In the preceding chapters an attempt has been made to assess the current and prospective requirements and availability of nursing manpower within the frame of the health service development of the country. However, before embarking on the statistical exercise on estimation of current & prospective supply and requirements, an attempt has been made first to elaborate upon the linkages between the health manpower planning process and the planning for health care delivery system. A clear understanding of the integration of the different functional elements of the health services and the health manpower development is essential to place the various activities under HSMD mechanism in proper perspective. For this, a conceptual frame has been developed indicating the various components of health service system and development of the manpower planning process in Chapter II.

Manpower is a critical and important component of the health care delivery system. It is a basic resource; nothing happens to other resources unless there is adequate manpower with requisite skills to effectively utilise them. In India, the development of health manpower has taken place in isolation of the process of health service development. Consequently, there had been an over production of doctors,
specialists and super-specialists at the cost of the production of other categories, which are equally important to provide an adequate outreach of health services at the grass root levels in a cost effective manner. This has further resulted in discontentment, poor performance and mal-distribution of the scarce manpower resource due to lack of coordination between different components of manpower planning process i.e. development, utilisation and distribution. Another major consequence of the lopsided process of development has been emergence of enormous gaps in the access of people to health care services in the rural and urban areas and in urban areas between the poor and the rich. This chaotic situation in fact underlines the need for undertaking health manpower planning in a scientific manner in consonance with the health service needs of the population. The problem for study in chronological order is developed in Chapter I.

To ensure an adequate provision of the wide variety of manpower with requisite skills, it becomes essential to know what is the current stock of available manpower in terms of number and as well in terms of skill levels to perform specific functions relevant to the given/envisaged health service system. There are a number of health manpower categories and the factors/conditions governing their requirement vary from category to category. Besides, there exist a number of conceptual and methodological issues involved in the measurement of available pool of a given category.
In the present context, therefore, we have confined our analysis to the nursing manpower. To begin with the various terms and concepts used to denote 'current availability' have been specified. For the purpose of the present exercise, the supply in terms of labour force stock have been adopted. None of the sources, however, provide data on current supply in terms of labour force concept. Therefore, various methodological issues emerged in bringing these data together in a consistent form. The dynamics of supply flow too has various dimensions. Again, their measurement presented complex problems. All these problems and issues have been elaborately discussed upon in Chapter IV and an adequate aggregative approach has been developed to measure the current pool of nursing manpower.

Similarly in the context of demand estimation, various terms like need, effective demand and requirements etc., are used to signify the need of the health services in terms of manpower requirements. An attempt has been made to define distinctly these terms and their relevance in the context of the present exercise on assessment of requirements for nursing manpower. A number of methods and techniques are often used to work out demand projections; but all of them are not applicable in the present context. Therefore, after a brief review of these various methods/techniques, appropriate techniques relevant to demand estimation for health manpower has been specified. An attempt has thereafter been made to work out the requirements of nursing manpower in
2001 by suitably applying those techniques in the light of the data available and other considerations (Chapter IX & X).

Ten different sets of estimates of requirements for general nurses and two sets of requirements of ANMs/LHVs were worked out on the basis of alternative assumptions and different approaches. Based upon the comparison with the probable supply in 2001, the likely shortages/surpluses are presented. Keeping in view the current availability of resources and the work load, the shortages are specified in terms of 'visible' and 'hidden' which need to be considered for formulating any strategic action with regard to the expansion programme of education/training facilities for nursing personnel (Chapter XI).

The broad approach adopted in the present exercise involved study of all the relevant literature available on the subject, critically examining their methodology and findings, collection and collation of statistical/non-statistical data available from various sources and discussion with officials from Government/non-Government organisations. It, therefore, involved examination of various data in terms of what these connote, their relevance in the present context, ready usability and if not what adjustments are required to make them usable and how these could be affected. The process was repeatedly undertaken as and when a problem was confronted with in the context of the specific item of work. Specific items of work undertaken in the study are building up of (i) base year stock of nursing
manpower for the year 1981; (ii) time series stock estimates for the different categories of nursing personnel during 1951 - 2001; (iii) statewise and locationwise availability of nursing personnel for the years 1971, 1981 and 1991 and (iv) estimates of requirements for nursing personnel in 2001 by states and by major functional areas. The salient findings of the entire exercise are presented in this chapter under the above four heads.

