Primary Health Care System, Narrowing of Rural–Urban Gap in Health Indicators, and Rural Poverty Reduction: The Experience of Iran

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Primary Health Care System, Narrowing of Rural–Urban Gap in Health Indicators, and Rural Poverty Reduction: The experience of Iran

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Abstract.

Rural residents, living in some 60,000 villages scattered across the vast area of Iran, have traditionally been the most deprived segment of Iranian population in terms of income, education and health status. The past two decades have seen a marked decline in the share of rural areas of the population and some improvement in their living standards. Yet, the average income/expenditure of rural households remains at about two-thirds of the urban households and a much larger proportion of rural population, particularly women, than the urban are illiterate. Nevertheless, period since 1980 has been associated with a striking improvement in the health status of rural population and the traditional urban-rural gap in various areas of health has been markedly narrowed. This is generally attributed to the innovative, comprehensive, community-based and relatively cheap primary health care system established since early 1980s. The aim of this paper is to present latest data on the narrowing gap between urban and rural areas of Iran in terms of a variety of health indicators. The results indicate how government investment in a low-cost, culturally acceptable and locally supported primary health care system can effectively change the health status of rural population and thus contribute to rural poverty alleviation programs.

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Primary Health Care and Rural Poverty Eradication in the Islamic Republic of Iran

1.0 Introduction

Rural populations are generally believed to be more deprived and poverty prone than their urban counterparts. This is partly due to their predominant engagement in agricultural activities which usually fall outside the modern, formal sector of economy. Moreover, because of their small and isolated nature, rural communities usually do not have the political clout enjoyed by large urban centers to compete for their due share of national resources. The isolated nature of rural communities also make it more difficult for national governments to provide the basic health and educational services needed to raise their living standards and prepare them for easy entry into the stream of development and modernization. The poverty of rural populations does not however remain within the boundaries of rural areas. The excess population usually moves to urban areas and becomes part of the urban poor.

The problem has received increasing attention over the past two decades and rural poverty eradication has emerged as a major priority area in international and national efforts to combat poverty (UNDP, 2000). With increased focus on rural poor it has become obvious that lack or inadequacy of income is just one and not necessarily the most important aspect of poverty. Lack of access to basic social services provided by the national government needed to improve quality of life and develop human capital may play a even more important role in empowering rural poor and helping them break the vicious cycle of poverty. Thus investment in basic social services and making services work for the poor, particularly the largely disenfranchised rural poor excluded from the main centers of decision making on resource allocation, has been recognized as a major means of poverty eradication (Anand & Ravaliion, 1993; World Bank, 2004).

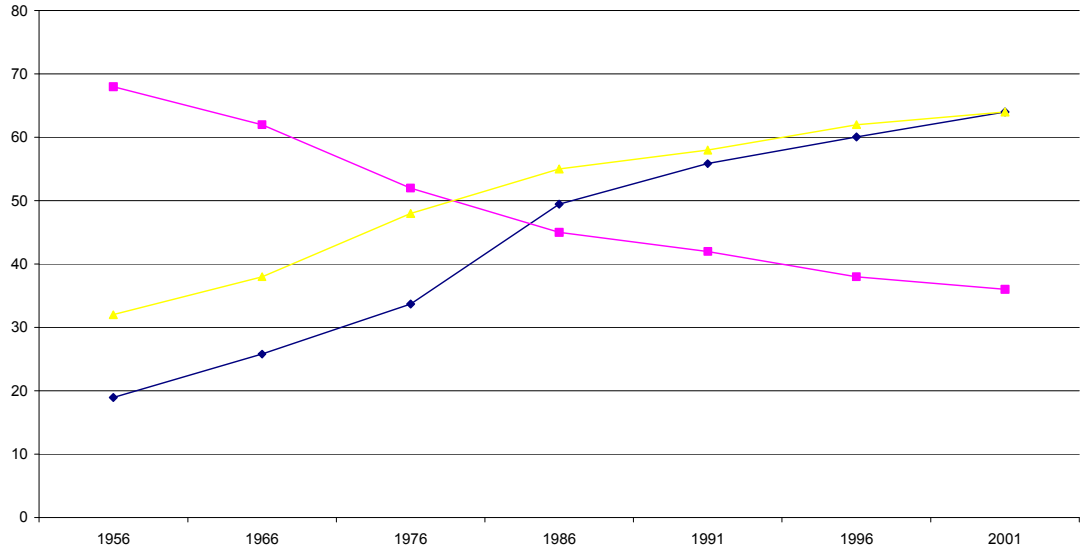
2.0 Changes in the size and relative share of rural population

