Planning for child health in a poor urban environment - the case of Jakarta, Indonesia

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I. INTRODUCTION

THIS PAPER CONSIDERS the health problems of children living in the *kampungs* of Jakarta. It describes the most serious health problems and the economic and environmental conditions which contribute to them. It also describes the health services available to poorer households and the use made of them. The authors stress the need for improvements in the housing and living environments of poorer households as one important factor in improving their health and the need for housing programmes to also include health components.

II. PRIMARY HEALTH CARE AND THE URBAN POOR

PRIMARY HEALTH CARE in the early 1980s focused on rural populations. The proponents of primary health care perceived urban areas as a large, homogeneous mass absorbing far too much of national health budgets at the expense of the rural poor. Over the last few years, there has been a shift in this perception as planners have realized that rapid urbanization and population growth in cities has resulted in large numbers of poor people with no access to health services. Recognition of the health needs of the urban poor has led national governments and donors to address urban primary health care needs.[1]

This realization of the needs of the urban poor is reflected in urban health care policy development and implementation. Upgrading of squatter settlements, tenements and other kinds of sub-standard housing used by poorer groups has a long history,[2] and the urban development sector (particularly housing) considered the problems and needs of the urban poor long before the health sector. Now, however, primary health care (health services and environmental health improvements) has been added onto existing slum upgrading projects, and this trend can be observed from current policies in cities such as Jakarta, Hyderabad (India), Lusaka, and Amman.[3] (See Box 1 overleaf).

The addition of primary health components to slum upgrading has meant projects have become "inter-sectoral"; projects to improve slum areas which include health programmes are now termed "slum improvement projects", as many people perceive "upgrading" as involving only physical improvements. The addition of primary health care to slum improvement projects raises many issues for planners and implementers; such activities are not established in a vacuum, and should take into account existing environmental conditions, health services, develop-

1. See: World Health Organization (1984), "Primary Health Care in Urban Areas: Reaching the Urban Poor in Developing Countries", Report No.2499M, Geneva; T. Harpham, T. Lusty and P. Vaughan (1988), *In the Shadow of the City: Community Health and the Urban Poor*, Oxford University Press; and I. Ta-

bibzadeh, A. Rossi-Espagnet and R. Maxwell (1989) *Spotlight on the Cities: Improving Urban Health in Developing Countries*, World Health Organization, Geneva.

2. Skinner, R., J.L. Taylor and E.A. Wegelin (1987), *Shelter Upgrading for the Urban Poor*, Island Publishing House, Manila.

3. Harpham T. and C. Stephens (1990), "Slum improvement: health improvement?" Publication of the Health Policy Unit, London School of Hygiene and Tropical Medicine.

Box 1: Primary health care

The essential components of primary health care are:
* **education concerning prevailing health problems and the methods of preventing and controlling them**
* **promotion of food supply and proper nutrition**
* **an adequate supply of water and basic sanitation**
* **maternal and child health care including family planning**
* **immunizations against the major infectious diseases**
* **prevention and control of locally endemic diseases**
* **appropriate treatment of common diseases and injuries**
* **provision of essential drugs.**

SOURCE: Alma - Ata primary health care, WHO/UNICEF,

ments in other sectors, and existing patterns of health-related knowledge, attitudes and behaviour.

What information is typically available before such a primary health care "component" is introduced to a slum improvement project? How can this information be used in planning? These questions are addressed below with special reference to child health, a focus of many primary health care programmes, and using the example of Jakarta, Indonesia.