**Base Year Stock for the Year 1981 (Current availability)**

The estimates of available pool of current stock of nursing personnel for its different characteristics in the 1981 cross-classified by rural/urban areas along with the number of practical nurses have been derived by duly adjusting the data available from Census vis-a-vis the stock of qualified nurses built up through cumulative educational outputs. And further the cross-classification of the available stock by different characteristics have been developed by using the indicators available from the fragmentary data available from different sources, findings of the various field studies/surveys undertaken by different organisations at different points of time.

The main findings of the exercise are as follows:

1. The total availability of nursing manpower in 1981 was 230,249 comprising of respectively 117,749 qualified general nurses, 90,039 ANMs, 11,750 LHV's,
2336 B.Sc.(N) Degree holders, 6,900 Post Certificate Diploma holders; 1250 post certificate degree holders (PB.Sc.(N)) and 225 nurses with M.Sc.(N) degree. As such more than 90% of the available nursing manpower was constituted by general nurses and ANMs.

2. Among these qualified nursing personnel, a margin-al proportion varying between 6% to 8% were out of labour force, 92% of general nurses and nurses with diploma and degrees were in labour force and this percentage for ANMs and LHV's was 94%.

3. Of the qualified general nurses, about 6 to 7% were working in rural areas; while in case of ANMs/LHVs combined, this ratio was 69%.

4. In rural areas, more than the number available of qualified nurses, unqualified nurses (practicals) are noted to be functioning. This ratio is 57.4% of qualified general nurses, and it is only 8.0% in case of urban areas.

5. About 54% of the general nurses and those with degrees, are less than 29 years of age, while the percentage of them in ages 55+ was respectively 8% in case of general nurses and only 3% in case of degree holders.

6. Of the qualified nurses, 72.2% were working in public sector in 1971 and their corresponding in 1981 percentage was 78.8%.
7. The percentage of male nurses among the registered nurses was 6% in 1971 and 4.0% in 1981.

8. In 1981, as per the information from special Census Tables, 70% of the nurses were earning between 500-1,000 Rupees p.m. and 21% between 1000-1,500 rupees at 1981 price level. The information pertains to post certificate diploma and degree holder nurses. It is further noted that nurses are poorly placed relatively when compared to other professions.

9. According to CAHP survey findings, 56.5% of the nurses were engaged in function related to patient care followed by teaching and supervisory function engaging respectively 8.8% each and closely followed by administration engaging only 7.7%; leaving about 18% engaged in unspecified multiple function. For ANMs, however, the respective proportions engaged in different functions in descending order were 40%, 32% and 25% in activities relating to patient care, public health & family planning leaving only 3% for multiple unspecified function.

10. The number of nurses on the live register of employment exchanges is increasing over the last two decades. It has increased from 4,740 in 1979 to 8,353 in 1984 and to 13,583 in 1988. Their relative proportion to the estimated stock of general
nurses has increased from 4.80% in 1979 to 6.70% in 1984 and further to 9.15% in 1988.

11. The number of vacancies being notified to employment exchanges although has increased steadily during the period 1966-88, has remarkably gone down in relation to the number of graduating every year. As early as in 1966, the number of notified vacancies was 186% of the number of graduated that year; came down to 106% in 1971 further to 54% in 1981 and 32% in 1988. It reflects the trend of shrinking job opportunities in public sector for nurses.

12. As regards availability of nursing services in rural areas, the number of ANMs are being provided adequately to commensurate with the number of sub-centres being opened. The percentage of sub-centres functioning without the ANM was only 4.3% in 1991 and only 8.6% of the sanctioned posts for ANMs were lying vacant at that time.

