Exposure to second-hand smoke in Scotland’s prisons

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Results from the baseline study

- All 15 prisons measured between 30th September and 22nd November 2016
- Measurement duration mean was 5.9 days (7301-8704 mins)
- Total 128,431 minutes of data on PM$_{2.5}$ concentrations (>2100 hours)
- Outdoor PM$_{2.5}$ data from nearest local authority outdoor fixed site measurement station
- Mobile/task-based measurements (~30 minutes)
- 86 in total (range 2-8) >40 hours of task-based data

PM$_{2.5}$ time plots – HMP Grampian

- Clear diurnal pattern
- Modern prison
- ‘Median’ prison with values nearest the average for all 15 prisons
Static PM$_{2.5}$ measurements
Summary of results

• Largest data set of SHS exposure from any prison service in the world
• There is clear evidence of exposure to SHS in all prisons
• SHS exposure concentrations broadly similar to data from prisons in England & Wales (2015)
• High levels of variation between and within prisons
• Overall, exposure to SHS for most prison staff is likely to be in the range of 20-30 μg/m³
• Similar to a non-smoker living with a smoker
• Exposure much lower than that experienced by bar staff prior to smoke-free legislation
• Some common tasks such as cell checks and cell maintenance lead to high SHS exposures that are similar to those experienced in a bar in Scotland prior to smoke-free laws
• There is no Workplace Exposure Limit for SHS – the World Health Organisation state “there is no safe level of exposure to SHS”