According to the latest census taken in 1996, just over 38% of Iran's population of 60.05 millions lived in areas officially classified as rural. They inhabited some 66,000 villages or rural settlements scattered all over the country[*]. A tiny fraction (0.9% in 1996) of the rural population consists of nomadic tribes annually moving between summer and winter grazing grounds. Although the relative share of rural areas of the population has fallen considerably (from 68.4 in 1956 to 57% in 1976 and to 38.3 % in 1996), in terms of absolute numbers, there were more rural dwellers in 1996 (23.3 million) than in any of the previous four

[*] In 1996 the rural population of Iran consisted of 23.4 million individuals living in 4.44 million households, with an average household size of 5.2 (as compared with 4.64 for urban areas).

censuses. By 2001, according to official estimates (Statistical Center of Iran, 2001) Iranian population had risen to over 65 million of which 34% were living in rural areas.

Figure 1. Changes in the Population Size (in milions) and Share (%) of Urban and Rural Residents in Iran, 1956-2001.



Rural households have traditionally constituted the most disadvantaged section of Iranian society. Their relative disadvantage is clearly reflected in such indices as average annual income and expenditure, literacy rate, access to modern amenities and political power. Until 1960s the overwhelming majority of Iranian villagers were landless peasants dominated by mostly absentee big landlords. They were often treated as part of the property of the landlord and changed hands along with the land on which they toiled. In early 1960s the government launched a relatively successful land reform program that put an end to the domination of big landlords. There were also efforts to improve the health and educational status of rural population by sending mostly urban military recruits with secondary or higher education to act as teachers, health workers and agricultural extension agents in rural areas.

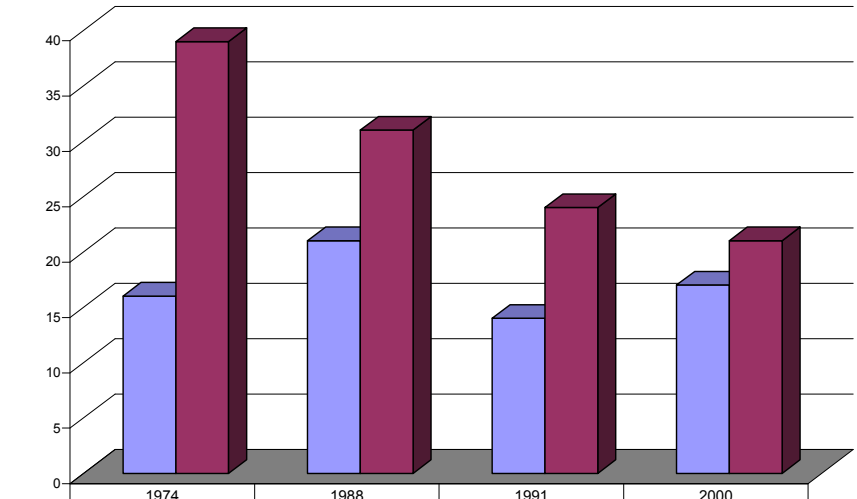
Despite these efforts, the rural population had benefited little from the economic boom that characterized the last decade of the Shah's rule. The policy to keep the price of basic foods low through importation of agricultural products had in fact acted against the interests of the newly landed peasants most of whom had to eke out a meager living by cultivating a small piece of land. Moreover, most of the villagers who had previously worked on farmland cultivated by the landlord had not benefited from the land reform program. They had no choice but to migrate to urban areas and seek employment as unskilled laborers. Many of them ended up as urban slum dwellers and eventually joined the ranks of more fortunate but politically repressed and disgruntled urban middle classes who rebelled against and put an end to the Shah's regime in 1979.

3.0 Changes in Health Status and Outcomes

According to the general census of population and housing carried out in late 1976, over half of Iran's population was living in rural areas. A carefully designed population growth estimation study conducted between 1973-1976 (Statistical Center of Iran, 1977) had revealed striking differences between the major health indicators of urban and rural areas. Crude death and infant mortality rates of urban and rural areas were 8.3 vs. 13.9 per 1000 and 76 vs. 130 per 1000 births, respectively. A similar study carried out by Tehran School of Public Health in 1973-1974 (Nehapetian & Khazaneh, 1977) had revealed even sharper differences: Crude death rates of 8.0 vs. 15.9 per 1000; infant mortality rates of 61.6 vs. 119.8; life expectancy at birth of 60.7 vs. 50.7 for men and 62.0 vs. 51.4 years for women, respectively. These differences were not surprising in view of the prevailing urban-rural disparities in terms of living standards and access to such basic facilities as safe drinking water, electricity, bathing facilities, etc. In 1979, for instance, only 19.9% of rural households (as compared with 90% of the urban) had access to piped water while only 27.7 of them (versus 97.8% of their urban counterparts) had access to electricity. Similarly, only 2.8% of rural households (as compared with 45.7% of the urban) had a hot water bath/shower inside their dwelling units.