Time Series Estimates of Supply of Nursing Manpower, 1951-2001

The time series estimates of stock of nursing personnel separately for certificate holders, diploma holders, degree holders, ANMs and LHV5 have been built up by accumulating outturns since inception of the course duly allowing for attrition. However, in case of general nurses, ANMs and B.Sc.(N) degree holders for whom the certain previous sets
of estimates are available from exercises undertaken by IAMR, Planning Commission, the previous estimates are also considered duly checking their [backward/forward] consistency vis-a-vis stock estimates obtained through accumulation of outturn since 1949, the earliest year for which the data on outturns are available from INC.

The mortality rate to account for depletion from the current stock at a point of time is assumed to be 0.4 percent per annum. With regard to emigration, it is assumed that general nurses (certificate/diploma/degree holders) have a better chance of emigration than ANMs and LHVs. A factor of 1.1 percent per annum is assumed for general nurses for this aspect while it is assumed to be only 0.2 percent per annum. The data on outturns for each of the course upto 1990 have been obtained from INC and for future year i.e. 1991-2000, these are assumed to remain constant at the level of 1990.

The findings of the exercise are:-

13. The number of General nurses which was 117,749 in 1981 will increase to 184,779 in 1991; and further to 271,077 in 2001. The number of ANMs which was 90039 in 1981 will increase to 168,895 in 1991 and further to 264,567 in 2001. These two categories together will constitute a major proportion of the total availability of nursing manpower, the respective proportion being 90.2% in 1981; 89.4%
in 1991 and 88.5% in 2001. The stock of LHVs will, however, continue to be nearly 1/6th of the estimated stock of ANMs.

14. The number of nurses with M.Sc.(N) degree, which was only 16 in 1966 has become 36 in 1971, 225 in 1981, 596 in 1991 and 887 in 2001. The number of B.Sc.(N) nurses will, however, increase significantly i.e. from 2336 in 1981 to 6017 in 1991 and further to 11700 in 2001. While the number of those with Post Basic degree will increase from 1250 in 1981 to 2562 in 1991 and to 4072 in 2001. The number of post certificate diploma holders will increase from 6900 in 1981 to 8055 in 1991 and to 8571 in 2001.

15. The reason for relatively less increase of post-certificate diploma holders during 1991-2001 is the growing obsolescence of some of the courses like sister tutor; ward sister and mid-wife tutor etc. These are now being largely replaced by the graduate degree holders. The only course which has a significant proportion is that of PHN constituting more than 1/4th of the total nurses with post-certificate diplomas.

16. A comparison of the accumulated outturns of general nurses over different periods of time, with registration date of INC, reveal that there was an under registration during 1951-1960, the number of
qualifying nurses during this period was 20,262, while the addition to the number registered was of the order of 16,200. The corresponding figures of outturns and addition to registration during 1961-70 were 45,201 and 45,036 respectively. But during later period i.e. during 1971-80 and further by 1981-90, the addition to registration figures are much more than the respective outturns. This reflects an almost complete coverage of personnel but due to lack of updating registration, the numbers with INC are much more than the number qualified.

Statewise/Locationwise supply of Nursing Personnel for the years 1971, 1981 and 1991

Adopting the national level estimates for the years 1971, 1981 and 1991, as controls, the estimates of supply of General Nurses, ANMs and LHV's have been worked out by States and by rural/urban areas. For the purpose, an appropriate technique has been developed to estimate the inter-state migration rates on the basis of the census data by giving due weightage to the states' internal demand to absorb its outturn vis-a-vis the number qualified during the corresponding period.

The exercise on statewise estimation of supply is confined to major 17 states and the remaining smaller states and UTs are clubbed together as "other States and UTs" which together constitute less than 10% of the total stock of
nursing personnel.