III. THE JAKARTA POOR, AND THE *KAMPUNG* IMPROVEMENT PROGRAMME

IN 1980, THE estimated population of Metropolitan Jakarta was 6.5 million people, and the overall growth rate 3.47 per cent (1.9 per cent from natural increase; 1.57 per cent from migration).[4] The estimated population in 1990, assuming the growth rate has remained constant, is some 9.2 million people. However, population statistics depend on name registration and the data may exclude some poor groups and seasonal migrants.[5]

Urban poverty is a considerable problem. Those in poverty are defined as those whose income level is less than Rp. 75,000 per month and this now includes 17 per cent of the population (Rp 3000 = £1 approximately).[6] This is similar to the level determined by a market research team based on a random selection of households throughout Jakarta: they estimate 10-15 per cent of households spend less than Rp 75,000 a month.[7] Thus between 0.92 to 1.38 million people in Jakarta live in households with low income/expenditure. In some *kelurahans* (subdistricts), the figure may be higher: for example, in areas of North Jakarta, one third of households survive on incomes of less than Rp. 2,000 per working day [8].

Many of the urban poor live in slum areas (*kampungs*) and some are long term residents in Jakarta. A *kampung* was originally regarded as a village group settlement, but is now a more general term for settlements where many poor people live, often in temporary and low cost housing. In 1987, it was estimated that there were 1,100 hectares of slums housing five million people. Estimates of the percentage of *kampung* dwellers actually born in Jakarta varies. For example, a survey of 260 household heads in different areas of the city revealed only 14 per cent were originally from Jakarta; however, how the households were selected in this study is not clear.[9] In North Jakarta, 30 per cent of residents have been there for less than 5 years, while 38 per cent have

4. Surjadi, C. (1987), "Health of the Urban Poor in Indonesia: a Situation Analysis", monograph of the Atma Jaya Research Centre, Jakarta.

5. Karamoy, A. and G. Dias (1986), "Delivery of Urban Services in Kampungs in Jakarta and Ujung Pandang" in Y.M. Yeung and T.G. McGee (Editors), *Community Participation in Delivering Urban Services in Asia*, IDRC, Canada.

6. See note 4.

7. Farquhar Sterling, Survey Research Indonesia, personal communication.

8. Pandji Putranto, personal communication.

9. See note 5.

been there for 15 years or more.[10]

The majority of the urban poor have probably not attended primary schooling. Some 13 per cent of household heads interviewed by Karamoy and Dias had completed primary education. In another study, 21 per cent of residents in poor areas had no education and 32 per cent had not finished primary school.[11]

Of the household heads surveyed by Karamoy and Dias, 28 per cent were labourers, 24 per cent traders, and 23 per cent civil servants. They point out that informal employment often pays better than formal menial or labouring positions. Surjadi notes that 22 per cent of mothers in poor areas work as unskilled labourers or food vendors.

The Kampung Improvement Programme began in 1969 as a project to improve roads, drains, paths, garbage disposal, drinking water, latrines, washing places, primary school buildings and health clinics. The government of Jakarta was one of the first municipal governments to recognize the need to upgrade low income settlements rather than seek to bulldoze and rebuild them on the same site. Since 1974, the Kampung Improvement Programme has been part of the provincial development plan, drawing on World Bank loans. Karamoy conducted random household interviews in improved and unimproved *kelurahans*. His results suggest that in the improved areas, residential mobility is similar to other areas, and that the Kampung Improvement Programme is not pushing the urban poor out of the improved areas. However, house and land prices have increased by 30-80 per cent per annum in improved areas, and others note that some residents have had to move out either because of the cost of the improvements or the increase in rent. The Kampung Improvement Programme has improved the physical environment but the social and economic structure of the communities remain much the same. Up to 45 per cent of the funds were spent on roads while only 2.5 per cent of *kampung* dwellers have vehicles.[12] The next phase of the Kampung Improvement Programme will include a primary health component and therefore it is necessary to assess existing health status, particularly of children.