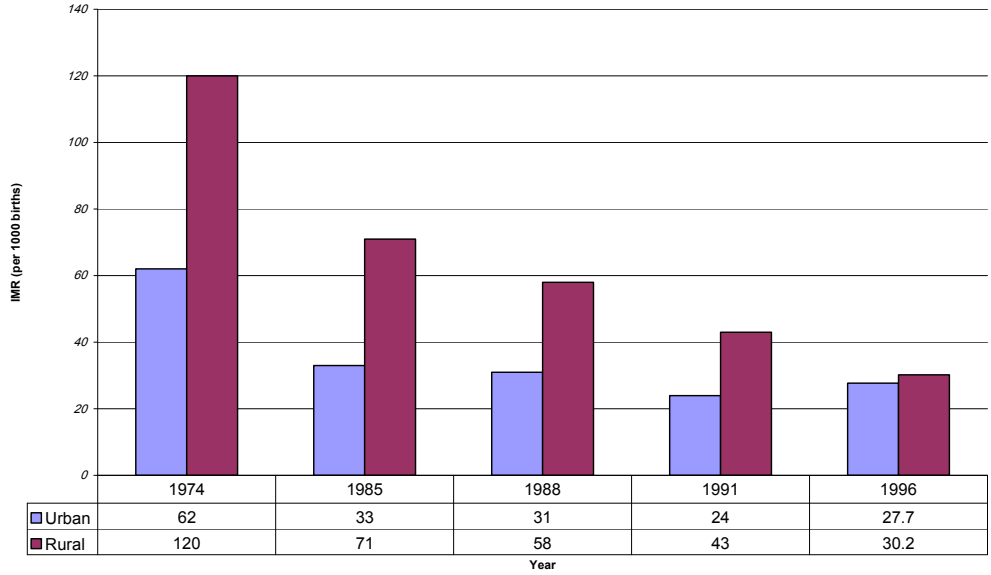
There is some evidence that the period immediately following the Islamic revolution was associated with an improvement in the general health and welfare of Iranian society as a whole and some reduction of the urban-rural gap in basic health indicators. The results are clearly reflected in Neonatal, Infant and Under-Five Mortality Rates (Figures 2-4). By 1985, infant mortality which was above 105 in mid-1970s had dropped to just over 50 per 1000 (33 versus 71 per 1000 in urban and rural areas). Maternal mortality ratio which had been above 222 per 100,000 births (120 vs. 370 in urban and rural areas) in 1970s had fallen to around 150 (77 vs. 233 in urban and rural areas). There was however little change in the

Figure 2. Neonatal Mortality Rates (per 1000 births) of Urban and Rural Areas of Iran, 1974-2000



	1974	1988	1991	2000
Urban	16	21	14	17
Rural	39	31	24	21

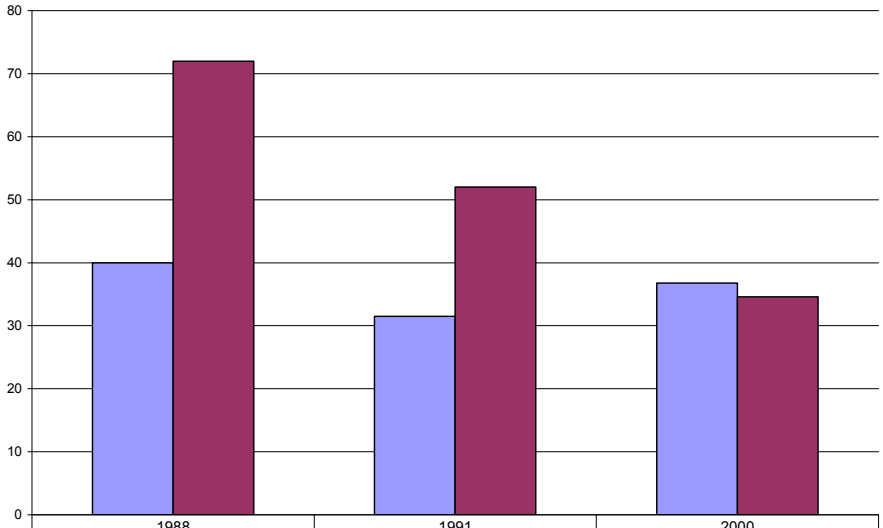
Figure 3. Infant Mortality Rates of Urban and Rural Areas, 1974-1996