For the purpose of this exercise, the data as available from Census and that from Ministry of Health & F/W on number of nurses, ANMs (FHW) and LHV (HA/F) by states and in rural/urban areas in the years 1971, 1981 and 1991 was compiled. It was noted that information on number of ANMs in rural areas as available from Ministry did not conceptually conform to the existing situation as the course and the category has structurally undergone change after the recommendations of Kartar Singh Committee in 1977 introducing 'Multipurpose Worker Scheme' at the grass root levels. Hence no attempt was made to estimate the statewise/locational number of ANMs/LHVs for the years 1971. But for the rest of the years and for general nurses for all the three years, the Ministry's data was preferred to Census data for rural areas and that in respect of urban areas, the census figures were noted to be close to the stock of qualified persons worked out on the basis of the accumulated annual outturns but for a small fraction of practicals included in urban areas (only 8% in urban areas).

The detailed procedure adopted for estimating the statewise stock of qualified general nurses, ANMs and LHVs has been given in Chapter VIII.

The salient findings of the exercise are:

17. 4.65% of the qualified general nurses in 1971 were working in rural areas, their percentage is noted
to be 6.72% in 1981 and 9.68% in the year 1991.

18. In 1991 1/6th of the total stock of qualified nurses are in Maharashtra. Tamil Nadu & West Bengal together, share another 1/6th of the available stock. Then come the states of Kerala and Andhra Pradesh forming another cluster of employing 13% of the total stock, closely followed by the states of Gujarat, Bihar and then Karnataka & Rajasthan in descending order in terms of absolute number of nurses inhabiting these states.

19. 24% of the ANMs and only 7% of the LHV were noted to be working in urban areas in 1991.

20. U.P. was the single state employing 18% of the total ANMs (being 29279) followed by Maharashtra with only 15114 ANMs working there, and then Tamil Nadu (12941), MP (12865), Karnataka (11333) and West Bengal (10037). These six states together employed 58% of the total stock of ANMs.

21. Andhra Pradesh, Punjab & J&K had more than 1/3 of their respective stock of ANMs working in urban areas (having respectively 33%, 36%, and 49%).

22. Of the total 24,097 LHV in 1991, 4471 were noted to be in Maharashtra, 3318 in U.P., 2106 in Tamil Nadu, 1873 in Andhra Pradesh and 1916 in Kerala. Thus these five states together employed more than 50% (nearly 58%) of the total LHV.
Further, a study of the available nurses in terms of their availability per 1000 persons separately in rural and urban areas and over the three years i.e. 1971, 1981 and 1991 (Reference Table 8.6) revealed that:

23. Despite the largest cluster of nurses in Maharashtra in 1991, the Kerala had the most favourable nurse:population ratio of 2509 persons per nurse as against this to be 3069 in Maharashtra; of course the second state having a favourable nurse: population ratio.

24. The all-India average nurse:population ratio in 1991 was 4967 and other states having this ratio to be less than all India average are Tamil Nadu (3499), Gujarat (3902), H.P. (3968 with norm for Hilly area), Karnataka (4790), West Bengal (4475), Punjab (4488) and Rajasthan (4899).

25. The states with worst nurse:population ratio therefore in descending order are U.P. (11319), Bihar (8234), J&K (8083- a Hilly area), Haryana (7047), Orissa (6842), Andhra Pradesh (6313) and Assam (6188).

26. Of the above states with respective poor aggregative nurse:population ratio, Orissa, Assam and Bihar show an exceptional congregation of nurses in urban areas. Assam with only 11.1% of the population residing in urban areas had 98.9% of
the nurses in urban areas thereby resulting in an urban population nurse ratio of 693; which is too good for a country like ours. Similarly the nurse population ratio in Orissa & Bihar is noted to be 1003 and 1231; better than all-India average urban nurse:population ratio of 1414.