IV. INFORMATION CONCERNING CHILD HEALTH

THE INFORMATION NEEDED for planning child health can be categorized into data on: environmental conditions, mortality, morbidity, nutrition and health related behaviour. The information that is available for each of these categories will vary but it is as important to identify gaps as it is to identify existing data. Below we summarize what was available regarding the Jakarta slums.

a. Environmental conditions

Provision for water, sanitation, drains and garbage collection varies greatly between city districts with those living in richer city districts often enjoying the benefits at a relatively low cost while those living in many of the poorer districts have little or no public provision. Many people living in poor urban areas have to buy drinking water from vendors; for example, in a North Jakarta *kelurahan* 98 per cent of households had to buy their water. One of the problems with such sources is that diarrhoea is commonly associated with bought water.[13] The price varies although the usual price is Rp. 150 per 20 litres (around 5 pence). In a *kelurahan* in West Jakarta, government installed public water supplies were managed by nearby residents who charged others for the water.[14]

There are few toilet facilities in the slums. In North Jakarta, 53 per cent of families have their own latrine; 23 per cent use public toilets; and 7 per

10. See note 4.

11. See note 4.

12. Surjadi, C. (1986), "Urban Health in Indonesia: a Situation Analysis", monograph of the Atma Jaya Research Centre, Jakarta.

13. See: Budiman, Gani, Padmasutra et al. (1988), The Nutritional and Health Status of Children Under Five in the Subdistrict West Padmangan, Metropolitan Jakarta, 1988, paper presented at the workshop on population health systems interaction in selected urban depressed communities, Jakarta, March 1988, 33 pages; and R. Lenz (1988), "Jakarta Kampung Morbidity Variations: some policy implications", *Social Science and Medicine* 26, pp. 641-649.

14. Sumpampouw, A., et al. (1986), "The Participation of the Slum Community Member in the Health Programme at Jembatan Bambu, West Jakarta", unpublished report, Department of Anthopology, University of Indonesia, Jakarta.

cent use the swamp. Forty eight per cent of those under five defecate anywhere.[15] In some *kelurahans* there are community latrines, but these are only maintained well if use is limited.[16] People using community latrines have to pay, and therefore many children defecate over open drains. Space for building latrines is limited, and many are built over canals.

Refuse disposal seems to be a major problem in many *kelurahans*. In North Jakarta, over 50 per cent of households throw their garbage into the swamp. Rubbish disposal may be better in improved *kampungs*. Communal rubbish collection points frequently do not work because there is a lack of resources to remove garbage.[17]

b. Mortality

Estimates of infant mortality in the poor areas of Jakarta are few, but the level is clearly higher than in the rest of Jakarta. The Central Bureau of Statistics estimates the infant mortality rate for all of Jakarta to be 33/1000; Osteria estimates the rate in *kampungs* to be 160/1000, and Surjadi estimates the rate in the poor areas of North Jakarta to be 120/1000.[18]

c. Morbidity

Diarrhoea is common. Exact estimates of incidence rates vary. Surjadi notes that in poorer areas the rate is higher, and 342 episodes per 1000 population in one year was recorded in the North Jakarta poor.[19] The peak incidence occurs during the rainy season, affecting infants of 6-12 months in particular. A study of diarrhoea and its relationship to environmental and socio-economic factors showed a higher incidence of the disease in areas where drinking water was purchased, and where people were living in houses made of temporary materials.[20] Overall, environmental factors seem to affect diarrhoeal disease incidence more than socio-economic circumstance.

Intestinal worms are widespread, as a result of poor environmental circumstances. A study from East Jakarta in 1985 showing that 69 per cent of those under five were infected with ascaris (round worm) and 11 per cent with trichuris (whipworm).[21] Forty three per cent of the 475 children were infected with ascaris, trichuris or both.

Skin diseases are also common among children. One study of 786 children showed skin diseases (including scabies, fungal infections and bacterial skin infections) to be present in 37 per cent of those examined.[22]

Acute respiratory infection accounts for high levels of morbidity in urban Indonesia. Acute respiratory infection and otitis media (middle ear infection) were common in one paediatric study.[23] The high population densities found in poor areas mean that acute respiratory infection and life threatening episodes of pneumonia are major causes of illness and death in children.

