CHILDREN AGED 0-14 YEARS LIVING IN HOUSEHOLDS PROVIDING SUITABLE CONDITIONS FOR INSECT-BORNE DISEASE TRANSMISSION

GENERAL CONSIDERATIONS	
Issues	Insect-borne diseases
Type of indicator	Exposure (proximal) Can also be used as an indicator of action aimed at increasing awareness of, or eliminating, insect vectors in the home.
Rationale	Children's contact with insect vectors occurs most commonly in or near the home. The opportunities of contact thus increase when the home or local environment provide habitats in which insects may breed, feed and survive. Suitable micro-environments often include loose waste, faecal material or stagnant water bodies. The presence of rats or other animals that provide hosts for the insects also increases risks of human exposure. This indicator therefore provides a measure of the risk of exposure as a result of the presence of these micro-environments.
Issues in indicator design	The main difficulties in developing this indicator are to define relevant micro-environments that might act as risk factors for insect-borne diseases, and to obtain reliable data on their extent or density in the home environment. Because of the complex nature of these features, some form of qualitative survey of housing conditions is likely to be more informative in many cases than attempts to quantify individual micro-environments in the home. An age range of 0-14 years is used for this indicator because risks to children are not strongly age-dependent.
SPECIFICATION	
Definition	Percentage (or number) of children aged 0-14 years living in households providing suitable micro-environments for insect-borne disease transmission
Terms and concepts	***Suitable micro-environment for insect-borne disease transmission:*** a microenvironment or organism in or near to the home (i.e. within ca, 50 metres) that provides a potential habitat or host for insect populations that might transmit disease. Examples include: loose waste in the road, waste dumps, faecal material in the road, unsealed latrines, stagnant water pools, rats, livestock.
Data needs	Numbers of children aged 0-14 years by household. Classification of households in terms of presence of vector microhabitats.
Data sources, availability and quality	Data for this indicator are only likely to come from household surveys. Where these can be designed specifically to collect this information, they are likely to be reliable; less precise assessments may, however, be possible by inference from other data (e.g. on level of provision of services such as water, waste and sanitation). In these cases, households might be scored in terms of the potential risk they pose based on the number of key services not provided.
Level of spatial aggregation	Community or administrative district
Averaging period	Annual or longer term
Computation	The indicator can be computed as a simple percentage: $100 * Cmicro / Ctot$ where: *Cmicro* is the number of children living in homes with microhabitats

	suitable for insect vectors; *Ctot* is the total number of children.
Units of measurement	Percentage or number
Worked example	Assume that a household survey shows that 765 children, from a total of 2 200, live in homes providing suitable microenvironments for insect-borne disease transmission. In this case, the value of the indicator is calculated as: 100 * (765 / 2 200) = 34.8%
Interpretation	This indicator provides a useful measure of conditions in the home likely to affect the risks of disease transmission by insect vectors. As a proximal measure of exposure, it is especially important for pin-pointing children at risk, and thus for targeting intervention. An increase in the indicator can be seen to represent an increased level of risk; a reduction in the indicator implies a decreased risk. Where the indicator can be determined on the basis of purposely-designed household surveys, it is likely to be reliable and few problems in interpretation should occur. Care is needed in comparing between areas, however, because differences in sample design or survey methodology may affect the indicator. Where the indicator is derived indirectly (e.g. from data on service provision), greater caution is necessary for it is not simply the existence of key services, so much as their quality and level of maintenance, that is often most important.
Variations and alternatives	As noted, the main alternative to the proposed indicator is to base it upon the availability of basic services to the home (water, sanitation, waste collection). In this case, two main approaches are possible. All households lacking any one of these services may be considered to be 'at risk'; or alternatively households may be scored depending on the number of services lacking. If the latter approach is used, the indicator should be computed as follows: $100 * \Sigma (Clack_i / Ctot) / Nserv$ where: $Clack_i$ is the number of children living in households lacking service i; *Ctot* is the total number of children; *Nserv* is the number of services considered.
Examples	None known
Useful references	McGranahan G, Leitmann, C. and Surjadi, C. 1997 *Understanding environmental problems in disadvantaged neighbourhoods: broad spectrum surveys, participatory appraisal and contingent valuation.* Stockholm: Stockholm Environment Institute.