27. The rural population per ANM, at all India level is noted to be 5182 in 1991 and this fairly conforms to the recommended national norm. Except for the states of J & K (15431), Bihar (9942), AP (7733) and West Bengal (6074), all other states have good ANM:rural population ratio, thereby showing an adequate and uniform availability of ANMs in different states.

28. As per national norm, there should be one LHV/HS(F) for every six ANM, and the actual availability of ANMs per LHVs in 1991 at All India level is noted to be 5.4 i.e. better than the recommended norms.

29. Despite this national achievement, the states like Rajasthan, Assam have a very poor ANM:LHV ratio being 12.9 and 11.6 respectively. Other states with poor ANM:LHV ratio are West Bengal having 8.6 and M.P. 8.2 with ANMs. Orissa and Uttar Pradesh respectively shows an ANM:LHV ratio of the order of 7.5 and 7.3.

30. But, it was interesting to note that the out--
migrating states were not essentially from the states with better nurse:population ratio. Assam, Haryana are the states with poor nurse:population ratios but still are not able to absorb their outputs and hence are supplying to other states. Of course, other outmigrating states e.g. Kerala, Karnataka, Maharashtra & Punjab are the states which have attained better nurse:population ratio than the All India figures.

31. Rate of out-migration/in-migration however depends upon the relative magnitude of the educational outputs during a period vis-a-vis the state's absorptive capacity to employ them in the process of meeting the 'replacement needs' and additional demand.

32. In view of above, the rates of in-migration/out-migration are noted to vary during the decades 1971-80 and 1981-90 for different states. The highlights of the exercise on estimation of inter-state migration are:

(i) The overall magnitude of inter-state migration has declined from 13.27% to 10.55% during the period 1971-80 and 1981-90 at all India level.

(ii) Most of the states have retained their status of being either out-migrating or in-migrating during these two decades except for the state of Tamil Nadu, which ceased to have in-migration during
1981-90 as its own resources increased enough to meet its internal demand; while it was in-migrating during 1971-80.

(iii) The State of Kerala has continued to have out-migration at an accelerated rate of 56.46% during 1981-90 as against the 46.45% rate observed during 1971-80. It has marginally increased in the of Karnataka from 1.33% to 1.82% during the corresponding periods. The rate of out-migration has, however, declined in the case of Punjab, Maharashtra, Haryana and Assam.

(iv) The in-migration has significantly increased in the state of Gujarat from only 3.89% during 1971-80 to 31.70 during 1981-90 and in Uttar Pradesh from 7.53% to 22.71% during the same period.

(v) It has increased in the State of Andhra Pradesh from 8.36 to 13.29; in Orissa from 18.1% to 20.9%.

(vi) In rest of the States with in-migration, e.g. Bihar, M.P. Rajasthan, West Bengal, H.P. and J&K the rate of in-migration have declined substantially.

**Estimates of Requirements of Nursing Personnel 2001**

The demand projection for general nurses are worked out by using four alternative approaches viz., Nurse:Population ratio norm; Nurse:Doctor Ratio norm; Nurse:Expenditure relationship and the Component approach, and the requirements
for ANMs/LHVs (HA/F) have been worked out through a combination of techniques comprising of programmatic approach, the population ratio and the staffing pattern norms. There are, in all ten sets of demand projections for nurses and two sets for ANMs/LHVs (HA/F).

33. The requirement of general nurses in the year 2001 works out to be of the order of 271,056 assuming that there will be one nurse for 3638 persons. This ratio has been derived on the basis of past linear relationship.

34. As regards the requirements of nurses on the basis of nurse doctor ratio; four sets of requirements were worked out on the basis of four following alternative assumptions made for the year 2001, viz., 1.1, 1.5, 2.0, and 3.0 number of nurses respectively per doctor. The requirement estimated under these four sets of assumptions are 215,884, 296,715, 395,620 and 593,430 respectively.

