

CHILDREN AGED 0-14 YEARS LIVING IN HOUSEHOLDS IN WHICH AT LEAST ONE ADULT SMOKES ON A REGULAR BASIS	
GENERAL CONSIDERATIONS	
<i>Issues</i>	Respiratory diseases
<i>Type of indicator</i>	Exposure (proximal) Can also be used as a measure of action for policies to reduce smoking
<i>Rationale</i>	Exposure to environmental tobacco smoke – perhaps more than any other single factor – is a major threat to children's health. Tobacco smoke contains over 4000 contaminants, many of which are known or suspected carcinogens. Risks come not only as a direct and acute result of inhalation (e.g. respiratory symptoms), but also in the longer term because of increased risks of pulmonary damage, cardiovascular illness and cancer. Smoking in the home also increases the probability that the children themselves will take up the habit, thereby increasing their long-term health risks.
<i>Issues in indicator design</i>	<p>Ideally, an indicator on exposures to environmental tobacco smoke would be based either on suitable biomarkers (e.g. nicotine) or on measurement or modelling of levels of ETS in the home. In practice, both of these are rarely possible because of lack of suitable data. For wider use, therefore, the indicator needs to be based on more accessible information, such as tobacco and cigarette sales or smoking habits (e.g. number of smokers or number of cigarettes smoked).</p> <p>Neither of these provide a wholly accurate measure of levels of exposure. A significant proportion of smoking, for example, takes place outside the home (at work, in the car, outdoors or in leisure venues): in these cases risks of children's exposure are reduced. Even where smoking does take place at home, levels of exposure of children may vary, depending on where within the home it occurs. Information on the number of smokers is also partially misleading, since it takes no account of the level of smoking. Data on numbers of cigarettes smoked, obtained from questionnaires or household surveys, are also commonly found to be somewhat unreliable. For most purposes, therefore, probably the most appropriate indicator – in terms of the availability of data and its reliability – is the percentage of children living in households where at least one adult is a regular smoker.</p> <p>An age range of 0-14 years is proposed for this indicator because risks affect children of all ages. Exposures to ETS are also likely to be greatest during evenings and other periods when most of the adult family members are at home: attendance at school, therefore, does not greatly reduce exposures.</p>
SPECIFICATION	
<i>Definition</i>	Percentage (or number) of children aged 0-14 years old living in households where at least one adult smokes on a regular basis.
<i>Terms and concepts</i>	<p>Household: a single dwelling unit (e.g. a house or apartment) intended for permanent residence.</p> <p>Adults who smoke on a regular basis: adults who smoke at least one cigarette, most days (i.e. with an average consumption of about 4 cigarettes or more per week).</p>
<i>Data needs</i>	<p>Number of households in which at least one adult smokes on a regular basis.</p> <p>Total number of children aged 0-14 years, living in these households.</p> <p>Total number of children aged 0-14 years in the survey area.</p>
<i>Data sources,</i>	Data can usually be obtained from household surveys. Questionnaire

<i>availability and quality</i>	surveys (e.g. of children at school) can also be used, as can information from lifestyle surveys.
<i>Level of spatial aggregation</i>	Community, administrative district or region
<i>Averaging period</i>	Annual
<i>Computation</i>	<p>The indicator can be computed as a simple percentage:</p> $100 * C_{smoke} / C_{tot}$ <p>where: C_{smoke} is the number of children aged 0-14 years living in households with at least one regular smoker;</p> <p>C_{tot} is the total number of children aged 0-14 years in the survey area.</p>
<i>Units of measurement</i>	Percentage or number
<i>Worked example</i>	<p>Assume that, in a survey of 5000 households containing 12'670 children, 6634 are found to be living in households with at least one regular smoker. In this case the indicator value would be:</p> $100 * 6\ 634 / 12\ 670 = 52.4 \%$
<i>Interpretation</i>	<p>This indicator provides a direct and reasonably easily interpretable measure of the potential for children to be exposed to environmental tobacco smoke in the home. Because it takes no direct account of the numbers of smokers in each home, of the quantities of tobacco smoked, or of smoking behaviours (e.g. what proportion takes place in the home, or in the presence of children), interpretation nevertheless needs some care, especially where small-area comparisons are being made.</p>
<i>Variations and alternatives</i>	<p>This indicator can be constructed for different age ranges of children, according to need. Restricting the indicator to younger children (below age 5), as here, has some merit because older children may themselves be smokers and may thus receive large proportions of their exposure either directly, or passively from other children outside the home. Younger children are also especially vulnerable to health risks from ETS. On the other hand, smoking in front of older children seems to be more likely to encourage them, in turn, to smoke. Where the concern is about longer term smoking habits, it may, therefore, be appropriate to extend the age range considered.</p> <p>Other alternatives are also possible, for example, by assessing the numbers of cigarettes to which children may be exposed in the home: in this case, the indicator could be computed as the sum of children * cigarettes smoked in each home. Another possibility, where resources permit, is to use a biomarker such as cotinine in saliva.</p>
<i>Examples</i>	None known
<i>Useful references</i>	<p>Cunningham, J., O'Connor, G.T., Dockery, D.W. and Speizer, F.E. 1996 Environmental tobacco smoke, wheezing, and asthma in children in 24 communities. <i>American Journal of Respiratory and Critical Care Medicine</i> 153, 218-24.</p> <p>Di Franza J.R. and Lew, R.A. 1996 Morbidity and mortality in children associated with the use of tobacco products by other people. <i>Pediatrics</i> 97, 560-8.</p> <p>Etzel, R.A. 2001 Indoor air pollutants in homes and schools. <i>Children's Environmental Health</i> 48, 1153-65.</p>

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