	1974	1985	1988	1991	1996
Urban	62	33	31	24	27.7
Rural	120	71	58	43	30.2

relative position of rural and urban populations. In 1985, for example, the IMR of rural areas was still about twice that of urban areas. By late 1980s there was more clear evidence of the narrowing of the urban-rural gap. Surveys carried out in 1988 showed that while the IMR of urban areas had dropped only slightly (from 33 to 31), that of rural areas had declined substantially (from 71 to 58) since 1985. Similarly, while the MMR of urban areas had declined only by 36 units (from 77 to 41 per 100,000 births), that of rural areas had dropped much more precipitously (from 233 to 138 per 100,000 births). The trend is confirmed by large-scale surveys conducted in 1991, 1996. By 1991, the IMR of urban and rural areas had fallen to 24 and 43 per 1000, respectively. Corresponding maternal mortality ratios were 26 and 52 per 100,000 births. The latter figures had not changed by 1996 when a large scale

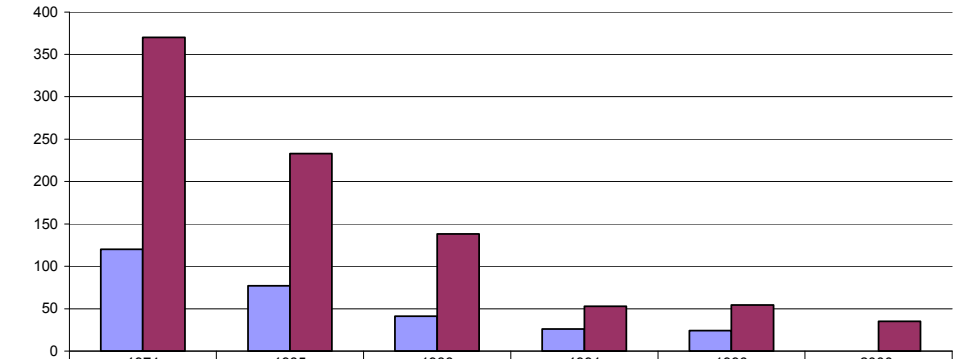
Figure 4. Under 5 Mortality Rates (per 1000) of Urban & Rural Areas, 1988-2000



	1988	1991	2000
Urban	40	31.5	36.8
Rural	72	52	34.6

Reproductive Age Mortality Survey (RAMOS) revealed MMR figures of 24.3 and 54.5 for urban and rural areas (Figure 5).

Figure 5. Urban Rural-Differences in Maternal Mortality Ratios, 1974-2000



	1974	1985	1988	1991	1996	2000,
Urban	120	77	41	26	24.3	0
Rural	370	233	138	53	54.5	35

The monumental DHS-type survey covering a sample of over 114,000 households equally divided among rural and urban areas of all provinces which was carried out in October 2000 has revealed neonatal, infant and under-five mortality rates which, although not entirely consistent with findings of earlier surveys, confirm the overall downward trend of these rates and the continuing narrowing of urban-rural differences. It indicates an urban-rural difference of 3 units or less with respect to neonatal (20.6 vs.17) and infant mortality (27.7 vs. 30.2) rates. Under five mortality rate of rural areas (34.6) revealed by this survey is actually smaller than that of urban areas (36.8). The difference is not, however, statistically significant and corresponding figures derived through indirect methods of estimation (42.5 vs. 31.7) indicate a higher but much reduced under-five mortality rate for rural areas. The maternal mortality ratio of rural areas derived from data collected by the PHC system indicates a figure of 35 only (as compared with 54.5 in 1996)

There is good evidence to suggest that the changes noted above are due to deliberate public health interventions aimed at eradicating the traditional sources of morbidity and mortality. According to a Multiple Indicators Cluster Survey (MICS) conducted in 1997, the overwhelming majority of both urban (96.7%) and rural children (97.1%) had received their third shot of DPT vaccine**.** Similarly the overwhelming majority of children under one year in both urban (96.8%) and rural areas (97.1%) had received their third shot against polio. Only 4.6% of rural and 3.5% of urban children under one year had not been vaccinated against measles. Less than 2% of either urban (1.5%) or rural (1.2%) babies under one year had not received BCG vaccine. About 10% of both rural (10.8%) and urban children (9.4%) under one year had not received their third shot of hepatitis B vaccine.

As a result of these interventions, there was little difference between the proportion of urban (10.1%) and rural (12.8%) children under five who had suffered from diarrhea. The proportion of children under five with diarrhea who had received antibiotic drugs was almost

the same in urban (54.5%) and rural (51.5%) areas. Similarly the proportion of children under five with diarrhea who had received ORT was very similar in urban (45.5%) and rural (51.8%) areas. The proportion of mothers who had received less than two antenatal visits (ANC) during the past five years was actually higher in rural (27.6%) areas than the urban (21.1%). Similarly, the proportion of pregnant women not vaccinated against tetanus was higher in urban areas (25.1%) than in the rural (21.4%). This was despite the fact that deliveries by an untrained person were much more common in rural (30.4%) areas than the urban (4.7%). Prevalence of blindness, deafness, physical handicap and mental retardation among children aged 6-17 was less than 1% in both rural and urban areas.

