

WOMEN OF CHILDBEARING AGE WITHIN ONE HOUR'S TRAVEL OF SPECIALIST MATERNITY AND PERINATAL CARE	
GENERAL CONSIDERATIONS	
<i>Issues</i>	Perinatal diseases
<i>Type of indicator</i>	Action
<i>Rationale</i>	Ready access to specialist maternity and perinatal services is crucial if adequate health care is to be provided to mothers during and immediately after pregnancy. Improving this care can, therefore, be one of the most effective means of action to address perinatal health problems. These improvements may take many forms. They can involve building new hospitals and specialist care centres, enhancing the quality of the service provided at existing centres, or facilitating access to the service (either by removing financial barriers or by improving transport facilities). This indicator is intended to provide a measure of the effectiveness of these measures.
<i>Issues in indicator design</i>	<p>The main problems in developing this indicator are the definition of specialist maternity and perinatal care and the measurement of travel times to the available facilities. Specialist care centres may take many forms, vary greatly in their quality, and differ substantially in terms of the range of services they offer, the numbers of people they can deal with, and their response times. The simple existence of such facilities, therefore, does not necessarily indicate that effective care is available.</p> <p>Estimation of travel time to specialist care centres requires the ability to define both the place of residence and the location of the care centre with some degree of accuracy, as well as the travel route and speed. With the help of GIS techniques, and with suitable georeferenced data, this is possible; where these data are not available, only rough approximations can be made. For many women, also, other constraints exist, such as child care commitments, lack of access to transport, work, or physical disability. For these reasons, the indicator may be subject to major uncertainties.</p>
SPECIFICATION	
<i>Definition</i>	Percentage (or number) of women aged 15-49 years living within 1 hour's travel time of specialist maternity and perinatal care.
<i>Terms and concepts</i>	<p>Specialist maternity and perinatal care: health facilities offering specialist obstetric care.</p> <p>Living within one hour's travel time: living at a place of residence within less than one hour's travel time of the nearest specialist facilities, given available transport facilities and reasonable assumptions about access and personal mobility.</p>
<i>Data needs</i>	<p>Location of specialist maternity and perinatal care facilities</p> <p>Numbers of women aged 15-49 by place of residence</p> <p>Transport facilities (roads, public transport)</p>
<i>Data sources, availability and quality</i>	<p>Data on the location of health care facilities are generally available from the health services or ministry.</p> <p>Data on population distribution, by age and gender, can usually be obtained from national censuses. Where census tracts are small, these may be sufficient to estimate the numbers of women of childbearing age within the specified travel time of the specialist health care facilities. Where these data are not of a sufficiently high resolution, it may be necessary to use modelling techniques to estimate the more local population distribution (e.g. on the basis of land cover type derived from satellite data, or land use maps).</p> <p>Data on transport facilities (e.g. road-lines) may be available in a digital or</p>

	<p>map form (e.g. from mapping or highways agencies); data on public transport facilities can often be obtained from the relevant transport companies. Based on these it is possible to estimate standard travel times.</p> <p>Where any of these data sets are unavailable, questionnaire or interview surveys may be necessary to estimate accessibility on the basis of a sample of individuals.</p>
<i>Level of spatial aggregation</i>	Census tract, community or administrative district
<i>Averaging period</i>	Annual or longer-term
<i>Computation</i>	<p>The indicator can be computed as a simple percentage, as follows:</p> $100 * W_{near} / W_{tot}$ <p>where: W_{near} is the number of women aged 15-49 years living within 1 hour's travel of a specialist maternal and perinatal health care facility; W_{tot} is the total number of women aged 15-49 years.</p>
<i>Units of measurement</i>	Percentage or number
<i>Worked example</i>	<p>Assume that, within an area containing 41 950 women of childbearing age, 37 200 live within 1 hour's travel of a specialist maternal and perinatal health care facility. In this case, the value of the indicator is calculated as:</p> $100 * 37\ 200 / 41\ 950 = 88.7\%$
<i>Interpretation</i>	<p>Where reliable data exist, this indicator can be interpreted as a measure of the ease of access to specialist maternal and perinatal health care services. An increase in the indicator represents an improvement in accessibility; a fall in the indicator implies a reduction in accessibility. These changes can, of course, occur for different reasons: because of changes in the extent and availability of the services, or because of changes in population numbers and distribution. Care is also needed in interpreting the indicator because the existence of services within the specified travel time does not necessarily mean that it is accessible. For many people, access may be limited by their own circumstances (e.g. family commitments, working hours, physical state or resources), or by the operating practices of the health care centre (e.g. capacity, charges, selection procedures).</p> <p>Uncertainties may also be expected in the indicator, due to data limitations and the need to estimate travel times.</p>
<i>Variations and alternatives</i>	<p>The main variations that may be required in this indicator are in the way in which access is defined and calculated. The specification of 1 hour as the threshold for travel time is, for example, arbitrary; other thresholds may be more appropriate in some cases. Where travel times cannot easily be calculated, it may also be more practicable to base the indicator on a distance measure (e.g. percentage of women of childbearing age living within 30 km of specialist maternal and perinatal health care facilities). Another alternative is to base the indicator on the average distance to the nearest maternal and perinatal health care facility. Both these alternatives can readily be estimated using GIS techniques. A simpler alternative is the average population-weighted density of the available services (i.e. number of people per facility); this, however, takes no direct account of proximity and is not sensitive to clustering of the services in certain (e.g. more affluent) areas.</p>
<i>Examples</i>	<p>WHO <i>Indicators to monitor maternal health goals</i></p> <ul style="list-style-type: none"> • Percentage of population within 1 hour travel time to health centre offering essential obstetric care facilities • Proportion of women tended at least once during pregnancy by trained health personnel

	<p>World Bank <i>HNP indicators on socio-economic inequalities</i></p> <ul style="list-style-type: none"> • Basic antenatal care rate – to a medically trained person • Basic antenatal care rate – to a doctor • Basic antenatal care rate – to a trained midwife • Extended antenatal care rate – two or more visits • Attended delivery rate - by a medically trained person • Attended delivery rate – by a doctor • Attended delivery rate – by a nurse/nurse-midwife
<i>Useful references</i>	<p>WHO 1993 <i>Coverage of maternity care. A tabulation of available information.</i> Geneva: World Health Organization.</p>