35. The requirement worked out on the basis of nurse expenditure relationship are 221,434.

36. The requirements under component approach vary between 304,982 to 599,680 depending upon the assumptions made in respect of nurse:bed ratio. The components adopted under this approach are number of beds; administration; teaching and community services.
For working out the requirement of nurses and ANM/LHV (HA/F) for community services, first the infrastructure for the difficult and plain areas were worked out, which needed an estimation of the population residing in difficult areas. The difficult area in the present study is defined in terms of the range of population dispersion whether tribal or otherwise. The estimates of population residing in difficult areas were done for each state independently.

The population residing in difficult areas is noted to vary widely over States. It is noted to be only 0.68 per cent of the total rural population in Kerala, between 24 to 25 per cent in Orissa & West Bengal, 52% in Rajasthan and 100% in the states of J & K and Himachal Pradesh.

Based on these estimated population figures, the number of CHCs, PHCs and sub-centres in these areas have been worked out by the Govt's norms. Thereafter, the requirements of ANMs/LHVs and nurses, are worked by applying staffing pattern norms to the estimated infrastructure. The estimate of requirements for ANMs/LHVs are, however, worked out by applying alternative staffing pattern norms - i.e. the present GOI norm and the other recommended by the High Power Committee on Nursing and Nursing Profession.

37. The requirements of ANMs in 2001 work out to be respectively 171,930 and 295,872 under the two alternatives and those of LHVs under the two alternatives are respectively 23,994 and 98,623.
A comparison of the estimated requirements of nurses with probable supply in 2001 reveals that the supply exceeds demand in case of two sets i.e. the one based on doctor nurse ratio norm based on past trends and other on the basis of nurse expenditure relationship. The surplus noted in these two cases varies between 27956 under nurse-expenditure relationship method and 33506 on the basis of nurse:doctor ratio determined on the basis of past trends. The reason for this result is that the expenditure on health & family welfare as percentage of the total national GDP was quite low in the past (varying between 1.56% in 1981 to 2.04 in 1988) and the same has been regressed into the future which works out to be only 2.69% in the year 2001, which is certainly too low to aim at as envisaged expenditure on health & medical service by the end of the country.

Likewise trend based doctor:nurse ratio of 1:1 is also quite low and this is why the projected demand based on these trends also came out to be low. The linear relationship projected into the future implies the continued operation of the same set of causative factors and at the same pace which it had operated in the past. This assumption does not remain valid under such circumstances where a subtle change is required in the forthcoming changing environment.
38. For the remaining three sets of demand under doctor:nurse ratio norms, the shortages are varying between 47,325 and 344,040 under the low, medium and high assumption of doctor:nurse ratio respectively being 1:1.5; 1:2.0 and 1:3.0.

40. Similarly under the component approach, the shortages are noted to vary widely between 555,92 to 350,290 respectively worked out on the basis of the assumed nurse:bed ratio of 3.4 determined on the basis of pat trends and being 1.48 recommended by the High Power Committee on Nursing & Nursing Profession (1989).

41. The shortages noted under the high assumption with regard to nurse:doctor ratio (3:1) and those with the bed:nurse ratio recommended by High Power Committee are quite close being 344,040 and 350,290. Obviously these are too ambitious to be aimed at as targets in 2001.

42. A reasonably consistent and comparable set of shortages are, however, noted on the basis of the low assumption (1.5) in respect of nurse:doctor ratio norm being 47325 and being 555,92 under the component approach when the nurse:bed ratio determined on the past trends.

The shortages exclusively for hospital bed services have been worked out by comparing the estimated supply net
of community services which implies that requirements of nurses for community services will be met first on priority basis. Four different sets of demand projections are worked out by using alternative assumptions with respect to nurse:bed ratio respectively being 3.4 over the basis of past trend; 1.49 on the basis of High Power Committee and 2.5 on the basis of earlier Committees and 3.0 on the basis of Bhore Committee.