To further underscore the importance of specific public health measures (rather than general improvement in the economic and welfare status of rural households) in filling urban-rural gaps in health outcomes listed above, it may be of interest to note that according to the same MICS study, by 1997, illiteracy rate of married women aged 15-49 was still over three times higher in rural areas (55.6%) than the urban (15.4%) and the proportion of children aged 11-17 years not attending school was three times larger in rural areas (34.3%) than the urban (11.2%). Similarly, the proportion of rural women aged 15-49 who were not covered by any medical insurance (67.1%) was twice that of urban women (38.0%) and over three quarters of rural children under 5 as compared with 49% of the urban had no health insurance coverage. Corresponding figures for rural and urban children aged 6-17 were 68.4% and 40.2%, respectively.

The DHS-type survey carried out in 2000 provides further evidence of further improvements and the continuing narrowing of the gap between urban and rural areas in terms of various health indicators. According to this survey:

- 98.5% of rural and 95.2% of urban households use iodated salt.
- 82.9% of rural women as compared with 94.8% of the urban had received at least one antenatal care (ANC) visit.
- 87.9% of rural women as compared with 92.9% of urban women had received two antenatal care (ANC) visits.
- 75.2% of rural women (as compared with 82.4% of the urban) had received at least six ANC visits.
- Coverage of tetanus vaccination by rural (77.8%) and urban (80.7%) women was very similar.
- Yet, over a quarter (25.3%) of rural women (as compared with only 5.2% of the urban) had delivered their last baby at home;
- The incidence of deliveries by Caesarian section (CS) in urban areas (41.9%) was almost twice that of rural areas (22.5%).
- Although 21% of deliveries in rural areas (as compared with only 4.5% of the urban) had been attended by a traditional birth attendant (TBA) the proportion of rural (56.5%) and urban women (63.9%) receiving at least one postnatal care (PNC) visit is very similar.
- A slightly larger proportion of rural women (31.6%) than the urban (30.7%) had received at least two PNC visits.

- The proportion of high-risk pregnancies due to age (that is, among women aged below 19 years or above 35 years) and parity (namely, among women with four or more children) were also quite similar in urban (7.3%) and rural (10.7%) areas.
- With respect to formal education, however, rural residents were still twice as likely (27.6%) as the urban (13.6%) to be illiterate. In fact, over a third (34.6%) of rural women aged 6+ years (as compared with 18.2% of urban women and 20.6% of rural men) were illiterate in 2000.

As a result of changes in health status listed above, crude death rates have dropped substantially and life expectancy at birth figures have gone up to about 70 years. More important, thanks to the significant fall in morbidity and mortality caused by infectious diseases of childhood, the mortality pattern of Iranian population has changed dramatically becoming very similar to that of developed western nations. Currently the leading causes of death are CVAs, cancers, and road accidents.

As the main innovation in the public health system of Iran since the Revolution is the introduction of an active and comprehensive primary health care system (PHC) in early 1980s, there is no doubt that the PHC system has played a major role in bringing about the improvements in the health indicators of Iranian population described above. Because of the more active presence of the PHC system in rural areas and the almost exclusive dependence of the rural population on this system, the narrowing of urban-rural gap in access to public health services can largely attributed to this system. Therefore, a full description of the system and its particular organization and activities in rural areas is justified.

4.0 Relative Poverty of Rural Population

Despite all efforts made by the IRI government and the relatively good performance of the agricultural sector in the past several years, rural population remains the poorest and the most deprived section of Iranian society. The relative poverty and deprivation of the rural population is clearly reflected in the following indicators:

1. The annual per capita income and expenditure of rural households has vacillated around one half to two-thirds of that of urban households over the past two decades .
2. Almost two-thirds of rural households fall below the median of urban households in terms of annual expenditure and income.
3. Rural households spend a higher proportion of their expenditure on food (41-45%) than the urban households (26-31%).
4. The overwhelming majority of rural households live in substandard dwelling units. In 1996, for example, almost one third of rural households as compared with only 5.7% of the urban lived in houses made of mud brick.
5. Rural households live in more crowded dwelling units (2 inhabitants per room) than the urban (1.5 persons per room).