Neonatal tetanus occurs despite maternal vaccination campaigns. The reported incidence of the disease is likely to be underestimated as most cases go undetected by the health services. In 1982, there were 10 cases of neonatal tetanus per 1000 live births, many with a fatal outcome.[24]

Dengue haemorrhagic fever occurs in epidemics in Jakarta slum areas. This condition is caused by a virus and transmitted by the *aedes* mosquito, and may cause a severe illness in children resulting in death. Lenz suggests that malaria may also occur as epidemics, and that the disease is more common in North Jakarta where drainage and standing water may be more of a problem than in the central zones.[25] However,

15. See note 13.

16. Karamoy, A. (1984), "The Kampung Improvement Programme: Hope and Reality", *Prisma* (The Indonesian indicator) 32, pp. 19-36.

17. See notes 4, 5 and 14.

18. See: UNICEF (1989), Situation Analysis of Children and Women in Indonesia, Jakarta, Government of Indonesia and UNICEF; and T. Osteria (1988), "A Research Proposal on Strategies for the Health Management of the Urban Poor; a Comparative Analysis of Four Cities in the Asian Region" (unpublished).

19. See note 4 and C. Surjadi (1990), "Preliminary Analysis of the Immunization Survey at Subdistrict of West Pademangan and Subdistrict of Penjaringan", Atma Jaya University (unpublished).

20. See Lenz in note 13.

21. See Budiman et al. in note 13.

22. See note 13.

23. See Budiman et al. in note 13.

24. See note 4.

25. See Lenz in note 13.

this study used respondent's diagnoses of diseases and the diagnosis of malaria may be incorrect, and there is little reported entomological evidence of *anopheles* mosquitoes in Jakarta.

Nutrition is often poor. A cross-sectional nutritional survey of those under five living in a West Jakarta *kelurahan* showed that 6 per cent of children were less than 71 per cent weight for height, indicating acute malnutrition.[26]

d. Health services and health related behaviour

Traditional practitioners are widely used by the population. National figures suggest that 26 per cent of adults seek no assistance if ill, 37 per cent go to a government institution, and 37 per cent use a traditional or private practitioner.[27] An analysis of a national socio-economic survey conducted in 1978 examined health care utilization patterns, splitting socio-economic groups into three income levels: data about the low income group in Jakarta are quoted below. If a member of a household had been ill, 19 per cent used a public health facility and 10 per cent went to a traditional practitioner's residence and the rest treated themselves.[28] Some studies suggest the use of traditional practitioners in childhood illness is less common: a survey of 393 ill children in West Pademangan in Jakarta showed that when a child was ill, 0.5 per cent used a traditional practitioner.[29] Nevertheless, for some conditions, children may be taken to the traditional practitioner, for example, if they cry a lot or cannot sleep.[30]

Government health service utilization patterns in Jakarta have been documented recently.[31] Some studies suggest that income has a strong effect on health service use and that low household income is a barrier to health service utilization.[32] Surjadi reported on a longitudinal study from a poor North Jakarta *kelurahan*: when people were ill, 37 per cent used home remedies, 27 per cent used medicine bought at small shops, 10 per cent went to a public health facility and 12 per cent used private practitioners.[33]

Since 1985, the Indonesian government has launched a campaign to promote *posyandus* (integrated health posts). The *posyandus*, which target children under five years old, pregnant women, lactating mothers and women of child bearing age, are organized by voluntary female workers. The *posyandu's* activities are nutrition (growth monitoring of under-fives), diarrhoeal diseases control, immunization, family planning and mother and child health (antenatal care, tetanus toxoid vaccination, iron folate and vitamin A supplements, and health education).

In 1988, there were 2155 *posyandus* in Jakarta and at present almost all *kampungs* in Jakarta have one *posyandu*. As a result of social marketing of the *posyandu*, the attendance of children has increased specifically in the slum areas. Those using *posyandus* generally have low incomes. In 1987, in north Jakarta 21 per cent of mothers went to *posyandus* to immunize their children and 18 per cent had measles immunization. In 1989, in the same study area, 60 per cent of children were immunized at *posyandus* and 44 per cent had measles immunization.[34]

Use of antenatal and obstetric services is patchy. Some studies show 70-90 per cent of women visited health centres at least once during pregnancy.[35] However, fewer than half of women were vaccinated with tetanus toxoid. Traditional birth attendants were important: 50-60 per cent of deliveries in poor areas were attended by such a person, and 40 per cent by a midwife. Fifty two per cent of deliveries were in the woman's home and 13 per cent were in their parents home, usually their home village. Other studies confirm the importance of traditional birth

26. See Budiman et al. in note 13.

27. G. Williams, personal communication.

28. Chernichovsky, D. and O.A. Meesook (1988), "Utilization of Health Services in Indonesia", *Social Science and Medicine* 23, pp. 622-630.