43. Among these, the estimates based on High Power Committee’s norm are the highest and those based on the past trends are the minimum. The norm suggested by Bhore Committee among these sets appear to be quite moderate; but even for achieving this norm a short supply of nearly 82,175 is noted. A minimal shortage of 49858 nurses is a matter of policy concern as in order to achieve a nurse:bed ratio of 3.4 this number of nurses must be provided for.

44. The statewise analysis reveal that most deficient states would be U.P. and M.P. respectively with shortages of 17014 and 10153, accounting thereby nearly 50% of the estimated shortages. The other states which also show significant shortages are Bihar (9387) and A.P. (7888) remotely followed by West Bengal (5840) and Gujarat (4875). Other States have marginal shortage ranging between less than one thousand to 2413 to the maximum.

The states of Kerala, Punjab and Maharashatra will,
however, continue to have surpluses and therefore will be among the out migrating states.

The other out migrating states e.g. Haryana, Assam and other states & UTs will shift from being surplus states to shortage states.

45. A comparison of the requirements of ANMs in 2001 with probable supply in Table 11.6 would reveal that there will be an aggregate surplus of 76763 ANMs in 2001 as per the requirements under Alternative I. But despite this aggregative surplus at the national level; the states of Bihar and J&K will continue to have significant shortages. In other states there will be surplus. The states with moderate surpluses would be Assam, Rajasthan, West Bengal and H.P; but significant surpluses would be in the states of U.P. (18916) Maharashtra (11625) Tamil Nadu (11206) Karnataka (8778). These states will account for more than 2/3 of the total surplus.

46. As per the requirements estimated on the basis of Alternative II; a shortage of the order of 47173 will emerge at the national level. Twelve out of eighteen states under study will have shortages except for the states of Punjab, Maharashtra, Tamil Nadu, Karnataka, Haryana and other states and UTs. These states show surpluses even after meeting the requirements under Alternative II.
The states with marked shortages are Bihar (21339) West Bengal (8461) M.P. (6037) Rajasthan (7663) A.P. (6121) Assam (4380) & Gujarat (3000). The remaining states show only marginal shortages of less than 1000. In this way, the phenomenon of inter-state migration is likely to come up even in case of ANMs too.

The above discussion provides only the quantitative dimensions of the requirements of ANMs on the basis of the prescribed norms. The ANMs are the first and primary contact point between the community and the organization of health service system which apparently seemed to have failed in the delivery of adequate services to the rural population. In fact, the primary health care approach has immense implications in respect of community's involvement vis-a-vis the role of ANM in the context of rural health care services which need to be considered for preparing a health manpower category in relevance to the needs of the local conditions.

CONCLUDING REMARKS

In the health service development of India, nurses assume a significant role particularly in view of the fact that PHC has been adopted as the approach for achieving the goal of HFA. It is essential that minimum posts of nursing personnel must be provided in various health care institutions to improve the outreach of the facilities in a cost effective manner. Although there are apparently no short-
ages as the there do not exist any significant number of vacant posts, nor do the employers face any difficulty in getting suitable candidates except for reserved posts, yet, there are significant hidden shortages in view of the workload in various institutions.

In addition to the provision of the adequate number of personnel, it is essential that suitable conditions are created to ensure an effective utilization and proper distribution of this much needed manpower resource. The issue of effective utilization raises much wider issues of job descriptions; career development prospects, relevance of educational curricula to the expected job roles/activities. There is a possibility that in some cases, the activities sought might overlap between physicians/nurses/workers. But the decision makers in this regard should consider the question of cost effectiveness of the services and the availability of such personnel. 'Nurse' is a category who can perform the function of a professional as well as that of a social worker in the community, and hence due emphasis should be given to the development of this category.

It must be borne in mind that no amount of additional input of nursing personnel would help attain the goal unless there are adequate provisions of supplies, equipment and facilities required for more effective utilisation of personnel and the provision of better nursing care to individuals/patients in the community setting/and at hospitals. Hence there is also a need to view the problem of nursing manpower planning vis-a-vis the planning for health care delivery system in totality.