6. Only 3.4% of rural households as compared with 62.7% of the urban have access to piped natural gas for heating or cooking purposes.
7. 16.7% of rural households as compared with 3.7% of the urban do not have a refrigerator.
8. Just over one fifth (21.4%) of rural households as compared with 63.2% of the urban have a telephone.
9. Proportion of rural households owning a car (12.4%) is less than half that of urban households (25.2%).
10. Official estimates of the population below poverty line for the country as a whole is about 17%. Corresponding figures for urban and rural areas are 12.2% and 26.0%, respectively (PBO,1996).
11. Using one half of the median household expenditure as a measure of poverty, Tabibian et al (2000) have estimated that between 1985-1997 about 22% of the rural households as compared with 14% of the urban were below the poverty line. If a quarter of the median expenditure is used as the measure of poverty, the proportion of urban and rural households falling below the poverty line becomes 4% and 9%, respectively.
12. Between 1985-1997, rural households accounted for 82% of households occupying the lowest income/expenditure decile (Tabibian et al, 2000).
13. Despite their obvious poverty, rural households are not entitled to most of the subsidies provided by the government. A very small proportion of the rural population in fact have any share of the heavily subsidized oil and other energy factors mostly used by the better off sections of the urban population.

5.0 The Role of PHC

A variety of factors in addition to the PHC system are known to have contributed to improvements in health indicators. Among these one may think of urbanization, rise in literacy, advances in environmental health and general living standards of Iranian society. Expansion of schooling opportunities through both the formal system of education and the Literacy Movement Organization established after the revolution deserve special credit for the rise in the literacy and level of education of the disadvantaged groups, particularly rural women. Ironically, the sex segregated system of education adopted after the revolution would seem to have contributed to women's education particularly at the post-primary level by alleviating the fears of conservative parents and religious leaders in rural and tribal areas. The rural community development program launched by the Reconstruction Crusade (Jihad) Organization created shortly after the revolution has played a major role in building rural roads, extending electricity to rural areas, providing villagers with piped water, building public bathhouses and other means of environmental sanitation.

It is, however, unlikely that these efforts would have succeeded in reducing infant and child mortality, eliminating major infectious diseases of childhood, and improving the health of mothers without the specific measures taken by the PHC system, that is promotion of

healthy attitudes and behaviors, universal immunization of children, encouraging mothers to breastfeed, use iodated salt, and provide appropriate treatment for children suffering from diarrhea and acute respiratory infections (ARI). The presence of the community based and caring Behvarzes in the village and their constant interaction with the community as well as their prompt and proactive interventions have enabled them to ensure that health messages would not go unattended to. Moreover, the ability of the PHC system to support the health messages by providing easy access to the means needed (e.g., vaccines, ORT, essential drugs, etc.) where and when required would seem to have helped enormously in bridging the traditional gap between knowledge, attitudes, and practice. According to the DHS (2000), of rural women who had been pregnant during 1998-2000, 77.5% had visited a rural health house. Corresponding figure for urban women was only 3.4%. Sixty four percent of rural women as compared with 71% of the urban had delivered their last child in a government hospital/maternity center. However, only 5.6% of rural women and 1.4% of the urban had delivered their baby in a maternity facility attached to a health house. In contrast, 21.2% of urban women as compared with 3.8% of the rural had used a private hospital/maternity center for their last delivery.

With regard to the health care of children, too, the DHS (2000) reveals a remarkable degree of similarity between urban and rural areas. The proportion of children under 5 years who had suffered from an illness during the 2-week period before the survey was the same (41.6%) in urban and rural areas. Almost the same proportion of urban (93.1%) and rural (92.0%) mothers had treated their sick children correctly. Only a slightly higher proportion of rural children (13.7%) aged 0-59 months than their urban counterparts (11.8%) were reported to have had diarrhea during the preceding two weeks. There was virtually no difference between urban and rural mothers with respect to the correct treatment of the child suffering from diarrhea, the rate being astonishingly high (91%). This is despite the fact that a much higher proportion of urban mothers (51.4%) than the rural (33.3%) have used private doctors or clinics for the treatment of the child with diarrhea. Rural mothers are over twice as likely (25.7%) as their urban counterparts (10.5%) to have taken their sick children to a public clinic/facility. Although the proportion of children under five years with acute respiratory infection in the previous two weeks is slightly higher in rural areas (25.9%) than in the urban (22.8%), equally high proportions of both rural (91.8%) and urban mothers (93.4%) have correctly dealt with the illness.

A singularly convincing example of the role played by the PHC system in Iran is provided by the family planning program. Iran had run a widely advertised family planning program for over 10 years before the revolution. By 1976 about 20% of rural couples (as compared with 54% of the urban) were using contraceptives. The program was suspended after the revolution and the new government adopted a pronatalist policy which was further reinforced by economic incentives for having large families built into the nation-wide rationing system introduced in 1981. As a result, the fertility rate rose substantially and the population grew at the unprecedented rate of 3.9% between 1976-1986. After the war, the

authorities realized that such a high rate of growth was inconsistent with the economic reconstruction and development plans of the country and the family planning program was revived in 1989. The program has been extremely successful. By 1996, over 74% of eligible couples were using a contraceptive and the total fertility rate had dropped from 6.5 to 2.6 children per woman. More interesting, the traditional gap between urban and rural areas had been substantially narrowed. In fact the prevalence of modern contraceptives advocated by the program was higher in rural areas and the remaining urban-rural difference in CPR was mainly due to the wider use of traditional methods (particularly withdrawal) by the better educated urban couples.

