon monoxide yields. We found little significant change in key design features of cigarettes purchased in both rounds. We observed significant levels of various metals, averaging 0.82 mg/g arsenic (range 0.3e3.3), 3.21 mg/g cadmium (range 2.0e5.4) and 2.65 mg/g lead (range 1.2e6.5) in a subsample of 13 brands in 2005e6, substantially higher than contemporary Canadian products.

Conclusion Results suggest that cigarettes in China increasingly resemble those sold in Western countries, but with tobacco containing higher levels of heavy metals. As CNTC looks to export its product around the world, independent surveillance of tobacco product characteristics, including tobacco blend characteristics, will become increasingly important.

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