

# The Impact of Road Development on the Health of Pregnant and Parturient Women

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**Field Survey:**  
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## Outline and Objectives

In Indonesia, the maternal mortality rate is 230 in every hundred thousand women, which is twenty-three times higher than it in Japan. The Millennium Development Goals stress that improving the health of pregnant and parturient women is fundamental to a stable social environment, and efforts to achieve this are being made throughout the world. JBIC recognizes that not only do projects in the health sector serve to improve health and sanitary conditions in developing countries, but that broader-based infrastructure development projects also have a contribution to make. In this context, JBIC and the United Nations Population Fund (UNFPA) collaborated in the development of a method for analyzing the impact of road development on the health of pregnant and parturient women for this evaluation, which was then applied to women living in two villages, one on a paved district road, the other on an unpaved rural road in Kecamatan Ciomas (sub-district) of Kota Serang (city) of Kabupaten Serang (regency), Banten Province.

## Evaluation Result

A literature survey on maternal mortality was undertaken in Japan and a hypothesis (logic model) covering the route from “road development” to “improvements in the health of pregnant and parturient women” was constructed on the basis of existing research findings. Broadly speaking, “road development” is believed to stimulate economic activity in contiguous areas, while in terms of health, and specifically “improving the health of pregnant and parturient women” it is considered to be beneficial in that it improves access both to health centers and to medical practitioners for these women. In the early stages of the evaluation, it was anticipated that, on the hypothetical route from “road development” to “improvements in the health of pregnant and parturient women”, the importance of service quality at healthcare facilities would increase the closer to “improvements in the health of pregnant and parturient women” one came, while the role of “road development” would diminish. Accordingly, the process undertaken for this evaluation was taken to stop at the intermediate phase linking “road development” and “improvements in the health of pregnant and parturient women” and three intermediary indices (antenatal care, births attended by a medical practitioner, and referrals to advanced healthcare facilities) were devised.

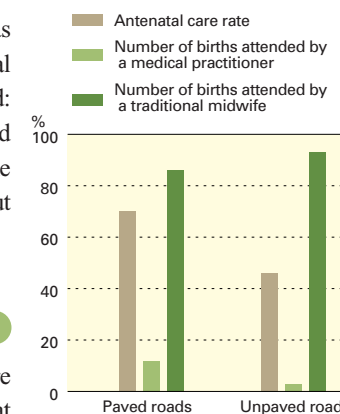
To confirm the efficacy of the logic model, including the three intermediary indices aforementioned, a survey was undertaken targeting women living in two villages - one with paved roads, the other with no paved roads - in Kecamatan Ciomas (sub-district) of Kota Serang (city) of Kabupaten Serang (regency), Banten Province who had experienced pregnancy and/or childbirth during the past two years (102 women in each village: 204 in total). The survey revealed that 70% of the women in the village on the paved roads undertook antenatal care,

while in the village on the unpaved roads the rate was 46%. However, no major gap was evidenced in terms of the proportions of women whose births were attended by a medical practitioner (doctor, nurse, midwives, etc.), with the rates being low for both groups (paved: 12%; unpaved: 3%). By contrast, the survey found that 86% of births in the village on the paved roads and 93% in the village on the unpaved roads were attended by a traditional midwife. The two groups were compared in terms of the rate of referrals to advanced healthcare facilities, but at 15, the sample was too small to permit any quantitative conclusions to be drawn.

## Lessons Learned and Recommendations

One of the lessons learned from this evaluation was the need to fit the hypothesis to the culture and customs of the locality in which the survey is to be undertaken. It was also pointed out that when implementing road development projects efforts must be made to develop road infrastructure around the small healthcare facilities that are found in all areas and not just in the vicinity of advanced healthcare facilities, and further, that in order to further enhance the effects of road development on the health of pregnant and parturient women it is necessary to reduce the travel costs and time involved in antenatal care and childbirth.

While this evaluation demonstrated that road development plays a substantive role in increasing the proportion of antenatal care among pregnant women, a workshop was held locally to discuss 1) why the quotient of deliveries attended by a medical practitioner (particularly midwives) had not increased, and 2) what measures can be taken to increase this quotient with a view to maintaining the health of pregnant women and facilitating safe delivery. The workshop revealed that, in connection with the first issue, pregnant women “have no sense of the risks involved in childbirth and thus do not perceive the need for a medical practitioner to be present during delivery; that traditional midwives offer better services than medical practitioners during and after childbirth (the women are free to select the method of paying the fees involved in childbirth; extensive postpartum care is provided, etc.); and that no firm bonds of trust have been established with the medical practitioners”. The second issue was discussed by health center workers, doctors and midwives employed at hospitals and health centers, traditional midwives and health volunteers. The action plan devised as the result of these discussions proposes that in order to make the husbands and fathers, who are frequently the decision-makers in the home, aware of the risks involved in childbirth, religious leaders should be asked to address the health of pregnant women during religious services; that traditional midwives and midwives should work hand in hand, with the former requesting the latter to be present at deliveries; and that mutual aid associations that loan money should be established for childbirth.



The children of Sukadana village. To get to school, everyday the children walk along the village road to reach the district road.



Children attended the workshop with their mothers. The workshop was quite an event in the village of Sukadana and the children were mesmerized by the foreign evaluators.



paved road



unpaved road

### Differences between traditional midwives and medical practitioners clarified at the workshop (opinions of pregnant and parturient women)

|                            | Traditional midwives  | Medical practitioners  |
|----------------------------|---|--|
| Access                     | Available 24 hours a day<br>Will come home<br>Will wait for 2-3 days                                | Difficult to contact outside office hours  |
| Medical supplies/equipment | Prescribes Jamu*  | Only medical practitioners have injections and equipment for making incisions/suturing |
| Payment                    | User can chose the means, amount and timing of payments (cash/payment in kind)                      | Fixed rates (installments possible)  |
| Pain in childbirth         | Alleviate pain through incantation/invocation   | Injections, incisions, suturing, etc. are accompanied by pain                          |
| Postpartum care            | Will do housework<br>Will pay visits 3, 8 and 40 days after delivery to checkup on mother and child | Will leave after the birth is over   |

\*Jamu is a herbal remedy made from a blend of natural herbs. A variety exists; these remedies are prepared based on the physical condition of the patient and the desired effect. These remedies are used by not only pregnant and parturient women but also by a broad range of people.



The road through the village of Sukadana of Kecamatan Ciomas, Serang is essential to the daily lives of its citizens but becomes mud-bound during the rainy season and thus difficult to traverse.



At the workshop attended by the mothers and children of Sukadana village, although many relied on formerly-trained midwives for antenatal care the overwhelming majority rely on the care of traditional midwives during childbirth.