Results of the DHS study (2000) have squarely confirmed earlier evidence regarding the enormous success of Iran's family planning program. Almost two thirds of all married couples aged 15-49 report using a contraceptive. The slightly lower contraceptive use rate of rural women (67.2%) as compared with the urban (77.4%) is mainly due to the fact that the latter are more likely than the former (27.8% vs. 13.9%) to use withdrawal, a method not recommended by the program. In fact a higher proportion of rural women using any contraceptives (85.1%) than the urban (71.3%) use the more effective modern methods provided and promoted by the program. Over three quarters of women using modern contraceptives report public facilities as their source of supply. The rate is much higher among rural couples (91.3 %) than the urban (66.8 %). Among women using the contraceptive pill, 75.5% of rural women as compared with 57.4% of the urban report having received instructions regarding its proper use from their source of supply. As a result, 55.8% of women who had received the pill from a public source (as compared with 38.7% of those using a private source of supply) were found to be using it correctly. Nevertheless, the proportion of women using the pill correctly was the same in urban (51.9%) and rural (50.8%) areas.

6.0 Financing of the PHC

The construction and maintenance of the PHC system is entirely financed by the national government through funds provided in the annual budget of the Ministry of Health and Medical Education. The exact amount of funds spent on PHC services cannot, however, be easily separated from funds allocated to other preventive, curative and administrative services carried out by the MOHME. In fact, below the health center level, the services provided by the PHC system are so closely enmeshed with other services that it is almost impossible to calculate their relative share of the budget. The relative cost of PHC services in rural areas is also difficult to ascertain because most of the more expensive specialist, diagnostic, in-patient care, rehabilitation and follow up services lie outside the rural area.

There is, however, general consensus that the cost of building, maintaining and running a rural health house or a rural health center is much lower than that of similar health facilities in urban areas. Funds needed for buying a piece of land in urban communities (particularly in

Tehran and other major cities) usually outweighs the total cost of land, building materials and labor needed for the construction of a rural health center. Similarly, the cost of training, recruitment and maintenance of the variety of better trained and more specialist health care providers working in urban health facilities is much higher than that needed for training and remuneration of rural health workers. Urban areas are the main beneficiaries of Iran's relatively well developed private health sector and its rapidly expanding social security system which historically has only addressed urban industrial work force and/or the urban self-employed. Over the past few years, however, a contributory *universal health insurance system* has been established which is designed to cover the hospitalization and tertiary care of both urban and rural population. Rural residents have, however, shown little enthusiasm to join this system and make the annual contributions as long as they are healthy and do not need its services. To encourage rural residents to participate in this system and get familiar with its long term advantages, the government has recently decided to extend insurance coverage to rural families when a family member is brought to a hospital or other tertiary care facility. The initial franchise of those who cannot afford to pay is also undertaken by the government through special funds earmarked for this purpose by the Imam Khomeini's Relief Committee, the semiautonomous main social assistance organization of Iran.

There is indeed good evidence regarding the lower cost of health care services available in rural areas. The bulk of health care services offered by the rural PHC are carried out by Behvarzes and other paramedical cadres whose training costs much less than the medical professionals employed in urban PHC units. The per capita public expenditure on health in 1999 is estimated to have been around $171.4 of which about $71.5 (41.7%) is accounted for by public funds allocated to the MOHME. Multiplying the latter figure by 1500 (the average number of people covered by a rural health house, including three Behvarzes) amounts to over $100,000. This is equal to the average annual salary of more than 50 Behvarzes.

A perusal of the detailed government budget for various district health authorities (Medical Universities) in 2001-2 is given in Tables 6 and 7. As shown in these table the average share of rural ambulatory services of the total government budget allocated to different districts varies between 1.79% (in Tehran UMS) and 11.79% (in Zabol UMS). Similarly, the budget earmarked for medication used in the ambulatory treatment of rural patients varies from 1.75% of the total budget (in Qom UMS) to 7.07% (in Golestan UMS). The bulk of the budget allocated to rural areas is classified under the general heading of "rural public health". The share of this item of the total budget varies from 29.91% (in Zabol UMS) to 2.04% (in Tehran UMS). Half of the 40 UMS spend less than 20% of their total budget on this item. On the whole, it would appear that, depending on the rural-urban composition of the population covered by the UMS, the total share of rural health services rendered by the PHC system of the allocated budget varies from 46.5% (in Zabol UMS) to 7.18% (in Tehran UMS). It amounts to around one third of the total budget in almost half of the 40 UMSs. The higher rates belong to relatively small district health authorities situated in predominantly

rural areas of the country. In contrast, in the highly urban, better developed provinces like Tehran, Esfahan, Qom, Semnan, Yazd, Khuzistan, Fars, and E. Azarbayjan less than 30% of government spending on health is earmarked for rural health services. The latter provinces are also likely to enjoy a much larger proportion of the total national spending on health by either the private sector or the social security system.