29. Lamtiur and C. Surjadi (1988), "Population Health Systems Interaction in Selected Urban Depressed Community: a Case Study of Subdistricts of West Padmangan, North Jakarta", Atma Jaya Research Centre monograph.

30. See note 14.

31. Chandra, H. (1988), *Dinas Kesehatan DKI Jakarta*, Kesehatan Dalam Angka, 47 pages.

32. See note 28.

33. See note 4.

34. See note 28 and C. Surjadi (1990), Preliminary analysis of the immunization survey at Subdistrict of West Pademangan and Sub-district of Penjaringan, Atam Jaya University (unpublished).

35. See note 4.

attendants: in one study, assistance at birth was by a traditional practitioner in 83 per cent of cases and by a midwife or paramedic in 17 per cent. Few women had been seen antenatally by a doctor (13 per cent), but 29 per cent had seen the traditional practitioner.[36]

Hygiene practices appear to be limited by poor living conditions in terms of space, water supply and sanitation facilities. Wells and river water have been found to be heavily contaminated with enteric pathogens,[37] and 38 per cent of food bought from street vendors was found to be contaminated with coliform bacteria.[38]

Breast feeding lasts an average of 7.5 months in urban areas and, in Jakarta, 16 per cent of babies are breast fed only, 63 per cent are fed by breast and bottle, and 21 per cent are bottle fed.[39] The frequent use of bottle feeding may be partly related to maternal employment.

V. DISCUSSION

THE INFORMATION ON the health of the urban poor in Jakarta emphasises the need for environmental change. Many of the common causes of illness relate to environment and living conditions (gastroenteritis, gastrointestinal parasite infestation, dengue, and acute respiratory conditions). Second, the data on socio-economic status confirms the poverty of a large segment of Jakarta's urban population, and this factor in itself is likely to effect health and the use of health services. It is likely that, in the absence of environmental and socio-economic change, the impact of even the best health services covering all segments of the urban poor would be limited by poor environmental conditions and poverty.

Health service utilization information shows a high use of traditional practitioners and self medication for adult illnesses. Thus managers of health programmes for the urban poor need to examine in more detail the beliefs and utilization patterns of people, and take these into account when planning and running health services for these groups. In particular, the low level of formal education among adults suggests that health education and motivation programmes must be both intelligible and relevant to the majority of the urban poor.

Data on disease patterns is useful in public health strategies applied through primary health services. In particular, the high incidence of diarrhoea indicates a need both to provide families with information about the home management of gastroenteritis and for health services to detect those children requiring follow-up or in-patient care. Other diseases also indicate a need for specific interventions to control them: for example, the evidence of epidemics of dengue fever suggests a need for an epidemiological monitoring system through the health services with an early response to reduce vectors in the event of an outbreak of the disease.

The next stage for improving health services in this context includes a more precise demographic mapping of the urban population, and available health services, and more understanding of the level to which the services are used by the urban poor. This may require a sample household survey combined with qualitative techniques to assess people's perception of the existing services. The further extension of services for the urban poor is also needed and these services must be sufficiently flexible to cater for the needs of the target group. The further monitoring of utilization and coverage, particularly of children with illnesses and vaccination against immunisable diseases, will assist managers in maintaining and improving health care programmes for children.

36. See note 28.

37. Gracey, M., D.E. Stone, Sutoto and Sutejo (1976), "Environmental Pollution and Diarrhoeal Disease in Jakarta, Indonesia", *Journal of Tropical Paediatrics* 22, pp. 18-23.

38. See note 4.

39. See note 4.