Section A: CPHE to complete	
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Guidance title:	Behaviour change
Committee:	Programme Development Group
Subject of expert testimony:	Behaviour change – Complex and Multiple Interventions
Evidence gaps or uncertainties:	

How to manage complex multi-level behaviour change interventions for complex problems?

How to approach individuals with multiple health issues /risks:

- where to intervene first?
- in what order?

Section B: Expert to complete	
Summary testimony:	

Risk behaviours such as smoking, drinking alcohol, unprotected sex or antisocial and criminal behaviour often begin in adolescence. A majority of young people will engage in more than one risk behaviour. Analyses of data on 13 risk behaviours collected from members of the ALSPAC cohort suggest that at 15 to 16 years of age 40% of adolescents engage in between three and five risk behaviours; 32.6% engage in four or more behaviours: and 6.2% engage in seven or more.[1] There is also is evidence of patterning in these behaviours by gender and social class[2] and although some types of risk behaviours appear to cluster together (e.g. substance use behaviours) analyses of data from the ALSPAC cohort suggest it is the absolute number of behaviours engaged in that distinguishes between different groups of young people.[3] Multiple risk behaviour matters because it is associated with poor educational attainment, morbidity and premature mortality in adolescence and early adulthood.[4]

In spite of risk behaviours co-occurring, public health interventions tend to focus on single risk behaviours such as smoking or safe sex. There is an evidence base for the effectiveness of such single focus interventions but systematic reviews of interventions that tackle a number of risk behaviours simultaneously are only just beginning to be undertaken[5,6] and while for reasons of parsimony it may appear logical to implement interventions that tackle risk behaviours multiply, care must be taken not to assume that this is the better approach. We do not yet have the evidence on which to make that judgement.

Theory is important in the design of complex interventions for public health improvement. The behaviour change field in public health is already well informed by psychological theories but is more focussed on intervention at the individual level. Sociological theories may help to inform the development of multi-level interventions

because sociology is concerned with human social life, groups and societies, social class, culture, institutions and collective behaviour. Sociological theories may be useful in guiding interventions designed to address a number of levels but they are not always easy to identify from the extant literature or to specify as logic models.

A recently conducted, small-scale review of sociological theories of risk-taking likely to be harmful to health identified 16 relevant theories. It revealed that risk-taking is not simply an individual behaviour but is a social practice involving a range of social actors which can only be fully understood within its social context.[7] The review suggested that serious multiple risk behaviour is associated with: social isolation and being a member of a marginal social group; being labelled as 'deviant' and becoming a member of a 'deviant subculture' (which leads to social isolation); and avoiding the influence of convention (which may be related to social isolation). Greater application of sociological theories in public health may result in better interventions and more empirical testing of theory.

References (if applicable):

1. MacArthur GJ, Smith MC, Melotti R, Heron J, Macleod J, Hickman M, Kipping RR, Campbell R, Lewis G. Patterns of alcohol use and multiple risk behaviour by gender during early and late adolescence: the ALSPAC cohort. *J Pub Health*. 2012. Mar;34 Suppl 1:i20-i30 Mar;34 Suppl 1:i20-i30.
2. Kipping R, Smith M, Heron J, Hickman M, Campbell R. Patterns of multiple risk behaviour during adolescence by parental socio-economic status: the Avon Longitudinal Study of Parents and Children birth cohort. (Submitted for publication)
3. Heron J, Hickman M, Kipping R, Smith M. Campbell R. A latent class analysis of multiple risk behaviours in adolescence: the ALSPAC cohort. (In prep.)
4. Biglan A, Brennan PA, Foster SL, Holder H. Helping Adolescents At Risk - prevention of multiple problem behaviors. London: The Guildofrd Press; 2004.
5. MacArthur G, Kipping RR, White J, Chittleborough C, Lingam R, Pasch K, Gunnell D, Hickman M, Campbell R. Individual-, family-, school- and community-level interventions for preventing multiple risk behaviours in 8 to 25 year olds (Protocol). The Cochrane Library, Issue 6, 2012
6. Jackson C, Haw S, Frank J. Adolescent and young adulthood health in Scotland: interventions that address multiple risk behaviours or take a generic approach to risk in youth. Edinburgh: SCHPRP; 2010.
7. Pound P. Campbell R. Sociological theories of risk taking. (Submitted for publication)