7.0 Resources

The number of Health Houses, Health Centers, and Behvarzes functioning in different provinces in 2001-2002 are given in Tables 2-5. From these tables it is apparent that the rural PHC system of Iran has already succeeded to build a comprehensive network of 16,036 Health Houses, 2,296 Health Centers, 473 Maternity Facilities, 241 Behvarz Training Centers and 44 Disease Control Posts situated in border areas. These establishments are staffed by 25,468 Behvarzes, 19,287 Health Assistants, 9,889 Health Technicians, and 5,372 medically qualified doctors. In contrast, the urban branch of the PHC system consists of 2,212 urban health centers and 1,118 urban health posts. The system is backed by some 300 District Health Centers and about 600 hospitals located in urban areas with over 98,000 beds funded and administered by the MOHME and other public agencies. The number of general practitioners employed by the rural PHC system is about two-thirds of the total number (8,568) of GPs working for the MOHME. In contrast, all of the 12,000 odd medical specialists employed by the MOHME are located in urban areas, particularly in big cities with a medical university, and their services are only partially, if at all, available to residents of small villages scattered over Iran's vast land area. In 2001, for example, out of 152,396 paramedics employed by the MOHME only about one-sixth (25,468) were Behvarz. In contrast there were about 25,074 university trained nurses and 27,200 health workers/assistant health workers, 10,223 laboratory technicians, and 8105 trained midwifes employed by the MOHME, the overwhelming majority of them working in urban areas.

9. Concluding Remarks

From evidence presented above, it is obvious that the IR Iran has developed a fairly efficient and cost effective primary health care network. The network has played a major role in providing basic public health services and narrowing the traditional gap between urban and rural areas in terms of various morbidity and mortality indicators. The system would seem to have been particularly effective in meeting the needs of the traditionally neglected rural areas.

The relative success of the rural PHC would seem to be due to two main factors. The first and probably the most important is the innovative idea of training and employment of enthusiastic young girls and boys as behvarz and requiring them to stay and serve the rural community from where they come from. This has provided

rural health houses with a cadre of permanent health workers knowledgeable about the health and cultural conditions of the area and available on almost full-time basis. Although their salary and living conditions is by no means attractive by urban middle class standards, they are far above what young people, particularly women, with junior secondary education can expect to get in a typical rural community. This relative economic advantage plus the security and prestige traditionally associated with permanent government employment in Iran have been able to imbue the young behvarz with a measure of motivation, enthusiasm and dedication that is rare among better paid health and administrative workers in urban areas. Fortunately, the educational program and procedures used by the Behvarz training centers is also designed to encourage and reinforce the initial enthusiasm of the Behvarz. The detailed work plans developed for the daily activities of the rural health houses and possibility of constant monitoring of the activities of the Behvarz through periodic field visits by people from the rural health center, the district Behvarz training Center and other representatives of the PHC program have gone a long way in ensuring that the facts and principles learned by the student Behvarz will not be put on shelf once they enter the world of real practice. The close relationship between the Behvarz and the village community also helps provide a measure of community involvement, supervision and reinforcement that is often missing in urban areas.

The absence of factors described above can explain the relative inefficiency of the urban health centers. There is no urban equivalent of the rural behvarz and the increasingly impersonal nature of urban community life, particularly in big cities, excludes the possibility of close familiarity and constant availability that are the major characteristics of the rural health workers. The clinic-based and non-proactive approach of urban health centers and health providers has further undermined their acceptability by the local community. The project to train and use local women as community health promoters in urban health posts has met with limited success due to lack of incentives and continuity.

Moreover, urban areas are the main concentration points of both private sector and highly specialized public health facilities. Thus primary health services offered by urban health centers have to compete with similar services available through other providers. In view of the relatively low cost of ambulatory services and medication and the fact that the majority of urban dwellers are covered by some kind of health insurance scheme which can take care of the more expensive laboratory and diagnostic services, the urban population is not in any way forced to use the basic services available through urban health houses. Promotion of such public health measures as vaccination, use of iodated salt, breast-feeding and childcare is usually

done through periodic health campaigns involving mobilization of other organizations (e.g., , schools and *Basij* militia) and mass media.

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